

MontanaTech

THE UNIVERSITY OF MONTANA

2010 INSTITUTIONAL SELF-STUDY



PREPARED FOR
NORTHWEST
COMMISSION ON
COLLEGES AND
UNIVERSITIES

MontanaTech

THE UNIVERSITY OF MONTANA

2010 INSTITUTIONAL
SELF-STUDY
APRIL 12-14, 2010

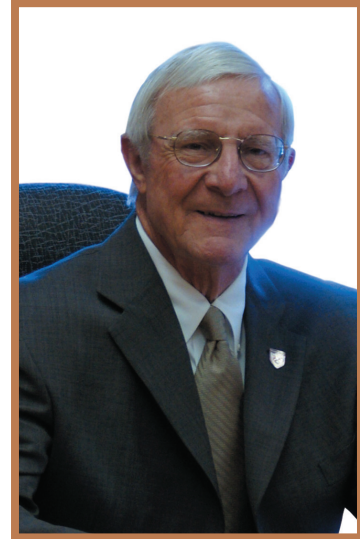


PREPARED FOR
NORTHWEST
COMMISSION ON
COLLEGES AND
UNIVERSITIES

LETTER FROM CHANCELLOR GILMORE

February 4, 2010

Dr. Sandra E. Elman
Executive Director
NW Commission on Colleges & Universities
8060 165th Avenue NE, Suite 100
Redmond, WA 98052



Dear Dr. Elman:

The enclosed **Institutional Self-Study Report** represents the efforts of faculty, staff, students and administration of Montana Tech of The University of Montana. While the faculty contributed substantially to this Self-Study, none of the groups named dominated the study. This is truly an institutional self-study that represents the efforts of all constituencies of Montana Tech.

Based on a review of the requirements of the Northwest Commission on Colleges and Universities for accreditation and the evidence provided by the Self-Study, I believe Montana Tech fully meets all these requirements. We look forward to the ten-year Accreditation Reaffirmation Review and we welcome the Evaluation Team to our campus.

Montana Tech was chartered as the Montana State School of Mines by the third Montana Legislature on February 17, 1893. Although name changes have occurred over the years, our campus in Butte remains an important part of the Montana University System which is governed by the Montana Board of Regents of Higher Education that has constitutional authority to operate public higher education in Montana. Montana Tech has a Chancellor that serves as the full-time executive officer. The Chancellor reports to the President of The University of Montana and through the President to the Commissioner of Higher Education and the Board of Regents. Montana Tech is fully authorized to award certificates, associates, bachelors' and masters' degrees.

Strategic planning, including review and modification of our mission and vision, is a significant part of our management practices. Assessment is taken seriously and we respond to trends we see from assessment. For example, we saw a trend that writing was one of our lowest scores on the MAPP Exam. Despite the fact that the score was acceptable, we hired a writing coordinator who is working hard to see that our instruction in this area improves.

Montana Tech strongly believes that students are first. The education, interest and well-being of our students are the primary purposes of the institution. Our financial resources are dedicated to these purposes.

The majority of our programs require two or more years for completion and lead to

SELF-STUDY 2010

degrees. Our degree programs require an appropriate and substantial coherent component of general education. Our general education courses, as well as other courses, do not have any limits on freedom of inquiry or expression and faculty are encouraged to require students to do independent work, analyze what they learn and to deal with both abstract and concrete concepts. We clearly define and publish program requirements. Our programs require an appropriate foundation and we admit students based on appropriate criteria.

Montana Tech has an outstanding faculty. We have full-time core faculty for every degree program. The environment at Montana Tech is one that encourages faculty-student interaction.

Our library facilities are excellent for our focused mission, and the larger and broader holdings of the Mansfield Library of The University of Montana-Missoula are available through electronic means.

The catalog of Montana Tech is current and all our advertising properly describes our regional and professional accredited status. Our admission policies are followed and are appropriate for the programs offered.

Montana Tech operates in a highly efficient and financially responsible way. State support currently provides about one half of the operating budget. The institution has managed the financial resources well and provides outstanding education at an affordable cost. Our financial records are audited annually and an opinion on the financial statement is issued.

Principal educational programs of this institution have been in operation for more than one year and all of our programs currently have students pursuing these programs.

Montana Tech accepts the policies and standards of the Northwest Commission on Colleges and Universities and agrees to comply with these standards and policies as currently stated or as modified in accordance with due process. We will disclose to the Northwest Commission on Colleges and Universities any and all information as the Commission may require to carry out its evaluation and accreditation function. Montana Tech understands and agrees that the Commission may, at its discretion, make known to any agency or members of the public that may request such information, the nature of any action, positive or negative, regarding the institution's status with the Commission.

Montana Tech meets all the eligibility requirements for continued membership in the Northwest Commission on Colleges and Universities and invites the Commission to conduct an evaluation to ascertain our qualifications for reaffirmation of regional accreditation.

Sincerely,



W. Franklin Gilmore
Chancellor

MONTANA TECH SELF-STUDY STEERING COMMITTEE

Chip Todd, Chair

Professor of Mathematical Sciences
Author: Standard 2
Contact: ctodd@mtech.edu

Frank Gilmore

Chancellor
Co-author: Standard 8
Contact: fgilmore@mtech.edu

Doug Abbott

Vice Chancellor for Academic Affairs and Research
Co-author: Standard 1, Standard 6, Standard 9
Contact: dabbott@mtech.edu

Mike Johnson

Vice Chancellor for Development & Student Services; President, Montana Tech Foundation
Co-author: Standard 3, Standard 8
Contact: mjohnson@mtech.edu

Maggie Peterson

Vice Chancellor for Administration & Finance
Co-author: Standard 7, Standard 8
Contact: mpeterson@mtech.edu

Joe Figueira

Associate Vice Chancellor for Academic Affairs and Research; Dean of Graduate School
Co-author: Standard 4
Contact: jfigueira@mtech.edu

Paul Beatty

Associate Vice Chancellor of Student Affairs; Dean of Students
Co-author: Standard 3
Contact: pbeatty@mtech.edu

Doug Coe

Dean, College of Letters, Sciences, & Professional Studies
Co-author: Standard 4
Contact: dcoe@mtech.edu

John Garic

Dean, College of Technology
Contact: jgaric@mtech.edu

Ann St. Clair

Director, Library
Author: Standard 5, Library
Contact: astclair@mtech.edu

Melissa Harrington

Institutional Research, Director
Contact: mharrington@mtech.edu

Dhann Faught

Budgets & Purchasing, Associate Director
Co-author: Standard 7, Standard 8
Contact: dfaught@mtech.edu

Mike Kukay

Network Computer Services, Director
Author: Standard 5, Information Technology
Contact: mkukay@mtech.edu

Jennifer Simon

Manager of Online Services and Extended Projects
Contact: jsimon@mtech.edu

David Ottolino

Assistant Professor of Business & Information Technology
Co-Author: Standards 1, 6, and 9
Contact: dottolino@mtech.edu

Tami Windham

Administrative Associate, Mathematical Sciences & Computer Science Department
Contact: twindham@mtech.edu

Steve Olig

Associated Students of Montana Tech, Representative
Contact: sjlig@mtech.edu

SELF-STUDY 2010

ACKNOWLEDGMENTS

Many members of the Montana Tech community put forth commendable effort in the production of this self-study. The steering committee would like to recognize the following individuals for their significant contributions.

- » **Amanda Badovinac**
Public Relations Director
- » **Marilyn Cameron**
Environmental Health & Safety, Director
- » **Tony Campeau**
Enrollment Management, Director
- » **Gloria Alvarado Carter**
Research Project Administrator, RAVE
- » **Jacob Floch**
Residence Life, Director
- » **Joe Kujawa**
Telephone Service Manager
- » **Joe McClafferty**
Athletic Director
- » **Jack McGuire**
Professor Emeritus, General Engineering
- » **Karen Monaghan**
Administrative Associate to the Vice Chancellor for Academic Affairs & Research
- » **Rich Pylypuw**
Physical Facilities, Assistant Director
- » **Sarah Raymond**
Career Services, Director
- » **Mike Richardson**
Director, Enrollment Processing
- » **Kathy Stevens**
Distance Learning Coordinator
- » **Lisa Wareham**
Lisa Wareham Photography
Photo Credit, Standard 3 Cover Photo

TABLE OF CONTENTS

STANDARD 1: INSTITUTIONAL MISSION AND GOALS, PLANNING AND EFFECTIVENESS

- 1.A Mission and Goals 1-1
- 1.B Planning and Effectiveness 1-9

STANDARD TWO: EDUCATIONAL PROGRAM AND ITS EFFECTIVENESS

- 2.A General Requirements 2-1
- 2.B Education Program Planning and Assessment 2-9
- 2.C Undergraduate Programs 2-21
- 2.D Graduate Programs 2-35
- 2.E Graduate Faculty and Related Resources 2-37
- 2.F Graduate Records and Academic Credit 2-41
- 2.G Continuing Education and Special Learning Activities 2-43
- 2.H Non Credit Programs and Courses 2-50

STANDARD THREE: STUDENTS

- 3.A Purpose and Organization 3-1
- 3.B General Responsibilities 3-6
- 3.C Academic Credit and Records 3-24
- 3.D Student Services 3-27
- 3.E Intercollegiate Athletics 3-54

STANDARD FOUR: FACULTY

- 4.A Faculty Selection, Evaluation, Roles, Welfare, and Development 4-1
- 4.B Scholarship, Research and Artistic Creation 4-22

STANDARD FIVE: LIBRARY AND INFORMATION TECHNOLOGY

- 5.A Library: Purpose and Scope 5-1
- 5.B Library: Information Resources and Services 5-14
- 5.C Library: Facilities and Access 5-18
- 5.D Library: Personnel and Management 5-20
- 5.E Library: Planning and Evaluation 5-26
- 5.A Information Technology: Purpose and Scope 5-38
- 5.B Information Technology: Information Resources and Services 5-43
- 5.C Information Technology: Facilities and Access 5-47
- 5.D Information Technology: Personnel and Management 5-49
- 5.E Information Technology: Planning and Evaluation 5-54

SELF-STUDY 2010

TABLE OF CONTENTS

STANDARD SIX: GOVERNANCE AND ADMINISTRATION

6.A	Governance System	6-1
6.B	Governing Board	6-3
6.C	Leadership & Management	6-9
6.D	Faculty Role in Governance	6-20
6.E	Student Role in Governance	6-23

STANDARD SEVEN: FINANCE

7.A	Financial Planning	7-1
7.B	Adequacy of Financial Resources	7-11
7.C	Financial Management	7-22
7.D	Fundraising and Development	7-26

STANDARD EIGHT: PHYSICAL RESOURCES

8.A	Instructional and Support Facilities	8-1
8.B	Equipment and Materials	8-7
8.C	Physical Resources Planning	8-17

STANDARD NINE: INSTITUTIONAL INTEGRITY

9.A	Institutional Integrity	9-1
-----	-------------------------	-----

STANDARD 1 - INSTITUTION MISSION AND GOALS, PLANNING AND EFFECTIVENESS



INTRODUCTION

Montana Tech of The University of Montana is one of four separately accredited institutions of The University of Montana:

TABLE I: CAMPUSES OF THE UNIVERSITY OF MONTANA

FOUR YEAR INSTITUTION	LOCATION	ASSOCIATED TWO-YEAR INSTITUTION
The University of Montana-Missoula	Missoula	The University of Montana-Missoula College of Technology
	Helena	The University of Montana-Helena College of Technology
Montana Tech of The University of Montana	Butte	Montana Tech of The University of Montana College of Technology
The University of Montana-Western	Dillon	

The institutions making up The University of Montana are all part of the Montana University System (MUS). The other parts of the Montana University System are shown in Tables II and III below:

TABLE II: CAMPUSES OF MONTANA STATE UNIVERSITY

FOUR YEAR INSTITUTION	LOCATION	ASSOCIATED TWO-YEAR INSTITUTION
Montana State University-Bozeman	Bozeman	
Montana State University-Billings	Billings	Montana State University – Billings College of Technology
Montana State University-Northern	Havre	
	Great Falls	Montana State University – Great Falls College of Technology

TABLE III: PUBLIC COMMUNITY COLLEGES

TWO-YEAR INSTITUTION	LOCATION
Dawson Community College	Glendive
Flathead Valley Community College	Kalispell
Miles Community College	Miles City

SELF-STUDY 2010

Montana Tech of The University of Montana traces its roots to the enabling act which granted statehood to the people of Montana. In that act, the United States Congress set aside 100,000 acres to establish and maintain a school of mines. In 1900, the Montana School of Mines opened its doors. In 1965, the school underwent a name change to the Montana College of Mineral Science and Technology. On January 21, 1994, the Board of Regents adopted a plan to restructure the entire Montana University System (described in the document "The Restructuring of the Montana University System (Phase One)") (Exhibit 1.A.I) followed by adoption of a resolution on July 6, 1995 initiating a second phase (Exhibit 1.A.II). This restructuring created the Montana University System described in the preceding tables and gave the college its new name, Montana Tech of The University of Montana. It also assigned to Montana Tech what had been the Butte Vocational-Technical Center and what is now the Montana Tech of The University of Montana College of Technology (COT).

Article X, Section 9 of the Constitution of the State of Montana establishes a Board of Regents of Higher Education, in which is vested "full power, responsibility, and authority to supervise, coordinate, manage, and control the Montana University System, and supervise and coordinate other public educational institutions assigned by law." In addition to governing the fourteen campuses of the Montana University System listed above, the Board of Regents actively coordinates educational efforts with the seven tribal and three private colleges in the state.

Both the work of the Board of Regents and its relationships with the administrators, faculty, staff, students, and other stakeholders in the system it governs are defined in system-wide policies that it promulgates. These policies are codified in the Montana Board of Regents of Higher Education Policy and Procedures Manual, an electronic document readily available to all stakeholders on the Montana University System website (<http://mus.edu>).

The Board of Regents consists of seven members who are appointed by the Governor and confirmed by the Senate to seven-year overlapping terms. The Governor, the Superintendent of Public Instruction, and the Commissioner of Higher Education are ex officio, non-voting members of the Board.

STANDARD 1.A: MISSION AND GOALS

The institution's mission and goals define the institution, including its educational activities, its student body, and its role within the higher education community. The evaluation proceeds from the institution's own definition of its mission and goals. Such evaluation is to determine the extent to which the mission and goals are achieved and are consistent with the Commission's Eligibility Requirements and standards for accreditation.

1.A.1 The institution's mission and goals derive from, or are widely understood by, the campus community, are adopted by the governing board, and are periodically reexamined.

Rewritten in 2004-2005, Montana Tech's current mission and vision statements, and the related statement of guiding principles, read as follows:

Mission Statement

To meet the changing needs of society by supplying knowledge and education through a strong undergraduate curriculum augmented by research, graduate education, and service.

Vision Statement

To be a leader for undergraduate and graduate education and research in the Pacific Northwest in engineering, science, energy, health, information sciences, and technology.

Guiding Principles

- » *To honor our heritage as a premier engineering institution.*
- » *To attract and educate motivated and capable students.*
- » *To provide a quality education that blends theory with practice.*
- » *To recruit, encourage, and enable faculty to develop regional and national reputations in teaching and research.*
- » *To collaborate with others to serve the needs of the community, the State of Montana, and the nation.*

The rewritten statements were developed in a collaborative process involving administrators, faculty, and staff and were approved by the Board of Regents on September 22, 2005.

As part of the Montana University System, Montana Tech's mission and vision is heavily influenced by the mission and vision statements articulated by the Board of Regents for the Montana University System. On October 19, 2001, the Board of Regents adopted the following Strategic Plan: Mission, Vision, Goals, and Objectives of the Montana University System (Exhibit 1.A.IV)

STRATEGIC PLAN: MISSION, VISION, GOALS, AND OBJECTIVES OF THE MONTANA UNIVERSITY SYSTEM

Mission

The mission of the Montana University System is to serve students through the delivery of high quality, accessible postsecondary educational opportunities, while actively participating in the preservation and advancement of Montana's economy and society.

SELF-STUDY 2010

Vision

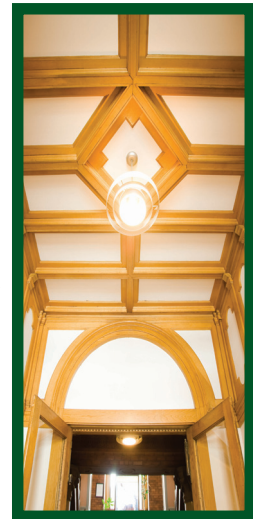
We will prepare students for success by creating an environment of ideas and excellence that nurtures intellectual, social, economic, and cultural development. We will hold academic quality to be the prime attribute of our institutions, allocating human, physical, and financial resources appropriate to our educational mission. We will encourage scientific development and technology transfer, interactive information systems, economic development and lifelong learning. We will protect academic freedom, practice collegiality, encourage diversity, foster economic prosperity, and be accountable, responsive, and accessible to the people of Montana.

Goals

The following five goals and subordinate objectives will guide the Montana University System in moving toward realization of its vision for the future of higher education in Montana.

- A. To provide a stimulating, responsive, and effective environment for student learning, student living, and academic achievement.*
 - 1. To assure adequate campus policies to protect academic freedom and promote the free exchange of ideas while requiring pre- and post-tenure evaluation of faculty performance and systematic program review that reflect the Regents' priority on student learning.*
 - 2. To offer academic programs and services focused around approved campus missions and consistent with available resources.*
 - 3. To foster an environment that attracts and retains high quality faculty and staff.*
 - 4. To improve rates of student retention and degree completion across the Montana University System.*
 - 5. To develop, maintain at/near state-of-the-art condition Montana University System facilities, technology and infrastructure and to coordinate the use of capacities and resources across all MUS institutions.*
 - 6. To ensure student readiness for higher education and validate student competencies for graduation.*
- B. To make a high quality, affordable higher education experience available to all qualified citizens who wish to further their education and training.*
 - 1. To identify or seek creative funding alternatives that will expand public and private resources.*
 - 2. To make sure that every academically qualified individual has an opportunity to receive the benefits of higher education without financial or social barriers.*
 - 3. To expedite student progress towards degree objectives in order to reduce time to degree (and related costs) and maintain affordability for the widest range of students.*
- C. To deliver higher education services in a manner that is efficient, coordinated, and highly accessible.*
 - 1. To operate as a unified system of higher education and increase productivity through effective planning, assessment, collaboration and resource sharing.*

2. To increase student access to Montana University System programs through coordinated statewide delivery and expanded use of technology.
 3. To increase the coordination of academic resources to improve student progress toward degree.
 4. To promote diversity with special attention to Montana's Native American populations.
- D. To be responsive to market, employment, and economic development needs of the State and the nation.
1. To offer programs and services consistent with the changing market and employment needs of the state and nation.
 2. To encourage basic research and technology transfer to contribute to the economic development of the State of Montana.
 3. To promote the full spectrum of higher education needs and opportunities in 2-year, 4-year, graduate and professional education.
 4. To make the Montana University System more accessible and responsive to businesses, government, and other constituents.
- E. To improve the support for and understanding of the Montana University System as a leading contributor to the State's economic success and social and political well-being.
1. To improve and expand the communication and outreach of the Montana University System to constituents, communities and policy makers.
 2. To meet constituents' expectations for accountability through responsible stewardship of resources.
 3. To expand community involvement, service and outreach initiatives at the campus level.
 4. To partner with state government, our congressional delegation, K-12 education, tribal and local governments, labor and business leaders to preserve and improve the economy of Montana.



In July 2006, the Montana Board of Regents adopted a comprehensive strategic plan intended to define goals and set the priorities for higher education in the state of Montana. The plan was further revised in October 2008. In August 2009, the Board of Regents launched a new effort for the purpose of "*reinventing and reforming the Montana University System.*"

As noted previously, the Montana Board of Regents is continually reviewing and modifying their strategic plan. The 2010 Montana Board of Regents Strategic Plan is located on the Regent's homepage: <http://www.mus.edu/data/data/strategicplan.asp> (Exhibit 1.A.V).

The *strategic plan of Montana Tech* (Exhibit 1.A.I) can be found on its website. Montana Tech's Strategic Planning Committee meets throughout the year to assess how

SELF-STUDY 2010

the campus is performing relative to the six strategic initiatives (goals) of the strategic plan:

- » Sustain and Enhance the Quality of all Academic Programs
- » Advance the Reputation for Quality and Value
- » Enhance Research and Scholarly Activities
- » Enhance Relationships with Business and Industry
- » Enhance Educational Access and Opportunities
- » Increase Enrollment to 2,688 (FTE) by 2012

A steering committee is responsible for reviewing progress in each of the aforementioned six areas.

1.A.2 The mission, as adopted by the governing board, appears in appropriate institutional publications, including the catalog.

Both Montana Tech's mission and vision statements and the related statement of guiding principles appear on its [website](#), in the catalog (page iv of the [2009-2010 catalog](#)), and in other appropriate institutional publications such as [Tech's Vision 2025](#) document (Exhibit 1.A.VI).

The [mission and vision of the Montana University System](#) as articulated by the Board of Regents can be found on its [website](#).

1.A.3 Progress in accomplishing the institution's mission and goals is documented and made public.

The progress in accomplishing the institution's mission and goals is reported to its constituencies in a variety of ways. The Chancellor employs the Chancellor's Cabinet as a means to disseminate updates and analysis of progress relative to the six goals of the strategic plan. Regular campus reports are made to each meeting of the Board of Regents. Reports are also delivered at faculty meetings and in other campus venues, such as monthly reports provided to the Montana Tech Foundation Board of Directors. Progress is also reported on the Montana Tech [website](#). Additionally, the Strategic Planning Committee meets regularly to assess the campus's progress in meeting the identified goals in the strategic plan.

1.A.4 Goals are determined consistent with the institution's mission and its resources – human, physical, and financial.

The goals and objectives of the institution have been, and continue to be, based on its mission and vision as well as on its resources. The present articulation of the mission and vision is embedded in the campus's [Strategic Plan](#) and Vision 2025, the latter of which is a product of a task force assembled by the Chancellor in the Spring of 2006 and originally published in 2007. While readily acknowledging the challenges facing Montana Tech, it also envisions a future in which Montana Tech continues to fulfill its mission and vision.

1.A.5 The institution's mission and goals give direction to all its educational activities, to its admission policies, selection of faculty, allocation of resources, and to planning.

Montana Tech uses its mission, vision, guiding principles, and strategic plan both in the allocation of resources and in the guidance of its educational and research activities. For example, when enrollments have exceeded anticipated levels, excess revenues are allocated to those proposals that can demonstrate consistency with the institution's mission, vision, and strategic plan. In particular, the proposals are required to show how they advance the objectives laid out in the strategic plan. The proposals are reviewed by both the Executive Budget and campus-wide budget committees.

Somewhat more routine activities are also subject to this type of scrutiny. For example, when a new academic program is proposed to the Board of Regents, the first two questions on the form making the proposal are:

1. How does this program advance the campus' academic mission and fit its priorities?
2. How does this program fit the Board of Regents' goals and objectives?

These mechanisms help assure that all activities undertaken and any resources committed by the institution are consistent with its mission and vision and with its goals and objectives.

CLOSING THE LOOP

Montana Tech's relatively new Electrical Engineering program is a good example of how the campus uses its mission and goals to plan for new degrees and to allocate resources. In 2002, the General Engineering Department's "Control Systems" option was renamed "Electrical Engineering." The option had two faculty members that covered a majority of the courses required within the curriculum. After four years of working with Montana Tech's administration, as well as faculty and administrators at Montana State University – Bozeman, the Electrical Engineering Option was elevated to degree status (bachelors and masters) by the Montana Board of Regents. In 2007, the Electrical Engineering Department was formed and in 2008 the bachelors degree was accredited by ABET. Since 2007, the department has received over \$220,000 in funding from the campus to hire two additional faculty and construct a controls lab as well as a power supply lab. Throughout this process, the Electrical Engineering faculty and department head worked with the Tech administration to ensure that this endeavor fell within the campus' mission and goals.

SELF-STUDY 2010

1.A.6 Public service is consistent with the educational mission and goals of the institution.

Montana Tech has a long history of public service.

The Montana Bureau of Mines and Geology (MBMG) is the principal source of earth science information for Montana citizens. Since 1919, the Bureau has conducted research and assisted in the orderly development of the state's mineral and water resources. As a non-regulatory agency, the Bureau provides to the public extensive advisory, informational, and technical services on Montana's mineral, energy, and water resources. For example, the Bureau early on created and still maintains a database of



all water wells drilled in the state; those data are readily available to anyone needing data on ground water resources. Increasingly, the Bureau is also involved in the study of environmental impacts to land and water, whether the impacts were caused by past practices in hard-rock mining or whether they are caused by current activities in agriculture or industry.

Two additional examples of service-oriented research centers and programs are the Center for Advanced Mineral and Metallurgical Processing and the Center for Environmental Remediation and Assessment. Still another example is the educational work performed in the Clark Fork Watershed Education Program. More examples of public service can be found in the Montana Tech Research Office newsletters and in the descriptions of the technical outreach programs on the Montana Tech website. These activities are all extensions of the educational and research activities that have long been a part of Montana Tech's traditional mission dating back to the turn of the century.

A high-profile activity of the campus in the public service arena is the Southwest Montana Regional Science Fair hosted each year on the Tech campus. The Technical Outreach Office oversees the transformation of the HPER building (gymnasium) into a venue where future scientists/engineers present their science fair projects. Faculty, staff, students, and administrators serve as volunteer judges for the event.

1.A.7 The institution reviews with the Commission, contemplates changes that would alter its mission, autonomy, ownership or locus of control, or its intention to offer a degree at a higher level than is included in its present accreditation, or other changes in accordance with Policy A-2, Substantive Change.

Montana Tech has reviewed all substantive changes with the Northwest Commission on Colleges and Universities.

STANDARD 1.B: PLANNING AND EFFECTIVENESS

The institution engages in ongoing planning to achieve its mission and goals. It also evaluates how well, and in what ways, it is accomplishing its mission and goals and uses the results for broad-based, continuous planning and evaluation. Through its planning process, the institution ask questions, seeks answers, analyzes itself, and revises its goals, policies, procedures, and resource allocation.

1.B.1 The institution clearly defines its evaluation and planning processes. It develops and implements procedures to evaluate the extent to which it achieves institutional goals.

Goals for the institution have been established in several ways. Ongoing strategic planning work is performed by the Strategic Planning Committee, a standing committee currently consisting of 21 individuals representative of administrators, faculty, staff, and students. Through consultation with constituencies, this committee establishes goals for the institution which, in turn, become the basis for action plans, budgets, and for evaluation processes that show how well each unit of the institution contributes to the institution's goals and objectives.

1.B.2 The institution engages in systematic planning for, and evaluation of, its activities, including teaching, research, and public service consistent with institutional mission and goals.

Planning - and the evaluation of teaching, research, and public service - has always been highly important to Tech. Institutional planning occurs at different levels: students, academic departments, individual school/colleges, deans council, the public, and the Executive Budget Committee are all participants in the planning process for the institution. Therefore, considerable and continuous effort is expended to maintain and improve the quality of planning at all of these levels. While not perfect, the campus is continually refining the planning process so that all constituencies are aware of planned projects for the campus.

In addition, every academic department has an Industrial Advisory Board (IAB) that assists the department in matters such as curriculum development, scholarships, and fund raising for capital equipment and other assorted department specific projects.



CLOSING THE LOOP

Institutional planning relies heavily on data to support new initiatives. In the past, the campus was able to provide data required by requesting entities, albeit in a non-systematic manner. In 2007, the campus made the decision to merge two colleges (the College of Humanities, Social Sciences, and Information Technology (HSSIT) and the College of Mathematics and Sciences (CMS)) to form a new college, the College of Letters, Sciences, and Professional Studies (CLSPS). The former Dean of CMS became the dean of CLSPS and the salary savings from the Dean of HSSIT position was used to fund a Director of Institutional Research. This new position enables the campus to be more efficient in internal campus research as well as providing information to campus, state, and national constituencies. Additionally, the Director of Institutional Research plays an integral role of providing the campus's administration with data to assist them in making informed decisions.

1.B.3 The planning process is participatory involving constituencies appropriate to the institution such as board members, administrators, faculty, staff, students, and other interested parties.

The overall responsibility for planning rests with the Executive Budget Committee, which is led by the Chancellor. This Committee is composed of the Vice Chancellors for Academic Affairs and Research, Administration and Finance, and Development and Student Services, and also includes the Controller and Business Manager. As it progresses, the planning process involves the Chancellor's Cabinet, the Chancellor's Advisory Council, the Deans Council, the Faculty Senate, ASMT (student government), the Strategic Planning Committee, and depending on the issues to be addressed, also involves other standing and ad hoc committees. As would be expected, any planning which is specific to a particular segment of the institution will involve both the stakeholders of that segment and the stakeholders of any other segment which might be impacted by that planning.

In addition to the administrators, faculty, staff, and students of the institution, many of Tech's academic departments rely on advisory boards in the planning process. Composed of business and industry leaders, other professionals in the discipline and graduates of the department, these advisory boards bring to the planning process a critical perspective from outside the institution. For example, the advisory board for the Business and Information Technology Department provided important advice and

support to proposed curriculum changes that were eventually implemented in 2008.

Budgets, major curriculum and program changes, organizational changes, and other substantive proposals that emerge from the planning process all require final approval by the Board of Regents. Prior to granting such approval, the Board of Regents specifically checks whether stakeholders within the institution have participated in the planning process. Its own notice requirements also allow other units of the Montana University System and the general public to weigh in on such proposals. For example, a program addition proposed by one institution is circulated to all other institutions in the Montana University System and allows them to comment on how and to what degree the proposal might impact their own programs.

1.B.4 The institution uses the results of its systematic evaluation activities and ongoing planning processes to influence resource allocation and to improve its instructional programs, institutional services, and activities.

Evaluation and planning are used to prioritize resources and to improve programs and services. Two recent examples of this use are as follows:

- » One of the “hallmarks” of Montana Tech’s undergraduate programs is the Tech Learning Center (TLC). Both the North and South campuses have a learning center. In 2009, the long-time director of the TLC retired. The campus evaluated options to possibly improve the services that are provided by the TLC. In addition, the campus has seen an increase in the number of incoming engineering students that are not calculus prepared, but do not need developmental math courses. The students that require developmental math courses are advised through Tech’s Baccalaureate Prep program and the students that are calculus prepared are advised by faculty advisors. The campus allocated funds to hire a new Learning Center director that would also direct our new Foundations of Engineering and Science (FESP) program. The non-calculus prepared students are now advised by this new director and they also enroll in FESP classes developed and taught by the new director.
- » One of the largest academic programs on campus, General Engineering, is in need of additional classroom and laboratory space. Montana Tech owns buildings in the Butte Industrial Park, eight miles to the south of the North Campus. The campus has decided to sell these buildings in the industrial park and the proceeds from the sale will be used to build a General Engineering laboratory building on the North Campus.

1.B.5 The institution integrates its evaluation and planning processes to identify institutional priorities for improvement.

Tech takes advantage of its evaluation and planning processes for improvement. For example, a 2007 student satisfaction survey became the basis of launching multiple improvement initiatives, from curriculum changes to alterations to physical facilities. However, some issues raised in the survey, such as adequacy of parking, still remain to be resolved. The campus has allotted resources to create temporary parking areas on campus to address the current lack of parking due to the increased enrollment.

CLOSING THE LOOP

As part of its commitment to providing a quality education, Montana Tech requires students to take the Measure of Academic Proficiency and Progress (MAPP) test after completing 75 credits of course work. The MAPP test (now called the ETS Proficiency Exam) is a measure of college-level reading, mathematics, writing, and critical thinking in the context of the functional areas of humanities, social sciences, and natural sciences. Montana Tech students perform extremely well on the MAPP exam when compared against students nationwide. The area that the students historically score the lowest is the writing section. In 2009, the campus committed the resources to hire a writing coordinator whose charge is to implement policies, procedures, and curriculum as a means to increase Montana Tech's students' proficiency in writing. The campus has longitudinal data to compare future MAPP exam scores against to discern if the writing score increases. Please see Standard Two for a more detailed discussion of the MAPP exam.

1.B.6 The institution provides the necessary resources for effective evaluation and planning processes.

For much of the past decade, Montana Tech did not have an Office of Institutional Research. Instead, institutional research endeavors were undertaken by the segment of the institution most invested in the outcome. For example, personnel research was carried out by the Director of Budgets and Human Services, research on students by the Office of the Registrar, and research on academic performance by the particular academic area. The resources for such endeavors are provided by the segment. Resources for institution-wide research, such as student surveys, are provided by the institution.

1.B.7 The institution's research is integrated with and supportive of institutional evaluation and planning.

With over 50 faculty and staff and 150 graduate and undergraduate students participating in research activities, it is clear that the institution's research is integrated with, supportive of, and supported by the institution's evaluation and planning processes. A recent assessment of the institution's research activities (along with its graduate study and international program activities) can be found in the *[Research, Graduate Studies, and International Programs Progress Report for Fiscal Year 2008](#)*.

1.B.8 The institution systematically reviews its institutional research efforts, its evaluation processes, and its planning activities to document their effectiveness.

As noted in 1.B.2, a review of Tech's institutional research efforts led Tech to formalize and make more systematic institutional research efforts.

1.B.9 The institution uses information from its planning and evaluation processes to communicate evidence of institutional effectiveness to its public.

The Office of Marketing and Public Relations makes effective use of indicators of institutional effectiveness. The following *press releases* exemplify this use:

- » "Montana Tech Featured in *The Princeton Review Guidebook* 'The Best 371 Colleges,'" July 27, 2009
- » "Montana Tech's Software Engineering and Computer Science Programs Receive Accreditation," September 22, 2008
- » "U. S. News and World Reports Ranks Montana Tech as the Third Top Public Baccalaureate College in the West," September 4, 2008
- » "Montana Tech Featured in *Princeton Review*," July 30, 2008



Program accreditations are a source of pride to the institution, and information regarding them is included in the institution's literature and on its website. A substantial majority of Montana Tech students are in accredited programs. All of Montana Tech's engineering programs are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology (ABET). The industrial hygiene degree is accredited by the RAC of ABET. The computer science and software engineering programs are accredited by the Computing Accreditation Committee of ABET. The chemistry programs are approved by the American Chemical Society. The business program is accredited by the International Assembly for Collegiate Business Education.

Also available on the institution's website are survey results and salary and placement data, such as the following:

- » *Graduate surveys (2000-2008)*
- » *Internship surveys (2001-2008)*
- » *Salary and placement data (2007)*
- » *Faculty Senate satisfaction survey (Spring 2007)*

Accreditation, survey results, and other indicators of institutional effectiveness are presented to the Board of Regents on a regular basis.

CLOSING THE LOOP

In 2009, Montana Tech's students approved an initiative in which the Health, Physical Education, and Recreation (HPER) building would be updated using student fees. As part of the programming process, the campus has held, and will continue to hold, campus-wide forums in which interested parties can contribute their input into the HPER renovation. Forums for students, faculty/staff, and the community allow for vested constituent groups to provide input to the campus concerning the remodel.



SUPPORTING DOCUMENTATION FOR STANDARD 1

REQUIRED DOCUMENTATION

1. Official statement of institutional mission: Indicate how and when it was developed, approved, and communicated to the institution's constituencies.
 - » Official mission and vision statements, and related statement of guiding principles (see Exhibit 1.R.I)
 - » How and when developed (see Exhibit 1.R.II)
 - » Approval by the Board of Regents (see Exhibit 1.R.III)
 - » Inclusion in the website
 - Inclusion in the 2009-2010 catalog (see Exhibit 1.R.IV)
2. Evidence that demonstrates the analysis and appraisal of institutional outcomes. Examples may include:
 - » Annual goals and assessment of success in their accomplishments
 - Strategic plan achievements (see Exhibit 1.R.V)
 - » Studies of alumni and former students
 - Graduate surveys (2000-2008) (see Exhibit 1.R.VI)
 - » Studies regarding effectiveness of programs and their graduates
 - Salary and placement data (2007) (see Exhibit 1.R.VII)
 - » Studies that indicate the degree of success in placing graduates
 - Salary and placement data (2007) (see Exhibit 1.R.VII)
 - » Pre- and post-test comparisons of student knowledge, skills, and abilities
 - Available from Departments
 - » Survey of satisfaction – students, alumni, and employees
 - Internship surveys (2001-2008) (see Exhibit 1.R.VIII)
 - Student satisfaction survey (2007) (see Exhibit 1.R.IX)
 - Faculty Senate satisfaction survey (Spring 2007) (see Exhibit 1.R.X)

REQUIRED EXHIBITS

1. Institutional short term, strategic, or long term plans, including system master plans
 - » The Restructuring of the Montana University System (Phase One) (see Exhibit 1.A.I)
 - » Second phase of restructuring (see Exhibit 1.A.II)
 - » Montana Tech strategic plan (see Exhibit 1.A.III)
 - » Montana University System strategic plan, including mission, vision, goals, and objectives (October 2001) (see Exhibit 1.A.IV)
 - » Montana University System strategic plan (adopted July 2006 and revised October 2008) (see Exhibit 1.A.V)
 - » Montana Tech Vision 2025 (see Exhibit 1.A.VI)
 - » Task force for reinventing and reforming the Montana University System (August 2009) (see Exhibit 1.R.XI)

STANDARD 2 - EDUCATIONAL PROGRAM AND ITS EFFECTIVENESS



STANDARD 2.A - GENERAL REQUIREMENTS

The institution offers collegiate level programs that culminate in identified student competencies and lead to degrees or certificates in recognized fields of study. The achievement and maintenance of high quality programs is the primary responsibility of an accredited institution; hence, the evaluation of educational programs and their continuous improvement is an ongoing responsibility. As conditions and needs change, the institution continually redefines for itself the elements and result in educational programs of high quality.

2.A.1 The institution demonstrates its commitment to high standards of teaching and learning by providing sufficient human, physical, and financial resources to support its educational programs and to facilitate student achievement of program objectives whenever and however they are offered.

All educational programs at Montana Tech are sufficiently supported with human, physical, and financial resources to achieve individual program objectives.

Faculty

For Fall Semester 2009, Montana Tech had a FTE student count of 2438 and a student- to-faculty ratio of approximately 15 to 1. Of the tenure-track full time instructional faculty in B.S. programs, 70% hold terminal degrees in their respective program discipline.

Faculty workload at Montana Tech is commensurate with quality teaching. For faculty who are part of Bachelors or Masters degree granting programs (often described as North campus faculty), workload is described in Standard 4.A.3 as follows:

“Workloads for faculty in the four year programs are based on a 15 credits of workload per semester model which guides assignment of effort. For faculty for whom advising and service to the college are expected, 3 credits of this workload are automatically awarded for effort in these areas. Faculty members that are active in research and scholarship are normally able to claim 3 credits of workload for their efforts with the approval of their department head. New and recent faculty hires for whom demonstrated research and scholarship are requirements for promotion and tenure are generally accorded 3 credits of workload to allow for effort in this area. For a faculty member who is advising students, serving on college committees, and pursuing research/scholarship; this typically leaves 9 credits of workload to be devoted to instruction per semester. One credit of lecture (1 hour per week) counts as one credit of instructional load and one credit of laboratory (3 hours per week) counts as two credits of instructional load.”

For faculty housed in programs granting only Associate degrees or Certificates (collectively referred to as South campus faculty), workload is defined in the

SELF-STUDY 2010

VTEM-CBA (see Exhibit G.VI) as:

“The instructional workload for full-time faculty shall normally fall within the range of 30 to 32 credits per academic year. The instructional assignment for a full-time faculty member shall normally not exceed 25 hours per week. Where instructional assignments consist of primarily laboratory, clinical, shop, internship or cooperative work experience supervision, the assignment for a full-time faculty member shall not exceed 30 hours per week. Faculty teaching more than thirty-two (32) credits or the hours or the hours defined above shall be eligible for overload compensation or a reduction in non-instructional assignments at the discretion of the campus administration. Bargaining unit faculty who teach at least 15 credits in a semester shall not receive a pro-rated salary during that semester.”

A thorough review of Montana Tech’s faculty is found under Standard 4.

Physical Resources

In general, the physical resources at Montana Tech adequately supply the students with classroom and lab space, computer resources, housing, and with recreation. The following abbreviated list highlights some of Montana Tech’s physical assets:

North Campus

- (a) Currently, the North Campus has ten buildings housing labs, classrooms, and faculty offices for a total of 390,737 square feet.
- (b) A new Natural Resources Building, which opened in January 2010, provides an additional 7,595 square feet of classroom space and an additional 5,904 square feet of lab space.
- (c) A 31,084 square foot Library with collections that include 55,000 books, more than 400 current journal titles, and more than 1900 non-current journal titles. The Library’s electronic collections include 32,000 online journals, 58,000 e-books, and 2700 newspapers and news sources online.
- (d) A recently remodeled gymnasium in the Health, Physical Education & Recreation (HPER) building.
- (e) The 16,812 square foot Mill Building which contains the Montana Tech Bookstore, a Starbucks Coffee Mill, and several lounge areas.
- (f) The Student Union Building (SUB) where the dining hall, campus mail room,



student health service, and offices of the Associated Students of Montana Tech (ASMT) are located.

(g) Two residence halls with space for 300 students.

South Campus

The primary structure on the South Campus is the College of Technology (COT) Building. During the summer of 2008, this 98,807 square foot building underwent a major renovation which improved all of the COT's classrooms' physical environments by updating the ventilation system and by adding new paint and carpeting.

Computing

Montana Tech has nine instructional computer labs and 17 student-use computer labs. A fully integrated local area network connects more than 1000 computers, supported by 55 physical servers and 52 virtual servers. Furthermore, all faculty and staff are provided a computer. More detailed descriptions of physical resources can be found within Standards 5 and 8.

Financial Resources

Montana Tech has become extremely proficient at allocating financial resources wisely. Because of this fiscal acumen, Montana Tech remains an institution that provides an excellent education at an affordable price. For fiscal year 2009, resident students will pay approximately 42% of the cost of their education, while non-resident students will pay the entire cost of their education. Montana Tech also enjoys the support of people within the state, as evidenced in 2008 by the passage of a 6-Mill Levy that will cover approximately 7% of state support for higher education. For a complete review of Montana Tech's financial resources, see Standard 7.

2.A.2 The goals of the institution's educational programs, whenever and however offered, including instructional policies, methods, and delivery systems, are compatible with the institution's mission. They are developed, approved, and periodically evaluated under established institutional policies and procedures through a clearly defined process.

The goals of all educational programs at Montana Tech are developed by the faculty within the program, and most often in conjunction with an external review board and accrediting bodies. Goals are then reviewed by the respective college Dean, by the Curriculum Review Committee (CRC), and by the Vice Chancellor for Academic Affairs and Research (VCAAR). This review process services as a further check that the program objectives fit with the mission of Montana Tech. The mission and objectives of every program are published in the Montana Tech catalog. Please see Exhibit G.I for the [*Montana Tech catalog*](#).

At yearly departmental meetings the validity of program goals are evaluated as well as methods for assessing these goals. Some programs assess goals according to guidelines published by professional organizations. As an example, the Chemistry Department follows program goals and curriculum guidelines established by the

SELF-STUDY 2010

American Chemical Society (ACS). For other programs, the goals are reviewed according to the requirements of an external accrediting agency. For instance, the Environmental Engineering Department sets department goals based, in part, on requirements established by the Accreditation Board for Engineering and Technology (ABET). Other departments rely on input from an Industry Advisory Board when determining and reviewing department goals. An illustration of this is the Business Technology Department which uses input from members of its business advisory board when department goals are reviewed. Please see the departmental self-studies, Exhibit 2.A.I, for a complete listing of program goals and assessment procedures used to measure the success in accomplishing these goals.

2.A.3 Degree and certificate programs demonstrate a coherent design; are characterized by appropriate breadth, depth, sequencing of courses, synthesis of learning, and the assessment of learning outcomes; and require the use of library and other information sources.

One method of determining whether a program has a coherent design, with courses at an appropriate breadth and depth and with reasonable course sequencing, is to compare a Montana Tech program with similar programs at peer institutions. An example of this type of comparison is the common course numbering system developed for all campuses of the Montana University System (MUS). As described on the MUS Transfer Guide web site (http://msudw.msu.montana.edu:9030/wfez/lowa/musxfer.p_CCN_MAIN),

“All undergraduate courses in the Montana University System (MUS) must go through a common course numbering process. This means that all courses deemed to be equivalent must possess the same course prefix, number, and title; such courses will directly transfer on a one-to-one basis with equivalent courses at the receiving institution.”

This policy has afforded Montana Tech faculty an excellent opportunity to compare Tech’s courses with similar courses offered at universities and colleges throughout the state. Please see [Policy 301.5.5](#) of the Board of Regents Policy and Procedures Manual, Exhibit G.II, for more detailed information. Also, please see [Exhibit 2.A.II](#), which is the current course numbering matrix specific to Montana Tech. This matrix gives the former subject abbreviation and course number for a Montana Tech course along with the current abbreviation and number, which is aligned with all campuses of the Montana University System.

As described in section 2.A.2, many Montana Tech programs are certified or reviewed according to external organizations or review boards. This approach ensures that Tech’s programs are at appropriate levels, and with measureable learning outcomes. Some examples of these organizations are the following:

- » The Chemistry Department’s program is certified by the ACS;
- » The Electrical Engineering Department’s program is reviewed by an Electrical Engineering Industrial Advisory Board.
- » The Radiologic Technology Program follows the guidelines of the American

- Registry of Radiologic Technologists (ARRT);
- » The Department of Mathematics option in statistics is consistent with the guidelines established by the American Statistical Society (ASA), while the math option follows the guidelines established by the Mathematical Association of America (MAA); and
 - » All the programs in the School of Mines & Engineering follow program guidelines established by ABET.

In order to evaluate, initially, whether courses within programs are at an appropriate breadth and depth, the process of adding a new course requires that the course curriculum be reviewed by all Montana Tech faculty. As described in Standard 4.A.2:

“The idea for a new course generally originates with a faculty member who will often have first taught the course as a special topics course, which has proven successful and generated a positive student response. This faculty member will then bring a request to the appropriate department to add this course to the curriculum. If the faculty members in the department agree with the request, a formal submission for a new course will be prepared. This formal submission will include a suggested course number, title, catalog description, and prerequisites; will have an attached syllabus; and will note known effects on other programs.”



Typically, once a course has been established, the course content is reviewed annually at department meetings. Furthermore, some programs have capstone projects or senior design projects that require literature reviews and extensive use of the library. Please see Exhibit 2.A.III for some examples of these projects.

2.A.4 The institution uses degree designators consistent with program content. In each field of study or technical program, degree objectives are clearly defined: the content to be covered, the intellectual skills, the creative capabilities, and the methods of inquiry to be acquired; and, if applicable, the specific career-preparation competencies to be mastered.

Degree programs at Montana Tech use designators which are consistent within the field, and, as described in 2.A.3, which are consistent throughout the Montana University System. For example, courses falling within the Chemistry Department program are designated with CHMY, and Metallurgical & Materials Engineering classes are designated with M&ME. See the [Montana Tech Catalog](#), Exhibit G.I, and the course numbering matrix, [Exhibit 2.A.II](#), for many more examples.

All programs at Montana Tech publish their respective departmental mission and program objectives in the Tech Catalog. Any required, career specific competencies are

SELF-STUDY 2010

also published here. In addition, the catalog contains course descriptions of each course taught by the department, including content to be covered and any discipline-specific methods to be employed. For example, MIN 2100-Plane Surveying is a course offered through the Mining Engineering department and is described in the catalog as follows:

“Covers the basics of plane surveying, Linear measurement; errors; leveling; the use of transit, theodolite and total stations to make traverses; traverse adjustments; earthworks; and map construction. An introduction to GPS surveying. Prerequisite: M 151, or 171.”

2.A.5 The institution provides evidence that students enrolled in programs offered in concentrated or abbreviated timeframes demonstrate mastery of program goals and course objectives.

No programs at Montana Tech are offered in concentrated timeframes.

2.A.6 The institution is able to equate its learning experiences with semester or quarter credit hours using practices common to institutions of higher education, to justify the lengths of its programs in comparison to similar programs found in regionally accredited institutions of higher education, and to justify any program-specific tuition in terms of program costs, program length, and program objectives.

As published in the *Montana Tech catalog*, a credit represents 50 minutes per week of lecture instruction each week of the semester. The length of programs at Montana Tech, in terms of minimum number of credits, is given in Table 2.A.I:

TABLE 2.A.I: MINIMUM CREDITS PER DEGREE

DEGREE	MINIMUM CREDITS
Associate of Science	65-75
Associate of Applied Science	65-75
Bachelor of Science	120-136
Master of Science	30-36

This requirement is similar to peer institutions in the region. Students may choose the requirements for a degree in the catalog they enter under or any subsequent catalog published while they are enrolled. However, students must complete the degree requirements within 6 years of the date of the chosen catalog.

Program fees for students with declared majors in high cost programs are published in the Montana Tech Catalog and at the website: http://www.mtech.edu/business/Tuition_and_Fee.htm. Currently, there are the following program-specific fees:

- » Nursing RN
- » Metals Fabrication Technology
- » Automotive Technology

- » Health Care Informatics
- » Professional Technical Communication
- » School of Mines and Engineering
- » Pre Apprenticeship Lineman Program
- » Network Technology AAS

These additional fees are similar to charges at peer institutions and are approved by the ASMT Senate and Montana Board of Regents every two years.

2.A.7 Responsibility for design, approval, and implementation of the curriculum is vested in designated institutional bodies with clearly established channels of communication and control. The faculty has a major role and responsibility in the design, integrity, and implementation of the curriculum.

Procedure for design, approval and implementation of curriculum at Montana Tech is clearly established, and the faculty are involved from the beginning. For example, changes in curriculum are typically initiated by a faculty member who requests a new course or changes to an existing course. This issue is discussed within the faculty members department and then sent to the Curriculum Review Committee (a committee comprised entirely of Montana Tech faculty), along with any supporting documentation. If the request is approved by the Curriculum Review Committee, it is then presented to the entire instructional faculty for approval. The new course must then be approved by both the Vice Chancellor of Academic Affairs and Research (VCAAR) and the Chancellor of Montana Tech. For major revisions within a program or for the addition of an entirely new program, approval must also come both from the President of the University of Montana and from the Montana Board of Regents.

2.A.8 Faculty, in partnership with library and information resources personnel, ensure that the use of library and information resources is integrated into the learning process.

To ensure that the library and information resources are integrated into the learning process, library faculty (librarians) may collaborate with instructors teaching required writing courses and discipline-specific W courses (those with a designated writing component). Together, librarians and faculty develop library instruction sessions that include the kind of assignments and outcomes best designed to educate students in accessing, finding, evaluating, and in using library resources. For examples of papers from designated writing courses, see Exhibit 2.A.IV. Library faculty daily assist students with course work assignments and also provide in-depth research help to senior design students, those working on Undergraduate Research Projects, and to Graduate students.

Librarians also develop instructions sessions tailored to specific classes. For example, Library and Chemistry faculty team teach a required chemistry literature class for chemistry majors. This class meets in the library and is designed to guide students in finding scientific and technical information. For more information on how the library is integrated into student learning, see Standard 5-Library.

SELF-STUDY 2010

2.A.9 The institution's curriculum (programs and courses) is planned both for optimal learning and accessible scheduling.

Course scheduling at Montana Tech is the responsibility of Department Heads in conjunction with the Enrollment Management Office. Every effort is made to avoid course time conflicts.

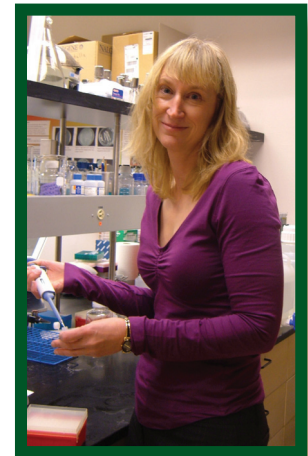
Optimal learning is pursued through updated and relevant textbooks, faculty teaching in their area of expertise, appropriate use of technology, and through core courses normally offered every year and at least every other year. Optimal learning is assessed primarily at the department level through course evaluations, student and employer surveys, pass rates on nationally normed exams, and through faculty input at department meetings. See the individual program reviews, Exhibit 2.A.I, for more information and examples of optimal learning practices.

2.A.10 Credit for prior experiential learning is awarded only in accordance with Policy 2.3 Credit for Prior Experiential Learning.

Currently, no credit for prior experiential learning is given at Montana Tech.

2.A.11 Policies, regulations, and procedures for additions and deletions of courses or programs are systematically and periodically reviewed.

At Montana Tech, the procedure regarding deletions or additions of courses or programs typically starts at the department level, then proceeds to the faculty within the appropriate college, next goes to the Curriculum Review Committee (CRC), and from there proceeds to the general instructional faculty. Major department additions or deletions must also be approved by the VCAAR, by the Chancellor, and by the Board of Regents. This systematic procedure is reviewed on a yearly basis by the academic Deans and the VCAAR.



2.A.12 In the event of program elimination or significant change in requirements institutional policy requires appropriate arrangements to be made for enrolled students to complete their program in a timely manner and with a minimum of disruption.

As found in the Board of Regents Policy and Procedures Manual (Exhibit G.II), section 303.4, Montana Tech may impose a program moratorium prior to eliminating a program. This approach gives students the opportunity to complete the program in a timely manner. In addition, a student may choose the degree requirements of any catalog published while they are enrolled at Montana Tech. Thus, if a significant change is made in a degree requirement during a student's tenure at Montana Tech, the student may choose to follow the corresponding requirements of an earlier catalog.

STANDARD 2.B – EDUCATIONAL PROGRAM PLANNING AND ASSESSMENT

Educational program planning is based on regular and continuous assessment of programs in light of the needs of the disciplines, the fields or occupations for which programs prepare students, and other constituencies of the institution.

2.B.1 The institution's processes for assessing its educational programs are clearly defined, encompass all of its offerings, are conducted on a regular basis, and are integrated into the overall planning and evaluation plan. These processes are consistent with the institution's assessment plan as required by Policy 2.2 Educational Assessment. While key constituents are involved in the process, the faculty have a central role in planning and evaluating the educational programs.

The process of assessing educational programs at Montana Tech is accomplished in many different ways. Program assessment tools include the following:

- » Student evaluation of courses. See Exhibit 2.B.1 for a summary of some student evaluations.
- » Small group instructional diagnosis of courses (SGID). See Exhibit 2.B.II for examples.
- » Evaluation of courses by using statistical methods. See Exhibit 2.B.III.
- » The Noel-Levitiz Student Satisfaction Inventory (SSI). See Exhibit G.III
- » The Educational Testing Service Measure of Academic Proficiency and Progress (MAPP) exam. See Exhibit 2.B.IV.
- » Measuring student performance in capstone courses. See Exhibit 2.A.III for examples.
- » Assessing student performance on program specific licensure exams.
- » Assessing student performance on nationally normed knowledge exams.
- » Calculating program-specific graduation rates. See Exhibit 2.B.VI for a listing of program graduation rates.
- » Alumni surveys. See Exhibit 2.B.VII for examples.
- » Placement Rate. See Exhibit 2.B.V for examples.
- » Employer surveys. See Exhibit 2.B.VIII for examples
- » Advisory Boards.
- » Using specialized program accreditation external guidelines as established by, for example, the Accreditation Board for Engineering and Technology (ABET).

See Table 2.B.I for a list of assessment procedures used within academic programs.

SELF-STUDY 2010

TABLE 2.B.I: DEPARTMENT ASSESSMENT DOCUMENTATION

ACADEMIC DEPARTMENT	Stud't Evals of Courses	Capstone Course/ Project	SSI Survey	Alumni Survey	Placem't Rates or Employer Survey	Exit or Lic. Exam	Adv. Board	Spec. Accred	Internship
COT									
Business Technology	X		X	X	X		X	X	
Trades & Technology	X		X	X	X		X	X	
Health Program	X		X		X	X	X		
Accounting Technology	X		X	X	X		X		
CLSPS									
Biology	X	X	X	X	X		X		
Business & Info Technology	X	X	X	X	X	X	X	X	
Chemistry & Geochemistry	X	X	X	X	X	X		X	
Computer Science	X		X	X	X	X	X	X	X
General Science	X		X	X	X				
Healthcare Informatics	X	X	X	X	X		X		X
Liberal Studies	X		X	X	X		X		
Mathematical Sciences	X		X	X	X				
Network Technology	X		X	X	X	X	X		X
Nursing	X		X	X	X	X	X	X	
Professional & Tech Comm	X	X	X		X				
Software Engineering	X	X	X	X	X	X	X	X	
SME									
Electrical Engineering	X		X	X	X	X	X	X	
Environmental Engineering	X		X	X	X	X	X	X	
General Engineering	X				X			X	
Geological Engineering	X		X	X	X	X		X	
Geophysical Engineering	X	X	X	X	X	X	X	X	
Metallurgical & Mat'ls Eng	X	X	X	X	X	X	X	X	X
Mining Engineering	X		X	X	X	X		X	
Petroleum Engineering	X	X	X	X	X		X	X	X
Safety, Health & Ind'l Eng	X	X	X	X	X	X	X	X	
Project Engineering & Mgt	X				X				

Specialized accrediting agencies play a significant role in academic programs at Montana Tech. These agencies include ABET, International Assembly for Collegiate Business Education (IACBE), and the American Chemical Society (ACS), National Institute for Automotive Service Excellence (NIASE), and the Montana State Board of Nursing. When assessing programs, faculty use guidelines from these accrediting

agencies to develop techniques for alumni and employer surveys, measurement of student learning, and determining the appropriateness of course material.

Additionally, the Montana University System Board of Regents requires every program within a public university to undergo an internal program review or self-study at least once every seven years. The Board of Regents schedule for program reviews at Montana Tech is found at <http://mus.edu/asa/ProgramReviewSchedule.pdf>.

A program self-study includes, in general, the program's mission, objectives, outcomes, and techniques to assess these outcomes. Additionally, a listing of program strengths and weaknesses, as well as what is being done to maintain strengths and correct weakness is also an expected part of these program self-studies. (Note that the respective faculty within a program are responsible both for defining the program mission and for establishing ways to assess the objectives.) See Exhibit 2.A.I for all program self-studies.

Some assessment procedures are common to all programs. For example, every program is required to run student evaluations in all courses offered, every semester, and to use a common evaluation form campus-wide. Additional, department specific questions may also be added to the general evaluation form. As will be confirmed by a careful examination of the drafts of department standards for promotion and tenure (found in the respective appendix of the program self-studies), student course evaluations play a critical role in assessing teaching effectiveness of faculty, as well as measuring student opinion of course content.

To determine the placement status of Montana Tech graduates, Career Services surveys every graduate of every program (see Exhibit 2.B.VIII). As demonstrated in, for example, the Department of Mathematical Sciences self-study, the results of this survey can be used as a tool for course content assessment. Over the past five years, the survey indicates that a "significant number" of math graduates have gone to graduate school after completing their undergraduate education at Montana Tech. This trend, in turn, has led to an increase in the depth of coverage for material in upper division mathematics courses. Thus, based in part on the survey conducted by Career Services, the Department of Mathematical Sciences decided that senior level math courses should all maintain a significant focus on the theoretical framework underlying the content of the course.

Programs in General Engineering and in Geophysical Engineering are examples of departments that require all seniors to complete a senior design project. See Exhibit 2.A.III for examples. These projects provide an overall assessment of how well each program is doing. That is, in general, the senior design project gives a clear and measureable indication to department faculty of how well the student is prepared for a career or for graduate school.

CLOSING THE LOOP

A Chemistry Course Pass Rate

Chemistry Department faculty noted the "D," "F," and withdraw rate for students in the Chemistry course CHMY 141, College Chemistry I, was occurring at an unacceptably high level. A detailed statistical analysis (see Exhibit 2.B.III) determined what factors significantly influenced success in this course. This analysis determined that the math co-requisite for the course needed to be changed from College Algebra to the more advanced Precalculus course. Analysis showed a significant correlation between success in the Chemistry course and the level of a student's mathematical sophistication. Preliminary results indicate the pass rate from the Chemistry course has improved since the change in the Math co-requisite. See Figure 2.B.1

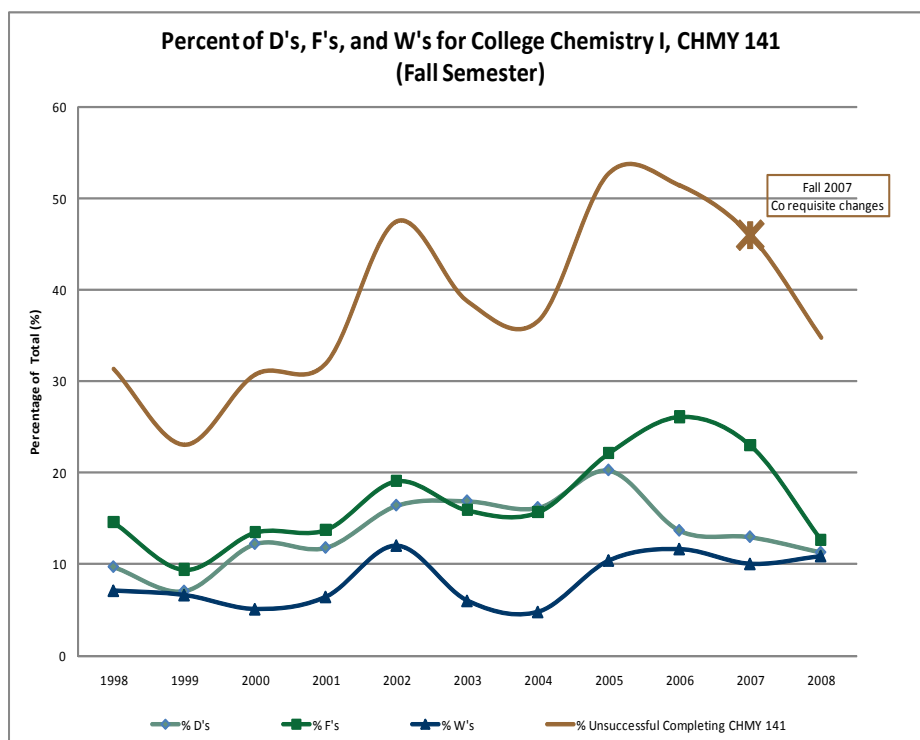


FIGURE 2.B.1: PERCENTAGE OF D'S AND F'S PER FALL SEMESTER FOR CHMY 141

CLOSING THE LOOP

FE Exam Pass Rate

Pass rates for the nationally normed Fundamental of Engineering (FE) exam, a required exam for many students in the School of Mines and Engineering, are calculated every year. In recent years, engineering faculty expressed concern over the pass rate for Montana Tech students, which fell below the national average pass rate of approximately 70%. During the fall semester of 2005, a committee evaluated methods for increasing the pass rate. The two primary recommendations of the committee were:

- » Programs that require students to sit for the exam also require that the students pass the exam.
- » Increase the rigor of the review course for the exam.

See Exhibit 2.B.IX for a copy of the report. Although students are currently not required to pass the exam in order to graduate, the review course for the exam has been redesigned. Subsequent to the review course update, the overall pass rate increased over a two year period, but has declined again recently. Faculty believe the primary reason for this decline is the simple fact that the exam only applies to professional licensure for engineers. For the majority of Tech's programs, this licensure does not represent an integral career milestone. See Table 2.B.II for an indication of the variability of scores within subject areas.

SELF-STUDY 2010

TABLE 2.B.II: FUNDAMENTALS OF ENGINEERING EXAM MEAN SCORES

TOPIC	FALL 05 MEAN SCORE	SPRING 06 MEAN SCORE	FALL 06 MEAN SCORE	SPRING 07 MEAN SCORE	FALL 07 MEAN SCORE	SPRING 08 MEAN SCORE	FALL 08 MEAN SCORE	SPRING 09 MEAN SCORE
Mathematics	42	53	53	57	57	49	60	57
Engineering Probability & Statistics	55	53	53	60	60	51	65	47
Chemistry	60	60	60	65	65	62	60	65
Computers	58	55	55	75	75	65	59	63
Ethics & Business Practices	78	70	70	76	76	68	83	78
Engineering Economics	73	73	73	62	62	64	61	81
Engineering Mechanics	48	55	55	61	61	56	54	54
Strength of Materials	51	60	60	52	52	48	42	41
Materials Properties	53	47	47	62	62	47	41	61
Fluid Mechanics	49	58	58	61	61	61	62	55
Electricity and Magnetism	52	51	51	56	56	39	46	60
Thermo- dynamics	53	46	46	53	53	52	61	52

Montana Tech practices student assessment throughout a student's career at the university. This process includes initial screening of student ability in mathematics and writing proficiency. Prior to enrolling in a program of study at Montana Tech, all first-time students are assessed on their writing ability and their mathematical competence through scores they obtain on the ACT, SAT or Compass tests. Student placement in the appropriate math or writing course is based on test scores and is strictly enforced. See Table 2.B.III and Table 2.B.IV below for math placement rules based on ACT/SAT scores followed at Montana Tech. Also, the rules for math and writing course placement can be found at Exhibit 2.B.X.

TABLE 2.B.III: MATH PLACEMENT FOR ENGINEERING/SCIENCE MAJORS

COURSE	ACT MATH	SAT MATH
M 090, Introductory Algebra	18-19	440-470
M 095, Intermediate Algebra	20-21	480-510
M 121, College Algebra	22-23	520-550
M 151, Precalculus	24-26	560-600
M 171, Calculus I	27+	610+

ACT < 18 or SAT < 440 must take Compass test to be placed

TABLE 2.B.IV: MATH PLACEMENT FOR BUSINESS/LIBERAL STUDIES/OTHER MAJORS

COURSE	ACT MATH	SAT MATH
M 090, Introductory Algebra	18-19	440-470
M 095, Intermediate Algebra	20-21	480-510
M 121, College Algebra	22-23	520-550
M 141, Mathematics for Business & Social Science I	24+	560+

ACT < 18 or SAT < 440 must take Compass test to be placed

Any challenge to these ACT/SAT placement scores must be based on Compass test scores.

Compass Information

The Compass test is a placement test that is used to place students in the appropriate Math and English classes. The following students are required to take the Compass test:

- (a) Non-traditional freshmen
- (b) Transfer students – the test may be waived if college level math has been taken within the last two years, and a grade of C or better has been achieved in both math and English.
- (c) College of Technology freshmen – ACT or SAT scores may be used in lieu of the Compass test if the student received a minimum score of 18 in math and English on the ACT, or a minimum score of 440 in math and English on the SAT.

The math placement rules are the result of a detailed study of “D,” “F,” and withdraw rates (D/F/W) over a three year period in the beginning calculus course at Montana Tech (see Exhibit 2.B.III). Also reviewed were policies at peer institutions. Since implementing these revised placement guidelines, the D/F/W/ rate for the beginning calculus course has gone from an approximate average of 35% to an average of 33%. This compares favorably to the national fail rate of 41.7% for a beginning calculus course. The Department of Mathematical Sciences faculty, Tech administrators,

SELF-STUDY 2010

and staff of Enrollment Services are continually exploring ways to further reduce the D/F/W rate for this course while still maintaining appropriate rigor.

Montana Tech continues assessment procedures throughout a student's career. There are, of course, numerous assessment activities related to course efficacy that include course examinations, student portfolios, and design projects. Of particular importance is assessing the knowledge and skills students are in the process of acquiring. This is done not only within courses, through examinations and discipline-specific design projects, but also by means of Undergraduate Research Projects (URP) and the MAPP exam. As described on the Montana Tech URP website, (http://www.mtech.edu/research/undergrad/undergraduate_research.html)

"The Undergraduate Research Program (URP) was established to give motivated undergraduates a chance to participate in research and scholarly activity at Montana Tech to further their career and educational goals.

For purposes of the URP awards, research and scholarly activity is broadly defined and may include:

- » Investigations of a cultural or historical question;
- » Documentary or production arts; and
- » Laboratory or field research more typically associated with the science or engineering disciplines."

See Standard 4.B.6 for a complete description of the URP.

Every student who has completed 75 credits of course work is required to take the Educational Testing Service Measure of Academic Proficiency and Progress (MAPP) exam before graduation. This exam is the primary assessment tool for measuring the outcomes of Tech's General Education program. MAPP exam results, which can be viewed at Exhibit 2.B.IV, provide strong evidence that the expected outcomes of the General Education program, which are described in the catalog, are being satisfied. The MAPP exam is discussed in greater detail in section 2.C.2.

The Student Satisfaction Inventory (SSI) survey (Exhibit G.III) is administered every odd-numbered year at Montana Tech. This survey plays an important role in assessing various programs offered at Montana Tech. For instance, the SSI is one tool used to determine student satisfaction with advising, instruction, financial aid, and with physical facilities.

Assessment of students during the senior year at Tech may include a student presentation of a senior thesis, final exams for capstone courses, or evaluation of student portfolios. Montana Tech also administers graduation exit interviews just prior to graduation. See Exhibits 2.A.III, 2.B.V, and 2.B.XI for examples.

After graduation, Montana Tech continues to assess the quality of educational programs through alumni (Exhibit 2.B.VII) and employer (Exhibit 2.B.VIII) surveys. Montana Tech faculty use these surveys to gauge whether graduates are successful in their post-graduate careers.

Montana Tech faculty are at the center of program assessment. As described in

departmental self-studies, assessment is a continual process where measurement of educational outcomes takes place both at the classroom and program level. Commonly employed assessment tools are course exams, student evaluation of courses, nationally normed exams, and surveys. Departmental faculty play a significant role in determining both what outcomes to measure and what measurement tool to use. For many departments, measurement results and applications of these results are discussed every year at department meetings.

2B2. The institution identifies and publishes the expected learning outcomes for each of its degree and certificate programs. Through regular and systematic assessment, it demonstrates that students who complete their programs, no matter where or how they are offered, have achieved these outcomes.

All degree programs at Montana Tech publish their expected learning outcomes in the *Montana Tech catalog*. The following set of examples will indicate the high degree of validity that outcomes have within respective programs. Note, the following list of outcomes is not complete for each program, but the entire set of outcomes within a program can be found in the Montana Tech catalog (Exhibit G.I). The methods employed for assessment of outcomes are also listed in the catalog. These assessments demonstrate whether, and to what degree, students are meeting program objectives.

Certificate of Applied Science Degree Programs

» **Computer Assistant: Program housed in the College of Technology (COT).**

Graduates will be able to:

- (a) Demonstrate problem-solving, critical-thinking, oral, and written communication skills.
- (b) Demonstrate a competent use of a variety of software applications in the area of business technology.

*** Assessment**

- (a) Montana Tech Placement Survey.
- (b) Montana Tech Graduate Survey.
- (c) Surveys of Local Businesses.

» **Automotive Technology: Program housed in the COT.**

Graduates will be able to:

- (a) Demonstrate mechanical and problem solving skills in team and individual exercises.
- (b) Demonstrate a sense of pride in the student's work and the desire to progress and excel in the automotive field.

*** Assessment**

- (a) Priority Performance worksheets.

SELF-STUDY 2010

- (b) Student Satisfaction Survey.
- (c) Advisory Board.

Associate of Applied Science Degree Programs

- » **Accounting Technology Program:** Program housed in the College of Technology (COT).

Graduates will be able to:

- (a) Practice accounting and human resource skills in diverse business environments in a conscientious, precise, and deliberate manner.
- (b) Utilize informational literacy in problem solving.

*** Assessment**

- (a) Placement Survey.
- (b) Graduate Survey.
- (c) Employer feedback through advisory boards.
- (d) Course assessment through student evaluations.

- » **Network Technology Program:** Program housed in the COT

Graduates will be able to:

- (a) Demonstrate competencies in computer maintenance and support.
- (b) Demonstrate competencies in appropriate network operating systems.

*** Assessment**

- (a) Placement Survey.
- (b) Graduate Survey.
- (c) Industry Advisory boards.
- (d) Student evaluations.
- (e) Student peer evaluations.

Bachelor of Science Degree Programs

- » **Nursing:** Program housed in the College of Letters, Sciences, & Professional Studies (CLSPS).

Graduates will be able to:

- (a) Demonstrate substantial specialized knowledge of life sciences, behavioral sciences, and of nursing practice and theory.

(b) Utilize the nursing process to provide care for vulnerable populations.

*** Assessment**

(a) Student Evaluations.

(b) Pass rate on the National Council Licensure Examination for Registered Nurses.

» **Professional and Technical Communication: Program housed in CLSPS.**

Graduates will be able to:

(a) Collaborate effectively with subject-matter experts and co-workers.

(b) Assess and learn new technology and reach new audiences with new technology.

*** Assessment**

(a) Industry Advisory Board.

(b) Internship Student/Supervisor Evaluations.

(c) Instructional Diagnostic Tools.

(d) Student Evaluations.

(e) Student Peer Evaluations.

(f) Capstone Project/Thesis.

(g) Program Exit Surveys/Interviews.

(h) Graduate Placement Survey.

» **Geophysical Engineering: Program housed in School of Mines & Engineering (SME).**

Graduates will be able to:

(a) Identify, formulate, and solve engineering problems.

(b) Function on multi-disciplinary teams.

*** Assessment**

(a) Industry Advisory Board.

(b) Student evaluations.

(c) Alumni survey.

(d) Industry recruiters.

» **General Engineering: Program housed in SME.**

Graduates will be able to:

(a) Apply knowledge of mathematics, science, and engineering.

(b) Design and conduct experiments, as well as to analyze and interpret data.

*** Assessment**

SELF-STUDY 2010

- (a) Industry feedback.
- (b) Student evaluations.
- (c) Alumni survey.
- (d) Standardized exams.

All programs offered at Montana Tech are assessed, whether courses are offered on campus or off and whether delivered live or by some online method.

2.B.3 The institution provides evidence that its assessment activities lead to the improvement of teaching and learning.

At Montana Tech, program assessment is a continual process that is undertaken to improve, in general, the quality of all degrees offered. Program reviews (Exhibit 2.A.I) examine in detail how program assessment is accomplished. Some examples are given in the following:

- » Computer Science: As part of the program review process, it was determined through departmental faculty meetings that the software engineering program of study had a deficiency. As stated in the Computer Science program review:



"In the software engineering degree program there was some concern that students were not being exposed to software maintenance. This has been corrected by adding that component to the curriculum within the Senior Design project."

- » Department of Health Care Informatics (HCI): One of the objectives of the HCI department is to keep students updated on the many recent advances in the field. The proposed method of realizing this objective was to create a senior seminar class. As stated in the HCI program review under plans to strengthen the option:

"In December 2008 the Curriculum Review Committee approved the addition of an HCI senior seminar course which should afford Department faculty an opportunity to expose students to advanced concepts within the discipline."

- » Department of Mathematical Sciences: As noted in the Mathematical Sciences program review, maintaining quality teaching and continually seeking to improve teaching skills is considered an essential component for the success of departmental faculty. Assessment is incorporated in the following way:

"To help ensure the department's faculty are teaching at a high level, all assistant/associate professors earn points towards promotion and tenure with evidence

of significant effort in the development of quality teaching. Acceptable evidence includes peer reviews of teaching, small group instructional diagnosis (SGID) reviews, writing a detailed class portfolio, or attending teaching workshops. All of these activities earn points for the faculty towards promotion or tenure, as described in the draft of the Department of Mathematical Sciences Promotion and Tenure Standards, which appears in the appendix of the program review."

- » Department of Geological Engineering: To achieve a well-rounded and fundamentally sound education when learning the discipline of Geological Engineering, it is necessary to be adept with a variety of computer software packages. When assessing the computer capabilities in the program review for Geological Engineering, the following is reported:

"In concert with the Mining Engineering Department, the Geological Engineering Department has one of the most comprehensive suites of engineering analysis and design software in the United States available for student use. This suite includes three mine-design software packages (SURPAC, VULCAN, and MINSCAPE), 2-D and 3-D rock mechanics analysis and design programs (including DDA and Itasca PFC), Schlumbergers suite of geological, geophysical, and reservoir engineering software (PETREL and ECLIPSE), and GMS software for groundwater flow and contaminant transport modeling."

For many other examples of significant assessment activities, see Standard 2.B.1 as well as individual program reviews, found at Exhibit 2.A.1.

STANDARD 2.C – UNDERGRADUATE PROGRAM

The undergraduate program is designed to provide students with a substantial, coherent, and articulated exposure to the broad domains of knowledge.

The Commission encourages a tripartite structure for baccalaureate and academic or transfer associate degree programs: (1) general education requires students to master competencies for independent learning and to develop an awareness of the fundamental areas of knowledge; (2) the major requires students to achieve a knowledge base in a specific area of concentration; and (3) electives provide the opportunity for students to pursue other intellectual interests.

The Instructional program, as a whole, is based on a clear rationale with the component parts designed to reflect that rationale. Degree and certificate programs are characterized by clarity and order which are discernible in model curricula shown in official publications and are recorded in official student records of actual programs pursued.

Baccalaureate and academic or transfer associate degree programs include a substantial core of general education instruction with identifiable outcomes and require competence in (a) written and oral communication, (b) quantitative

SELF-STUDY 2010

reasoning, (c) critical analysis and logical thinking, and (d) literacy in the discourse or technology appropriate to the program of study.

Associate degree programs are designed to prepare students for careers in vocational and technical fields, and for transfer to a senior institution. Accordingly, the educational requirements for these degrees must be carefully determined in order to fulfill their respective purposes.

Programs of study for which applied or specialized associate degrees are granted, or programs of an academic year or more in length for which certificates are granted, contain a recognizable body of instruction in three program-related areas: (1) communication, (2) computation, and (3) human relations described in Policy 2.1 General Education/Related Instruction Requirements.

2.C.1 The institution requires of all its degree and pre-baccalaureate programs a component of general education and/or related instruction that is published in its general catalog in clear and complete terms.

The general education component required of all students working toward an Associate of Science or Baccalaureate Degree is published in the *Montana Tech Catalog* (Exhibit G.I). General education requirements for degree programs at Montana Tech are coherent, transparent, and clearly laid out in the catalog. A total of 30-31 credits in the general education core is the overall requirement needed to satisfy the general education component of all A.S. and B.S. degree granting programs at Montana Tech. In addition to this, all baccalaureate degree-seeking students must complete a designated writing course at the 300-400 course level. The general education core, as described in the catalog, consists of the following academic areas and respective credits:

- » Communications (6 credits)
- » Humanities (6 credits)
- » Mathematical Sciences (6 credits)
- » Physical & Life Sciences (6-7 credits, a lab course required)
- » Social Sciences (6 credits).

This core may be satisfied by choosing from a list of courses within each academic area, where the list of courses satisfying general education credits is published in the catalog.

For programs of study for which Certificates or Associate of Applied Science degrees



are granted, the general education requirements include a course in

- » communication,
- » computation, and
- » human relations.

See the catalog for additional details.

2.C.2 The general education component of the institution's degree programs is based on a rationale that is clearly articulated and is published in clear and complete terms in the catalog. It provides the criteria by which the relevance of each course to the general education component is evaluated.

The expected outcomes of the general education curriculum are the following (as published in the catalog):

- » Ability to express oneself both in written form and orally.
- » Proficient critical thinking skills.
- » Global and multi-cultural awareness.
- » Appreciation for diversity.
- » Understanding of scientific methods.
- » Ability to function adequately at an algebraic level.
- » An appreciation for life-long learning.

As discussed in Standard 2.B.1, these outcomes are assessed by requiring all students seeking a baccalaureate degree to complete The Educational Testing Service Measure of Academic Proficiency and Progress (MAPP) exam. For the 2008-2009 school year, Table 2.C.I reports percentile rankings for the average Montana Tech scores compared to other Masters granting institutions. For a complete listing of MAPP results, see Exhibit 2.B.IV.

SELF-STUDY 2010

TABLE 2.C.1: PERCENTILE RANKINGS ON MAPP EXAM SPRING 2009

	N	TOTAL	CRITICAL THINKING	READING	WRITING	MATH	HUMANITIES	SOCIAL SCI	NATURAL SCI
SCORES									
All Tech Average	252	94%	98%	94%	86%	99%	95%	97%	99%
Biological Sciences	6	94%	99%	97%	65%	98%	99%	99%	97%
Business & Information Technology	46	83%	97%	77%	65%	78%	91%	92%	95%
Chemistry	5	99%	99%	99%	99%	99%	99%	99%	99%
Computer Science & Software Engineering	4	99%	99%	99%	99%	99%	99%	99%	99%
Electrical Engineering	7	99%	98%	94%	86%	99%	74%	97%	99%
Environmental Engineering	12	99%	99%	99%	98%	99%	99%	99%	99%
General Engineering	40	99%	99%	97%	97%	99%	97%	99%	99%
Geological Engineering	10	99%	99%	99%	86%	99%	99%	99%	99%
Geophysical Engineering	5	99%	99%	97%	86%	99%	99%	99%	99%
Health Care Informatics	6	94%	99%	97%	97%	89%	97%	97%	99%
Liberal Studies	7	92%	99%	94%	65%	63%	99%	99%	97%
Mathematical Sciences	2	99%	99%	99%	99%	99%	99%	99%	99%
Metallurgical Engineering	4	96%	98%	92%	86%	99%	74%	99%	99%
Mining Engineering	10	98%	99%	97%	97%	99%	91%	99%	99%
Networking Technology	7	97%	99%	94%	65%	99%	74%	99%	99%
Nursing	13	94%	99%	92%	98%	78%	97%	92%	99%
Occupational Safety & Health	10	66%	93%	77%	86%	36%	74%	81%	95%
Petroleum Engineering	62	94%	98%	77%	65%	99%	74%	92%	97%
Prof/Technical Communication	4	80%	86%	94%	98%	36%	74%	92%	95%

According to the MAPP user's guide (Exhibit 2.C.I), the exam "is a test of college-level skills in critical thinking, reading, writing, and mathematics designed to measure academic skills developed through general education courses, rather than the subject knowledge specifically taught in those courses."

The test also measures proficiency within the academic context areas of the humanities, social sciences, and the natural sciences. As demonstrated in Table 2.C.I, Montana Tech students are doing well under this assessment. For example, 94% implies that 94% of the 118 institutions scored at or below Montana Tech's score.

To determine what courses are appropriate for the general education core, faculty within a department must first nominate a course for inclusion as a general education course. Details of the course, including course content, are then submitted to both the Curriculum Review Committee (CRC) and to the General Education Committee. If both committees approve the course for general education, the course is passed on for discussion among the general faculty. Finally, the general faculty vote on whether the course should be included in the general education core.

Montana Tech faculty realize the above procedure for course inclusion in the general education core may not specifically address whether the course satisfies the educational objectives of general education. A committee has been formed to determine a procedure which bases course inclusion in general education on a measured comparison to the general education objectives. In addition, while the MAPP exam does assess writing, critical thinking, functioning at an algebraic level, and the level of understanding of scientific methods, it does not assess oral communication, multi-cultural awareness, appreciation of diversity, or life-long learning. The committee will examine ways of measuring how well the current general education core satisfies these outcomes as well.

2.C.3 The general education program offerings include the humanities and fine arts, the natural sciences, mathematics, and the social sciences. The program may also include courses that focus on the interrelationships between these major fields of study.

As described above, Montana Tech offers courses in the humanities, natural sciences, mathematics, and in the social sciences within the general education core. A deficiency within the Montana Tech general education core is the lack of a course fulfilling a fine arts offering. The Montana Board of Regents General Education Core (<http://mus.edu/transfer/MUScorebyCampus.asp>) includes courses in the fine arts. Tech is evaluating ways in which students can have access to these types of courses.

2.C.4 The institution's policies for the transfer and acceptance of credit are clearly articulated. In accepting transfer credits to fulfill degree requirements, the institution ensures that the credits accepted are comparable to its own courses. Where patterns of transfer from other institutions are established, efforts to formulate articulation agreements are demonstrated.

Among schools within the Montana University System, there is a developing transfer agreement based on common course numbering. For example, Statistics 216

SELF-STUDY 2010

is the common course number for an entry level statistics course with an algebra course prerequisite. This agreement is also described in Section 2.A.3. One goal of this agreement is to ensure that the evaluation of general education transfer credits within the Montana University System is a fair and consistent process. This initiative has resulted in the "block transfer procedure," which is described in the catalog as follows:

"An undergraduate student who has completed the lower division coursework in an approved general education program at one of the institutions noted above, and who transfers to another of those institutions, cannot be required to take additional general education coursework at the lower division level."

For more information on the transfer of general education courses within the Montana University System, see the Montana Tech catalog or the website <http://mus.edu/transfer/index2.asp>. Transfer credits from outside the Montana University system are determined at the department level in conjunction with the Enrollment Services office. See the *Montana Tech catalog* (page 9) for a complete description of transfer credit policy.

2.C.5 The institution designs and maintains effective academic advising programs to meet student needs for information and advice, and adequately informs and prepares faculty and other personnel responsible for the advising function.

During the new faculty orientation, all new faculty are given training on how to be effective advisors. See the orientation packet, Exhibit 2.C.II, for details. Within departments, a reasonable effort is made to assign advisees to senior faculty, provided they are interested, rather than to junior faculty. This is done in the belief that the senior faculty's experience will benefit an advisee when a coherent schedule of classes is designed. Students are typically assigned an advisor at their initial enrollment, and, unless the student changes his/her field of study, the advisor assigned at this time will advise the student throughout their course of study at Montana Tech. Based on the SSI survey (see Table 2.C.II) the procedure followed for academic advising at Montana Tech results in high average student satisfaction compared to the national average.

TABLE 2.C.II: MONTANA TECH AVERAGE ADVISING SATISFACTION VS NATIONAL AVERAGE

NORTH CAMPUS						
	FALL 2007		FALL 2005		FALL 2003	
Advising	Montana Tech Average	National Average	Montana Tech Average	National Average	Montana Tech Average	National Average
SATISFACTION						
My academic advisor is concerned about my success as an individual	5.52	5.10	5.48	5.06	4.98	4.99
My academic advisory is knowledgeable about requirements in my major	5.92	5.40	5.77	5.40	5.46	5.33
SOUTH CAMPUS						
	FALL 2007		FALL 2005		FALL 2003	
Advising	Montana Tech Average	National Average	Montana Tech Average	National Average	Montana Tech Average	National Average
SATISFACTION						
My academic advisor is concerned about my success as an individual	5.43	5.05	5.31	5.00	4.99	4.96
My academic advisory is knowledgeable about my program requirements	5.77	5.36	5.83	5.32	5.60	5.26



CLOSING THE LOOP

Advising/Retention Committee

The Advising/Retention committee consists of representatives from administration, faculty, enrollment services, the business office, the library, and from student services. This committee was developed to identify and discuss issues related both to advising and to retention. Procedures have been implemented, as a result of this committee, to improve a student's likelihood of graduating and achieving his or her educational goals. One procedure initiated by the committee is to have advisors contact any advisees who receive at least one "D" or "F" grade at midterm and arrange a face-to-face meeting. At this meeting, any factors related to the grade are discussed as well as strategies to improve the student's academic performance. Although not enough data have been collected at this time to determine what effect this strategy is having, preliminary results support this type of advisor/advisee interaction. As shown in Figures 2.C.1 and 2.C.2 below, for the North campus the percentage of students who obtained a final course grade of "F" was lower for those students who met with an advisor than for those students who did not meet with an advisor.

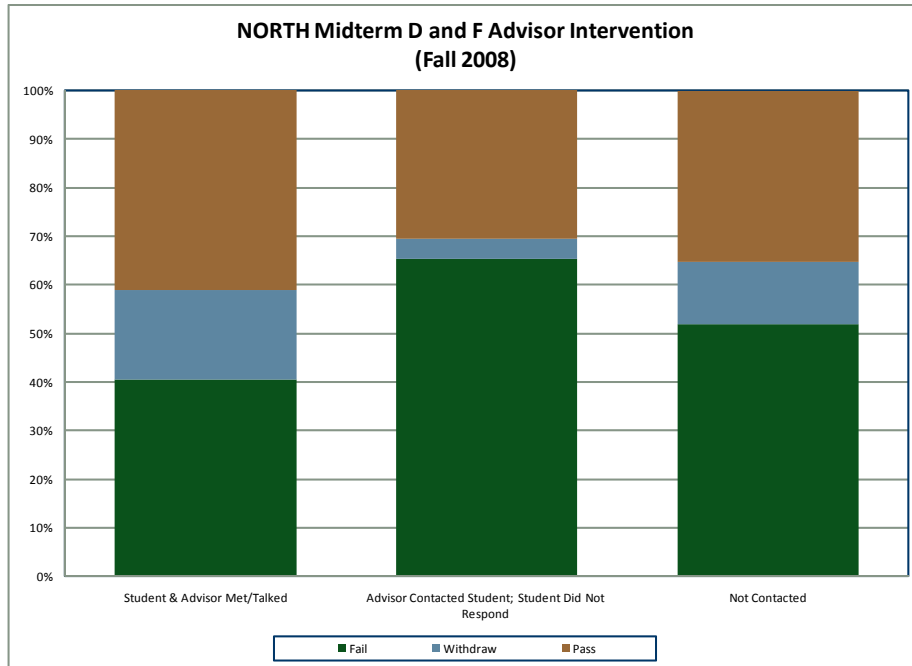


FIGURE 2.C.1: FINAL GRADE DISTRIBUTION AFTER ADVISOR INTERVENTION, FALL 2008

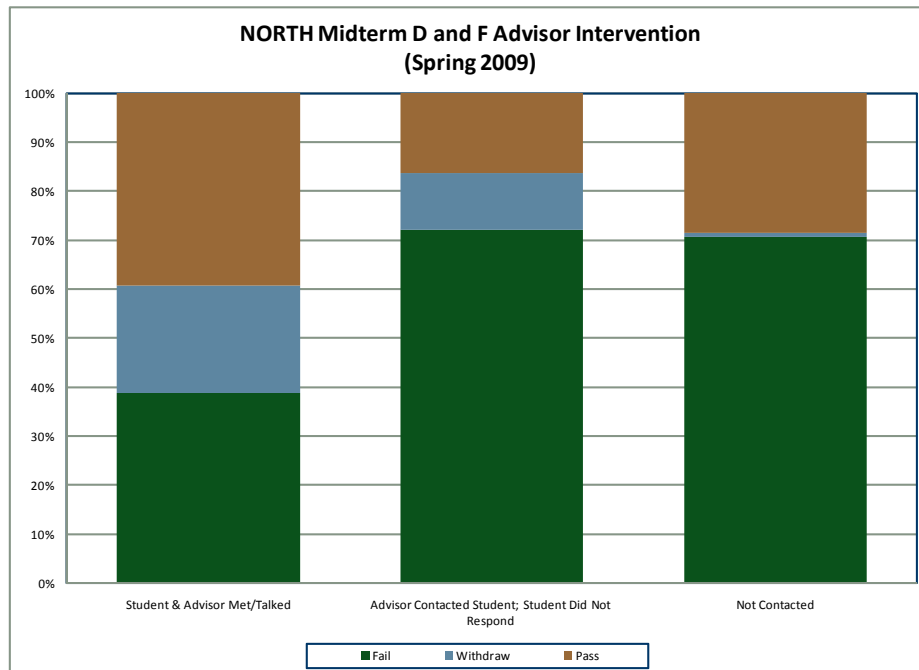


FIGURE 2.C.2: FINAL GRADE DISTRIBUTION AFTER ADVISOR INTERVENTION, SPRING 2009

2.C.6. Whenever developmental or remedial work is required for admission to the institution or any of its programs, clear policies govern the procedures that are followed, including such matters as ability to benefit, permissible student load, and granting of credit. When such courses are granted credit, students are informed of the institution's policy of whether or not the credits apply toward a degree.

For admission to a baccalaureate degree program, students must demonstrate a minimum Math and Writing proficiency level. Math proficiency can be demonstrated with an ACT math score of at least 22 or an SAT math score of at least 520. However, a student with a math ACT score of 18-21, or a math SAT score of 440-510 may enroll on a provisional basis. However, to gain full admission status the student must enroll in the remedial math course M 95, Intermediate Algebra, and earn a grade of at least "C-." See Policy [301.15](#) in the Montana Board of Regents Policy and Procedures manual (Exhibit G.2), for complete details.

In a similar fashion, writing proficiency can be demonstrated with an ACT score of at least 18 on the combined English/Writing section, or an SAT score of at least 440 on the Writing section. Students who do not demonstrate writing proficiency may enter a baccalaureate program at Montana Tech on a provisional basis. One method the student can employ to earn full admission status is to earn a grade of at least "C-" in the remedial communication course WRIT 080, Building Basic Writing Skills. See Policy [301.16](#) in the Montana Board of Regents Policy and Procedures manual for further details.

The minimum Math and Writing proficiency levels do not apply to students who are seeking admission to a two-year degree program.

2.C.7 The institution's faculty is adequate for the educational levels offered, including full-time faculty representing each field in which it offers major work.

As described in Standard 4.A.1, the current faculty profile at Montana Tech consists of 176 full-time and 91 part-time employees. For full-time faculty, 51% hold a terminal degree in the field in which they teach or do research, typically a Ph.D.; and 41% hold a Masters degree in the field in which they teach, or in a closely related field. Nearly all the faculty who teach an undergraduate course hold at least a Masters degree. For the graduate program, every effort is made to have faculty with an appropriate terminal degree teach graduate level courses.

The sufficient staffing of faculty at Montana Tech is modeled on need and available finances. As evidence that the current staffing is adequate, the student to faculty ratio, at present and across campus, is 15 to 1. For the Fall 2008 semester, the overall average student credit hours (SCHR) taught per tenure track faculty was 198. Figure 2.C.3 gives the average student credit hours per tenure track faculty for each baccalaureate degree granting program.

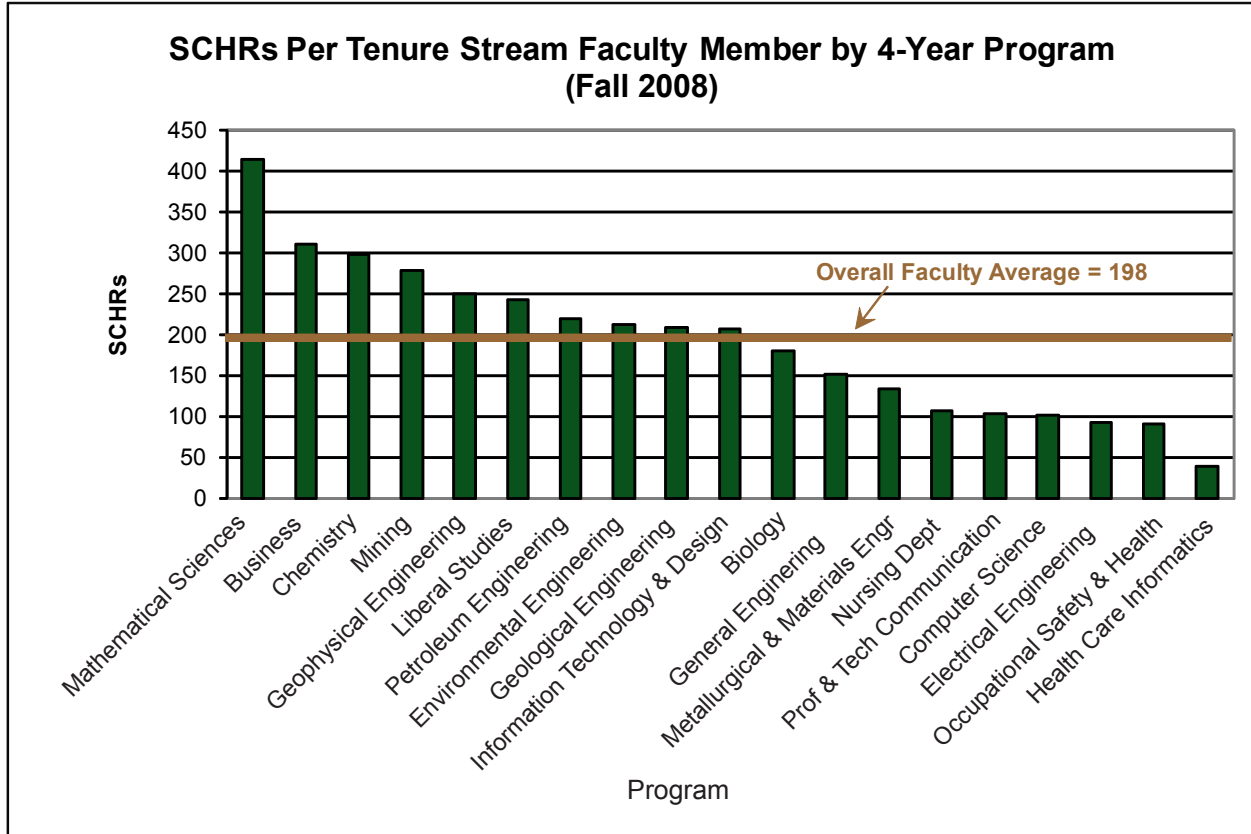


FIGURE 2.C.3: AVERAGE STUDENT CREDIT HOURS TAUGHT PER FACULTY PER DEPARTMENT

Montana Tech defines adjunct instructor as any instructor not in a tenure track position. As Table 2.C.III indicates, adjuncts play a significant role in teaching undergraduate students at Montana Tech. When reading the table, please note: (-) indicates the total number of sections taught that academic year.

SELF-STUDY 2010

**TABLE 2.C.III: PERCENTAGE OF COURSES (EXCLUDING LABS)
TAUGHT BY ADJUNCTS**

COURSE SUBJECT	% LECTURE SECTIONS TAUGHT BY ADJUNCTS PER ACADEMIC YEAR				
	2004-2005	2005-2006	2006-2007	2007-2008	2008-2009
Automotive Technology	0% (8)	0% (7)	0% (10)	20% (10)	0% (7)
Applied Health Sciences	26% (19)	16% (19)	25% (20)	22% (18)	29% (21)
Biological Sciences	32% (53)	35% (52)	17% (58)	24% (51)	21 % (56)
Business	23% (82)	28% (83)	22% (94)	21 % (92)	32% (96)
Computer Sciences	0% (37)	0% (34)	17% (30)	16% (32)	46% (35)
Carpentry			0% (3)	57% (7)	0% (10)
Civil Engineering Technology	0% (7)	0% (7)	0% (8)	71% (7)	0% (10)
Chemistry	6% (49)	23% (43)	23% (43)	29% (52)	22% (46)
Construction Technology			0% (2)	0% (3)	0% (3)
Communications	21 % (68)	32% (59)	30% (64)	28% (58)	34% (58)
Drafting Technology	0% (7)	0% (11)	0% (9)	43% (7)	38% (8)
Electrical Engineering					21 % (19)
Economics	10% (10)	11 % (9)	38% (8)	38% (8)	25% (8)
General Eng, Electrical Engineering	16% (112)	22% (98)	24% (84)	17% (95)	16% (73)
Environmental Engineering	16% (25)	22% (23)	34% (32)	12% (34)	0% (35)
Geographic Information	67% (3)	75% (4)	60% (5)		
Geological Engineering	0% (18)	0% (17)	0% (16)	0% (20)	0% (16)
Geophysical Engineering	0% (14)	43% (14)	32% (19)	0% (16)	0% (19)
Historic Preservation Technology	100% (2)	50% (2)	100% (10)	60% (5)	100% (7)
Health Care Informatics	20% (15)	38% (13)	23% (13)	6% (17)	25% (16)
Health	67% (3)	88% (8)	55% (20)	35% (23)	46% (24)
Honors					0% (4)
Health, PE, and Recreation	57% (7)	86% (7)	80% (5)	80% (5)	60% (5)
Humanities	14% (76)	12% (73)	20% (61)	33% (57)	45% (58)
Information Technology	28% (75)	33% (79)	26% (86)	24% (78)	26% (80)
Liberal Studies	0% (13)	0% (13)	0% (11)	0% (13)	0% (17)
Pre-Apprenticeship Lineman Prog				18% (11)	30% (10)
Metallurgical & Materials Eng	28% (29)	20% (25)	8% (26)	4% (28)	0% (27)
Mineral Economics	0% (6)	0%(5)	20% (5)	100% (5)	100% (5)
Mathematics	24% (112)	19% (105)	21% (110)	28% (109)	19% (110)
Metals Fabrication	92% (13)	86% (14)	93% (15)	31% (13)	38% (13)
Mining Engineering	5% (22)	0% (22)	24% (21)	14% (22)	16% (25)
Orientation/Student Success	77% (13)	93% (14)	85% (13)	73% (15)	57% (14)
Nursing	47% (45)	38% (40)	24% (37)	13% (45)	3% (35)
Occupational Safety & Health	5% (22)	5% (22)	5% (22)	13% (24)	17% (24)
Petroleum Engineering	34% (41)	20% (35)	37% (46)	27% (45)	15% (40)
Physics	43% (21)	68% (19)	48% (21)	36% (28)	25% (24)
Pre-Professional Health	0% (2)	0% (5)	0% (3)	0% (5)	0% (3)
Psychology	78% (9)	31% (13)	36% (14)	43% (14)	38% (13)
Professional & Technical Comm	28% (47)	17% (47)	43% (37)	38% (42)	61% (46)
Radiologic Technology	100% (2)	13% (8)	31% (13)	10% (10)	11 % (9)
Software Engineering	0% (8)	0% (11)	11 % (9)	0% (9)	0% (8)
Social Sciences			7% (14)	64% (11)	50% (10)
Society & Technology Studies	0% (3)	0% (2)	50% (2)	0% (2)	0% (2)
TOTAL	23%	25%	26%	24%	25%

Some specific examples of adjunct instructors employed by Montana Tech are the following:

- » The Business & Information Technology Department has three actively employed CPA's helping as adjunct instructors, each with at least 10 years of real world experience to bring to the classroom.

These three adjuncts are used as instructors in

(a) Principles of Financial Accounting (ACTG 201), and

(b) Auditing I & II (ACTG 411 and 412).

- » The program in Health Care Informatics uses both an M.D. and R.N., employed by the local hospital, as adjuncts, teaching EHR in Medical Practice (HCI 340) and Health Care Facility Procedure (HCI 215), respectively.

2.C.8 In an effort to further establish an institution's success with respect to student achievement, the Northwest Commission on Colleges and Universities shall require those institutions that offer pre-baccalaureate vocational programs to track State licensing examination pass rates, as applicable, and job placement rates.

The AAS program in Radiologic Technology requires students to sit for a national certification exam developed by the American Registry of Radiologic Technologists (ARRT). Table 2.C.IV gives exam pass rates and job placement rates for the program over the last four years:

TABLE 2.C.IV: RATES FOR AAS DEGREE IN RADIOLOGIC TECHNOLOGY

ACADEMIC YEAR	NUMBER OF RADIOLOGIC TECHNOLOGY GRADUATES	PERCENT OF GRADUATES WHO TOOK ARRT EXAM	ARRT PASS RATE	AAS RADIOLOGIC TECHNOLOGY GRADUATE PLACEMENT
2008-2009	15	93%	100%	TBD
2007-2008	20	90%	89%	90%
2006-2007	17	94%	94%	94%
2005-2006	7	100%	100%	100%
Average	15	94%	96%	95%

Students in the Associate of Science in Nursing (ASN) program must pass the National Council Licensure Examination for Registered Nurses (NCLEX-RN) in order to gain licensure to practice as a registered nurse. Table 2.C.V gives pass rates and placement information.

SELF-STUDY 2010

TABLE 2.C.V: RATES FOR ASN DEGREE

ACADEMIC YEAR	NUMBER OF ASN GRADUATES	GRADUATES WHO TOOK NCLEX-RN PASS RATE	ASN GRADUATE PLACEMENT
2008-2009	25	96%	TBD
2007-2008	24	88%	100%
2006-2007	44	70%	98%
2005-2006	40	75%	98%
Average	33	82%	99%

Montana Tech also offers a 14/15 credit Certified Nurse Assistant (CNA) certificate. Because students may sit for the CNA Registry exam after successful completion of the Health (HLTH) 0110-Nursing Fundamentals course, no students have, to date, completed the entire 14/15 credit program. See the [Montana Tech catalog](#) (Exhibit G.I) for more details. Table 2.C.VI gives the Registry exam pass rate for Montana Tech students.

TABLE 2.C.VI: RATES FOR CNA REGISTRY EXAM

ACADEMIC YEAR	NUMBER PASSING HLTH 0110	PERCENT TAKING REGISTRY EXAM	REGISTRY EXAM PASS RATE
2008-2009	36	100%	92%
2007-2008	34	91%	97%
2006-2007	38	100%	95%
Average	36	97%	95%

The Career Services Office at Montana Tech tracks job placement rate for graduates. Table 2.C.VII gives the placement rate for Summer 2007 - Spring 2008 graduates who obtained an Associate of Applied Science or a Certificate of Applied Science.

TABLE 2.C.VII: PLACEMENT RATE FOR COT DEGREES SPRING 2008

	GRADUATES	PLACEMENT
ASSOCIATE OF SCIENCE		
Registered Nursing	22	100%
ASSOCIATE OF APPLIED SCIENCE		
Accounting Technology	16	88%
Automotive Technology	6	100%
Business Technology	4	100%
Civil Engineering Technology	3	100%
Construction Trade-Carpentry	2	100%
Drafting Technology	3	100%
GIS/GPS	1	100%
Health Care Informatics Technology	1	100%
Medical Assistant	6	67%
Metals Fabrication	9	90%
Network Technology	5	100%
Practical Nursing	2	100%
Radiologic Technology	20	90%
CERTIFICATE OF APPLIED SCIENCE		
Automotive Technology	4	100%
Computer Assistant	1	100%

For a broader range of tables covering prior years, please see Exhibit 2.C.III.

STANDARD 2.D – GRADUATE PROGRAM

A graduate program is a set of advanced academic experiences beyond the baccalaureate level which must be satisfactorily completed to warrant the award of a graduate degree such as a master's or doctorate.

Graduate degree programs may generally be classified into two categories: those that prepare students mainly as scholars and researchers and those that prepare students for a profession. The objective of a research-oriented graduate degree program is to develop scholars – that is, students with skills necessary to discover or acquire, organize, and disseminate new knowledge. The objective of the professional graduate degree is to develop in students their competence in interpreting, organizing, and communicating knowledge and to develop the analytical and performance skills needed for the conduct and advancement of professional practice.

2.D.1 The level and nature of graduate-degree programs are consistent with the mission and goals of the institution.

Montana Tech offers a Masters degree in the following programs:

- » Electrical Engineering.
- » General Engineering.
- » Environmental Engineering.
- » Geosciences.
- » Industrial Hygiene.
- » Metallurgical/Mineral Processing Engineering
- » Mining Engineering.
- » Petroleum Engineering.
- » Project Engineering & Management
- » Technical Communication

Montana Tech also offers an Interdisciplinary Master's of Science (IMS) and, through The University of Montana-Missoula, a Ph.D. in an Individualized Interdisciplinary Program (IIP). According to the Tech Catalog, the IMS "allows students to work with faculty in the design of a graduate curriculum tailored to their unique academic, creative and professional objectives." The IIP doctoral program allows a faculty member from Montana Tech to serve as chair of the student's graduate committee. See the Catalog for additional details.

All graduate degrees listed above are consistent with Montana Tech's mission, which states that the institution must supply knowledge and education "through a strong undergraduate curriculum augmented by research, graduate education, and service." Also, as stated in the Catalog, the aim of the graduate school is to "foster a community of closely associated faculty and post-baccalaureate scholars imbued with a common interest in advanced professional study and creative effort while seeking to stimulate extensive academic achievement by encouraging diverse development in creative thought and accomplishment." This clearly is in agreement with the mission of Montana Tech.

2.D.2 Programs of study at the graduate level are guided by well-defined and appropriate educational objectives and differ from undergraduate programs in requiring greater depth of study and increased demands on student intellectual or creative capacities.

To make sure that graduate courses have appropriate depth and breadth, the course must first be approved by the Graduate Council, next by the Curriculum Review Committee, then by the general faculty, and finally by the Montana Board of Regents. This careful approval process for graduate courses ensures that both workload and depth of material are maintained at a significantly greater degree than for undergraduate level courses.

Educational objectives for graduate programs at Montana Tech are currently being developed. A draft copy of these objectives may be viewed at Exhibit 2.D.I.

2.D.3 When offering the doctoral degree, the institution ensures that the level of expectations, curricula, and resources made available are significantly greater than those provided for master's and baccalaureate level programs.

Montana Tech does not currently offer its own doctoral degree. The IIP program is through The University of Montana-Missoula.

STANDARD 2.E – GRADUATE FACULTY AND RELATED RESOURCES

Essential to graduate education are the recruitment and retention of a faculty that excels in scholarship, teaching, and research. To provide an acceptable level of instruction for the graduate student, faculty whose responsibilities include a major commitment to graduate education are involved in keeping pace with, and advancing the frontiers of, knowledge.

2.E.1 The institution provides evidence that it makes available for graduate programs the required resources for faculty, facilities, equipment, laboratories, library and information resources wherever the graduate programs are offered and however delivered.

Montana Tech provides the appropriate resources for graduate students to be successful. Resources include both qualified faculty and overall assets necessary to deliver graduate offerings. This potential is demonstrated through surveys (Exhibits 2.B.VII, 2.B.VIII) and program reviews (Exhibit 2.A.I). Please see Standards four, five, and eight for other supporting documentation. Note that:

- » All tenure-track faculty who have at least a Master's degree are qualified to serve on a student's Graduate Committee. As stated in Standard 4, approximately 70% of tenure track instructional faculty in B.S. programs hold what is considered a terminal degree (i.e., Ph.D., Ed.D., J.D., or M.D.) in their field.
- » A typical Graduate Committee will consist of two members from the student's major program, one from a minor program (if applicable), and additional members as selected by the chair and the student.
- » The Graduate Committee is responsible for advising the student on all academic and research matters and will serve as the student's examining committee.

Montana Tech has the required physical resources for graduate programs. These include laboratories, library offerings, and information resources. Please see the relevant program reviews and Standards 5 and 8 for supporting evidence.

2.E.2 The institution demonstrates a continuing commitment of resources to initiate graduate programs and to ensure that the graduate programs maintain pace with the expansion of knowledge and technology.

SELF-STUDY 2010

The institution supports graduate education programs on campus in the following ways:

- » Montana Tech provides a nominal 3 credit hour of release time per semester for those faculty engaged in research and in graduate student training. This release represents a 25% reduction (from 12 crhrs/semester to 9 crhrs/semester) for the average research-active faculty member who mentors graduate students. These course load reductions may be further enhanced by faculty buyouts funded by external grants.
- » New faculty at Montana Tech are provided up to \$5000 through the Seed Grant Program. These monies often help faculty and grad students enter new cutting-edge areas of research and graduate study which are later brought to fruition by writing research proposals.
- » Research space is made available, but most research equipment is not provided by the institution. Rather, it is obtained through grant writing efforts of the faculty which, in general, have been fairly successful. Over the last five years, grant funding sources have provided over \$1,300,000 for research equipment used both by faculty and by graduate students.
- » Support provided to the graduate programs also consists of direct support to the students. For example, in 2008 110 graduate students received \$673,209 of total support, with the major portion coming from tuition waivers. Deans review tuition waiver allocations on an annual basis and reallocates them to impact the areas of greatest need. Figure 2.E.1 shows the distribution among sources of the support our students received.

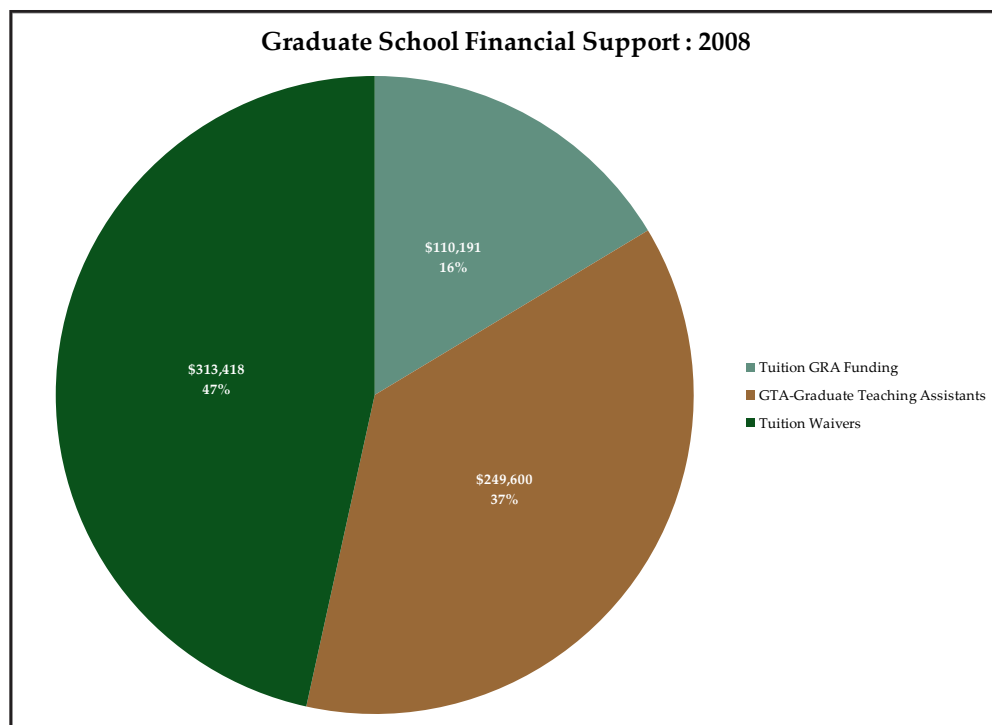


FIGURE 2.E.1: GRADUATE SCHOOL FINANCIAL SUPPORT

The campus supported 46 students with Graduate Teaching Assistantships and supported 47 students with tuition waivers. Table 2.E.I shows GTA expenditures by department, and Table 2.E.II gives summary GTA information.

TABLE 2.E.I: GTA EXPENDITURES BY DEPARTMENT

DEPARTMENT	08-09		07-08		06-07		05-06		04-05	
	AMT	GTAs	AMT	GTAs	AMT	GTAs	AMT	GTAs	AMT	GTAs
Biology	\$8,000	1	\$8,000	1	\$4,000	1	\$4,000	1	\$4,000	1
Electrical Eng	\$20,000	4								
Environmental Eng	\$18,000	4	\$16,000	3	\$17,000	3	\$16,000	3	\$23,600	3
General Eng	\$14,000	4	\$44,000	7	\$35,000	6	\$36,000	7	\$32,000	6
Geochemistry	\$22,666	4	\$24,000	3	\$24,000	6	\$21,920	5	\$24,000	4
Geological Eng	\$20,000	3	\$16,000	3	\$16,000	3	\$16,000	4	\$16,000	3
Geophysical Eng	\$24,000	4	\$24,000	4	\$24,000	3	\$26,000	5	\$24,000	5
Industrial Hygiene	\$23,603	8	\$18,900	12	\$16,000	13	\$13,000	7	\$17,750	10
Metallurgical/ Mineral Proc Eng	\$23,081	6	\$21,100	6	\$16,000	5	\$18,000	4	\$20,000	6
Mining Eng	\$16,000	2	\$16,000	3	\$16,000	2	\$16,000	2	\$16,000	2
Petroleum Eng	\$28,500	8	\$28,000	6	\$16,000	4	\$10,000	3	\$8,000	2
Technical Eng	\$32,000	5	\$26,000	4	\$26,000	5	\$24,000	5	\$28,000	6
Sloan, Biomed Grad/Research			\$7,600	1	\$7,600	1	\$16,680	4	\$4,000	1

TABLE 2.E.II: GTA SUMMARY INFORMATION

YEAR	AMOUNT	NUMBER OF GTAs	GRADUATE SCHOOL ENROLLMENT
08-09	\$249,850	53	109
07-08	\$249,600	53	104
06-07	\$217,600	52	85
05-06	\$217,600	50	93
04-05	\$217,350	49	99

SELF-STUDY 2010

Over 85% of eligible students received some form of financial support. The amount of graduate student support provided by grants and contracts is also tracked. In the last year, these sources provided \$110,191 in GRA support.

2.E.3 Institutions offering graduate degrees have appropriate full-time faculty in areas appropriate to the degree offered and whose main activity lies with the institution. Such faculty are related by training and research to the disciplines in which they teach and supervise research.

As described in section 2.E.1, all tenure-track faculty who have at least a Master's degree are considered graduate faculty. The majority of these faculty hold terminal degrees in areas acceptable to their department, which at Montana Tech would include Ph.D., Ed.D., and J.D. All of these faculty are eligible to serve on graduate thesis committees. A graduate committee may consist of faculty outside of Montana Tech; however, at least one committee member must be from the Montana Tech department which grants the Master's degree.

2.E.4 Faculty are adequate in number and sufficiently diversified within disciplines so as to provide effective teaching, advising, scholarly and/or creative activity, as well as to participate appropriately in curriculum development, policy development, evaluation, institutional planning, and development. Small graduate programs ordinarily require the participation of several full-time faculty whose responsibilities include a major commitment to graduate education.

The individuals providing graduate education at Montana Tech are qualified to engage in the multiple roles associated with this type of degree offering. *Policy 303.3* of the Montana Board of Regents Policy and Procedures Manual (Exhibit G.II) requires every campus of the Montana University System to conduct an internal review of academic departments at least once every seven years. Please see <http://mus.edu/asa/ProgramReviewSchedule.pdf> for the current schedule of program reviews. Adequacy of faculty numbers and faculty diversity are assessed during this review. For example, the Electrical Engineering department offers a Masters of Science degree. As demonstrated in their department review (see Exhibit 2.A.I), all the tenure-track faculty hold a Ph.D., are actively engaged in relevant research, advise graduate students, and serve on important university committees.

In addition to the formal program review, all graduate offerings are reviewed on a yearly basis both through departmental meetings and through yearly meetings of the Graduate Council.

2.E.5 In the delivery of off-campus programs, full-time faculty whose responsibilities include a major commitment to graduate education provide physical presence and participation in the planning, delivery, and assessment of the programs.

Montana Tech offers two Master's degrees online: one in Industrial Hygiene; and the other in Project Engineering & Management. Both of these are designed and managed by full-time faculty. The Industrial Hygiene degree is part of the Safety, Health and Industrial Hygiene department. The Project Engineering & Management degree is

currently directed by the Environmental Engineering Department Head. Please see the departmental reviews (Exhibit 2.A.I) for further details.

2.E.6 The institution that offers the doctoral degree has a core of full-time faculty active in graduate education at its main campus and at each off-campus location where doctoral programs are offered.

Montana Tech does not offer a doctoral degree.

STANDARD 2.F – GRADUATE RECORDS AND ACADEMIC CREDIT

Graduate admission and retention policies ensure that student qualifications and expectations are compatible with institutional mission and goals. Graduate program faculty are involved in specifying admission criteria, transfer or graduate credit, and graduation requirements.

2.F.1 Graduate program admission policies and regulations are consistent with and supportive of the character of the graduate programs offered by the institution. These policies and regulations are published and made available to prospective and enrolled students.

To ensure that the admission procedure is compatible with the goals of a department's graduate program, each graduate department's program head recommends admission status with the concurrence of the Dean of Graduate Studies. As stated in the Catalog, there are three types of admission to Graduate School:

- » Regular Admission-granted to an applicant who
 - (a) holds a baccalaureate or acceptable terminal degree in a field applicable to the graduate program;
 - (b) has at least a 3.00 GPA;
 - (c) has acceptable GRE scores (when applicable);
 - (d) shows potential for graduate study.
- » Provisional Admission-granted to an applicant who
 - (a) is deficient in some undergraduate courses in his or her major field; or
 - (b) student admitted has not satisfied all the requirements for regular admission. (Students admitted on a provisional status typically have two semesters to remove any stated provisions and must have at least a 2.7 GPA or at least a 3.0 GPA the last four semesters of their undergraduate career.)
- » Provisional Probation Admission-granted to an applicant who
 - (a) meets the criteria for Provisional Status but whose GPA is between 2.5 and 2.69. (Students admitted under this status are on academic probation and have one semester to achieve at least a 3.0 GPA.)

SELF-STUDY 2010

See the [Catalog](#) for additional details concerning admission policies and regulations.

2.F.2 Admission to all graduate programs is based on information submitted with the formal application such as undergraduate and graduate transcripts, official reports on nationally recognized tests, and evaluations by professionals in the field or other faculty-controlled evaluation procedures.

Admission to graduate programs is based on information submitted by the applicant. This information includes transcripts, three references, GRE results when applicable, a personal/professional statement, and immunization records. Additionally, for international students, a statement of financial support and the TOEFL score (when the student's first language is not English) is required.

2.F.3 Faculty teaching in graduate programs are involved in establishing both general admission criteria for graduate study as well as admission criteria to specific graduate programs.

Faculty are involved in establishing admission criteria for a department's graduate program. For example, this occurs within departments at department meetings, through representation on the Graduate Council, and at general faculty meetings.

2.F.4 Graduation requirements for advanced degrees offered by the institution are determined by the faculty teaching in the applicable graduate programs. At minimum, the policies governing these graduation requirements include:

- » the specified time period in which the degree must be completed;
- » the number of credit hours that must be completed at the degree-granting institution, normally at least two-thirds of those required for the degree;
- » the minimum number of graduate-level credits, normally at least 50% of those required for the degree;
- » for the master's degree, a minimum of one academic year of full-time study or its equivalent, with a minimum of 24 semester or 36 quarter hours;
- » the number of graded credit hours that must be earned for the degree;
- » the minimum standard of performance or acceptable grade point average, normally a B or its equivalent;
- » the types of qualifying and exit examinations which the candidate must pass;
- » the proficiency requirements the candidate must satisfy; and
- » the thesis, dissertation, writing, or research requirement which the candidate must satisfy.

Graduate faculty are responsible for establishing requirements for Master's degrees by means of the following: through participation in graduate departmental meetings, through representation on the Graduate Council, through representation on the Curriculum Review Committee, and at general faculty meetings. In addition, specific course work and thesis requirements for graduation are set by faculty on the individual student's Graduate Committee. General requirements that apply to all graduate students, regardless of the program of study, are published in the [Catalog](#) (Exhibit G.I).

Also, department-specific requirements are found under each graduate department's listing in the *Catalog*.

2.F.5 Transfer of graduate credit is evaluated by faculty based on policies established by faculty whose responsibilities include a major commitment to graduate education, or by a representative body of such faculty who are responsible for the degree program at the receiving institution. The amount of transfer credit granted may be limited by the age of the credit, the institution from which the transfer is made, and the appropriateness of the credit earned to the degree being sought.

Students may apply up to 6 credits taken at other graduate schools to a Montana Tech graduate program. However, the credits must meet the following requirements:

- » The course was acceptable for graduate credit at the school where it was taken.
- » A grade of at least a "B" was earned.
- » Final determination of transfer credits is made by the student's Graduate Committee as applicable to the student's program.

Once admitted to a Master's program, the student has six calendar years to complete all degree requirements. Any transfer credit requests older than six years from the anticipated graduation date of the student not only must meet the transfer credit requirements but must also be approved by the Dean of Graduate Studies.

2.F.6 Graduate credit may be granted for internships, field experiences, and clinical practices that are an integral part of the graduate degree program. Consistent with Policy 2.3 Credit for Prior Experiential Learning, credit may not be granted for experiential learning which occurred prior to the student's matriculation into the graduate degree program. Unless the graduate student's faculty advisor structures the current learning experience and monitors and assesses the learning and its outcomes, no graduate credit is granted for current learning experiences external to the student's formal graduate program.

A specific graduate program may grant credit for an internship only if both the student's Graduate Committee and the Dean of Graduate Studies approve. Moreover, Montana Tech does not give credit for prior experiential learning.

STANDARD 2.G – CONTINUING EDUCATION AND SPECIAL LEARNING ACTIVITIES

The changing nature of the demands placed upon individuals in today's society requires many of them to engage in life-long education. Many higher education institutions have incorporated into their missions an extension and public service

SELF-STUDY 2010

component to provide for life-long learning opportunities. These opportunities are referred to as continuing education, professional development, extension education, outreach, special programs, public and community service programs. Such programs may be for either undergraduate or graduate credit, or non-credit, may be offered on and off campus, and may be offered through a variety of instructional formats.

The provisions of this standard apply to:

- » Off-campus programs and courses for credit, including those at branch campuses, extension centers or satellite sites, external degree programs, and military base programs.
- » Degree-completion programs.
- » Distance learning courses and courses taught exclusively on or off campus by special delivery systems, such as computer-based instruction, correspondence, television, video or audio cassette, or through other electronically-accessed means.
- » Practices providing credit for prior experiential learning.
- » Travel/study and study abroad programs.
- » Courses certified by the institution offered in secondary schools for college or university academic credit.
- » Non-credit community service programs and courses, including those that offer Continuing Education Units (CEU).
- » Relicensure courses, in-service, and credential programs.
- » Testing, evaluation, and examination procedures for granting degree credit.
- » Workshops, seminars, short courses, conferences, institutes, special evening and summer programs.

OFF-CAMPUS AND OTHER SPECIAL PROGRAMS PROVIDING ACADEMIC CREDIT

Continuing education and special learning activities, programs, and courses offered for credit are consistent with the educational mission and goals of the institution. Such activities are integral parts of the institution and maintain the same academic standards as regularly offered programs and courses. The institution maintains direct and sole responsibility for the academic quality of all aspects of all programs and courses through the management and supervision by faculty and institutional administrators. Adequate resources to maintain high quality programs are ensured.

2.G.1 The institution provides evidence that all off-campus, continuing education (credit and non-credit), and other special programs are compatible with the institution's mission and goals, and are designed, approved, administered, and periodically evaluated under established institutional procedures.

All of Montana Tech's distance delivery courses follow the same rules and procedures for implementation, instruction, and evaluation as all other courses offered for academic credit. See Standards 2.A, 2.B, and 2.C for the details of these processes. Montana Tech provides adequate resources for distance education. Some recent (over the last five years) developments include:

- » Creating and staffing the new position of Distance Learning Coordinator.
- » Forming an eLearning Advisory Committee at Tech.
- » Purchasing Wimba, a collaboration tool, that includes Wimba Pronto
- » Building new high tech computer labs.
- » Giving every faculty member access to a Blackboard course shell.
- » Giving every faculty member access to Wimba.
- » Purchasing two new portable Tandberg units.
- » Training faculty in Blackboard and Wimba use.

(See Standard 5-IT and Standard 8 for additional details concerning Blackboard, Wimba, and the high tech computer labs.)

The types of distance education available through Montana Tech include:

- » Synchronous courses delivered online in real time through Wimba, Polycom, or Tandberg.
- » Asynchronous courses delivered anytime, anywhere through the Internet and Blackboard.
- » Blended courses, where distance students sit in on traditional courses via collaboration tools such as Wimba.
- » Hybrid courses which combine face-to-face instruction with computer-mediated instruction.
- » Live video conferencing through Wimba, Polycom, or Tandberg.

Over the last five years, 32%-34% of faculty have taught online courses at Montana Tech. As demonstrated in Table 2.G.I, the faculty teaching online courses have typically scored well on student course evaluations.

SELF-STUDY 2010

TABLE 2.G.I: SUMMARY OF COURSE EVALUATIONS FOR ONLINE COURSES

Statement	Strongly Agree	Agree	Neither Agree Nor Disagree	Disagree	Strongly Disagree	N
FRESHMAN AND SOPHOMORE COURSES						
The instructor has a concern for the quality of teaching and learning	34%	38%	20%	4%	4%	2104
The quality of teaching was very effective in contributing to my learning	32%	36%	18%	7%	6%	2078
The instructor is well prepared	36%	41%	14%	5%	4%	2071
JUNIOR AND SENIOR COURSES						
The instructor has a concern for the quality of teaching and learning	37%	43%	14%	3%	4%	508
The quality of teaching was very effective in contributing to my learning	35%	41%	13%	4%	7%	511
The instructor is well prepared	38%	46%	10%	3%	3%	500
GRADUATE COURSES						
The instructor has a concern for the quality of teaching and learning	40%	44%	14%	1%	0%	240
The quality of teaching was very effective in contributing to my learning	34%	42%	17%	5%	2%	238
The instructor is well prepared	38%	49%	8%	3%	1%	240

See Exhibit 2.B.I for further examples of student course evaluations.

2.G.2 The institution is solely responsible for the academic and fiscal elements of all instructional programs it offers. The institution conforms to Policy A-6 Contractual Relationships with Organizations Not Regionally Accredited.

Montana Tech is solely responsible for the academic and fiscal elements of all its programs. Montana Tech has no contractual relationships with organizations which are not regionally accredited.

2.G.3 Full-time faculty representing the appropriate disciplines and fields of work are involved in the planning and evaluation of the institution's continuing education and special learning activities.

All courses offered at Montana Tech are for academic credit, and thus follow all regulations of the regular academic curriculum. Montana Tech offers several courses for continuing education credit. These courses are transcribed accordingly, and full-time faculty are involved in the planning, evaluation (and often) the implementation of these academic offerings.

2.G.4 The responsibility for the administration of continuing education and special learning activities is clearly defined and an integral organizational component of the institution's organization.

Continuing education is administered through the office of Enrollment Services and is managed accordingly. Often, special learning activities occur through the Office of Technical Outreach. A description of the learning activities sponsored by Technical Outreach as well as how the Outreach program is organized can be found at <http://www.mtech.edu/about/outreach.htm>.

2.G.5 Programs and courses offered through electronically-mediated or other distance delivery systems provide ready access to appropriate learning resources and provide sufficient time and opportunities (electronic or others) for students to interact with faculty.

Montana Tech uses the following learning resources for its online distance education courses:

- » Wimba (a collaboration tool),
- » Camtasia (screen recorder and presentation software),
- » Polycom (a high end video conferencing system),
- » Tandberg (a high end video conferencing system), and
- » PVX software on a laptop for Polycom.

Further descriptions of Tech's electronic delivery of courses can be found in Standard 2.G.1.

2.G.6 There is an equitable fee structure and refund policy.

Montana Tech's fee structure is equitable to students and approved by the Montana Board of Regents. The fee structure can be found in the Montana Tech Catalog (Exhibit G.I) and online at http://www.mtech.edu/business/Tuition_and_Fee.htm.

The fee structure for Continuing Education courses at Montana Tech is based on the notion of self-sufficiency. Generally, a \$30 per credit transcript and processing fee is considered the base charge. Then the cost of the course is used to determine the total fee. Lab fees, instructor compensation, materials, travel and program sustainability are all considered when determining the full continuing education course fee. The unique funding needs of each course is considered when setting the fee.

2.G.7 The granting of credit for continuing education courses and special learning activities is based upon institutional policy, consistent throughout the institution, and applied wherever located and however delivered. The standard of one quarter hour of credit for 30 hours or one semester hour of credit for 45 hours of student involvement is maintained for instructional programs and courses.

Through the centralized management of Continuing Education in the Office of Enrollment Services, institutional policies are adhered to with consistency. Standards for student involvement hours, costs, and transcripting are applied to all continuing education opportunities. Additionally, when the Office of Technical Outreach offers special learning activities, the policy followed is in accord with national guidelines as

SELF-STUDY 2010

established by the International Association for Continuing Education and Training (IACET). For more information regarding CEU credit, visit the IACET website, www.iacet.org.

2.G.8 Continuing education and/or special learning activities, programs, or courses offered for academic credit are approved in advance by the appropriate institutional body and monitored through established procedures.

The Office of Enrollment Services must approve all course offerings. When courses are offered for academic credit, the regulations of the academic curriculum are followed.

2.G.9 Credit for prior experiential learning is offered only at the undergraduate level and in accordance with Policy 2.3 Credit for Prior Experiential Learning.

Montana Tech does not award credit for prior experiential learning.

2.G.10 An institution offering an external degree, degree-completion program, or special degree has clearly articulated policies and procedures concerning admission to the program, transfer of prior-earned credit, credit by examination (e.g., College Level Examination Program (CLEP) of the College Entrance Examination Board and the institution's own examinations), credit for prior experiential learning, credit by evaluation, and residency requirements.

All degree programs at Montana Tech are listed in the Montana Tech Catalog (See Exhibit G.I). Transfer of credit policies, as well as policies regarding credit by examination (AP or CLEP) are also explained in the Catalog.

2.G.11 When credit is measured by outcomes alone or other nontraditional means, student learning and achievement are demonstrated to be at least comparable in breadth, depth, and quality to the results of traditional instructional practices.

When students are awarded credit based on outcomes, the credits are substantively equal to the outcomes of the students taking the class via a traditional model. This process is ensured in that the instructor and department offering the outcomes model are also responsible for the traditional educational model.

2.G.12 Travel/study courses meet the same academic standards, award similar credit, and are subject to the same institutional control as other courses and programs offered by the sponsoring or participating institution. Credit is not awarded for travel alone. The operation of these programs is consistent with Policy 2.4 Study Abroad Programs, and Policy A-6 Contractual Relationships with Organizations Not Regionally Accredited.

Montana Tech has a learning agreement with Lulea University of Technology in Lulea, Sweden. The announcement sent to students describing this agreement is the following:

"Take advantage of the learning agreement between MT Tech and Lulea University of Technology in Lulea, Sweden, and open your mind and broaden your horizons. The learning agreement includes the exchange of both

undergraduate and graduate students, faculty and scientific personnel, and the organization of conferences, seminars, and workshops. Lulea has a population of about 70,000 and is located in the northeastern part of the country. The city centre is on a peninsula, and water plays an important part in the lives of Lulea inhabitants. The city has developed into a technological centre in the North of Sweden. The most important corner-stones of this development are metallurgy, education and research. Lulea University offers nearly 200 courses in English in departments such as Business Administration and Social Sciences, Chemical and Metallurgical Engineering, Civil and Mining Engineering, Computer Science and Electrical Engineering, and Languages and Literature (please see the admissions website below for a complete list). You need about \$3000.00 to get you started with living expenses for approximately three months. In order to obtain an entry visa to Sweden, you must prove that you can finance your whole stay in the country. The Swedish academic year comprises two semesters similar to ours and runs from the mid of August to mid-January and mid-January to the first week of June (does not include orientation). Student staying for Fall semester only, can do their exams before Christmas to be able to go home before Spring semester starts at home. Exchange students arriving in August are encouraged to join the annual orientation program planned for first year students. During this time, upper-level students present a complete program for all newcomers including orientation to student life and lots of parties. An intensive course in Swedish for beginners is offered free of charge to all exchange students during the orientation program. Application Deadlines- Fall term: April 15, 2009 Spring term: October 15, 2009"

The formal agreement between the two schools is found at Exhibit 2.G.I.

Montana Tech graduate students may participate in the International Exchange Program by applying to the Thesis Abroad Program. The academic standards that apply to this program are the same as the standards that apply to all graduate students at Montana Tech. As described in the Montana Tech graduate school catalog.

"The program provides one semester of financial support to Montana Tech graduate students participating in approved thesis research at collaborating foreign institutions. Students must be full time graduate students in good academic standing. Typically applicants will be expected to have completed their first year of graduate study at Montana Tech. Students are required to participate in ongoing research projects at the host institution under the mentorship of an approved host faculty member. The students' Thesis Committee and the Department Head must approve the research topic and the collaborating foreign institution in advance."

Further details may be found at http://www.mtech.edu/gradschl-auth/thesis_abroad_instructions.html.

SELF-STUDY 2010

STANDARD 2.H – NON-CREDIT PROGRAMS AND COURSES

Non-credit programs and courses, including those that award Continuing Education Units (CEU), are consistent with the mission and goals of the institution. These offerings are characterized by high quality instruction with qualified instructors.

2.H.1 Non-credit programs and courses are administered under appropriate institutional policies, regulations, and procedures. Faculty are involved, as appropriate, in planning and evaluating non-credit programs.

Montana Tech does not offer non-credit programs or courses.

2.H.2 The institution maintains records for audit purposes which describe the nature, level, and quantity of service provided through non-credit instruction.

Montana Tech does not offer non-credit programs or courses.

2.H.3 When offering courses that award Continuing Education Units (CEU), the institution follows national guidelines for awarding and recording such units which call for one CEU being equivalent to 10 hours of instruction and appropriate to the objectives of the course. (See Glossary, Continuing Education Unit, and Policy A-9 Non-credit, Extension, and Continuing Education Studies.)

When offering courses that award Continuing Education Units, Montana Tech works directly with the Office of Public Instruction to ensure that the courses meet current standards. Additionally, these courses are delivered through the Office of Technical Outreach, and the practice and policy followed is in accord with national guidelines as established by the International Association for Continuing Education and Training (IACET). For more information regarding CEU credit, visit IACET at: www.iacet.org.

CLOSING THE LOOP

Strengths

Montana Tech has achieved and maintains a high level of quality within academic programs. Evidence supporting this is given by the following:

- » The high placement rate for Montana Tech graduates.
- » The high overall average scores on licensing and assessment exams (e.g., the scores on the MAPP exam, discussed in 2.B.2).
- » Faculty who are dedicated to quality advising and instruction.
- » The quality and availability of research and internship opportunities for students.

Opportunities for Improvement

The challenges faced by Montana Tech include the following:

- » Montana Tech administrators and faculty recognize the need to increase student retention.
- » While staffing at Montana Tech is currently adequate overall, some departments teach classes with large enrollments. Large classes may, at times, impede an instructors ability to provide conditions favorable for optimal student learning.
- » The current procedure for identifying courses that satisfy the objectives of the general education curriculum is not well defined. This has lead to a haphazard approach when considering a course for inclusion in the general education program.

Moving Forward

Montana Tech is moving forward by addressing the challenges listed above with the following methods:

- » The Advising/Retention committee is charged with making recommendations to improve retention.
- » The college Deans perform a yearly analysis to identify departments where staffing is insufficient. Then, subject to funding availability, the hiring of additional faculty within these departments is approved.
- » The General Education committee is charged with developing a systemic procedure for identifying courses suitable for the general education program.

SELF-STUDY 2010

POLICY 2.1 GENERAL EDUCATION/RELATED INSTRUCTION REQUIREMENTS

General Education and related instruction requirements are addressed in Standard 2.C. Some highlights are reproduced below.

The general education core, as described in the catalog, consists of the following academic areas and respective credits:

- » Communications (6 credits)
- » Humanities (6 credits)
- » Mathematical Sciences (6 credits)
- » Physical & Life Sciences (6-7 credits, a lab course required)
- » Social Sciences (6 credits).

The expected outcomes of the general education curriculum are the following (as published in the catalog):

- » Ability to express oneself both in written form and orally.
- » Proficient critical thinking skills.
- » Global and multi-cultural awareness.
- » Appreciation for diversity.
- » Understanding of scientific methods.
- » Ability to function adequately at an algebraic level.
- » An appreciation for life-long learning.

As discussed in Standards 2.B.1 and 2.C.2, these outcomes are assessed by requiring all students seeking a baccalaureate degree to complete The Educational Testing Service Measure of Academic Proficiency and Progress (MAPP) exam.

POLICY 2.2 EDUCATIONAL ASSESSMENT

Educational assessment at Montana Tech is discussed throughout the self-study. Specific examples of departmental assessment activities can be found in Standard 2.B, Table 2.B.I. Some additional information regarding the students attending Montana Tech, as well as some assessment results for some of the freshmen courses taught are provided below.

Table 2.P.I provides information about students attending Montana Tech, while Table 2.P.II gives the retention rate for these students.

TABLE 2.P.I: MONTANA TECH STUDENTS

YR	N	FULL TIME	PART TIME	RES FEE	NON RES FEE	FOR'N STS	TR'S-FER STS	ML	FE-ML	FR'SH	SOPH	JR	SR	POST BAC	GRAD STS
F04	2188	82%	18%	88%	12%	3%	6%	55%	45%	46%	18%	10%	18%	3%	5%
F05	2234	79%	21%	87%	13%	3%	7%	55%	45%	46%	21%	12%	15%	2%	4%
F06	2357	80%	20%	85%	13%	4%	7%	56%	44%	46%	19%	13%	16%	2%	4%
F07	2347	82%	18%	84%	16%	5%	8%	59%	41%	44%	21%	11%	17%	3%	4%
F08	2402	81%	19%	82%	17%	7%	7%	60%	40%	47%	19%	12%	15%	3%	5%
F09	2694	83%	17%	82%	18%	8%	9%	60%	40%	46%	20%	11%	15%	3%	5%

TABLE 2.P.II: MONTANA TECH RETENTION RATE

YEAR	FULL-TIME FRESHMEN RETENTION RATE (IPEDS)		150% NORMAL TIME GRADUATION RATE (IPEDS)	
	NORTH CAMPUS	SOUTH CAMPUS	NORTH CAMPUS	SOUTH CAMPUS
F04	60%	40%	40%	24%
F05	69%	37%	42%	21%
F06	67%	36%	38%	23%
F07	75%	37%	41%	15%
F08	69%	30%	38%	9%

- » North Campus: Programs granting Bachelors or Masters degrees.
- » South Campus: Programs granting only Associate degrees or Certificates.
- » North Campus Freshmen Retention Rate: The percentage of first-time, degree-seeking, full-time freshmen from the previous fall who are again enrolled in the current fall.
- » South Campus Freshmen Retention Rate: The percentage of first-time, degree/certificate-seeking, full-time freshmen from the previous fall who either enrolled again in the current fall or completed their program by the current fall.

Tables 2.P.III - 2.P.XV provide a comparison of grades and retention rates for students who satisfy a course prerequisite with those who don't. The following courses are examined:

- » Tables 2.P.III and 2.P.IV
 - M.T. College Success. As described in the Montana Tech catalog, "This course is designed to teach students how to have a successful college experience both academically and personally."

SELF-STUDY 2010

TABLE 2.P.III: FRESHMEN AND THE M.T. 1016 COLLEGE SUCCESS COURSE, SOUTH CAMPUS

		ENROLLED IN M.T. 1016						RET'N FOR FULL-TIME FRESHMEN
		ENROLLED IN M.T. 1016		GRADE		RETENTION FOR STUDENTS WITH GRADE		
YEAR	N	YES	NO	<C-	>C-	<C-	>C-	
F04	94	16%	84%	53%	47%	25%	43%	37%
F05	103	17%	83%	24%	76%	25%	69%	36%
F06	124	10%	90%	42%	58%	20%	29%	37%
F07	134	15%	85%	50%	50%	0%	40%	30%
F08	134	19%	81%	24%	76%	17%	21%	
F09	161	23%	77%	22%	78%			

* South Campus: Programs granting only Associate degrees or Certificates.

* Freshmen: First-time, degree/certificate-seeking, full-time freshmen

* < C- includes D, F, W

* South Campus Freshmen Retention Rate: The percentage of first-time, degree/certificate-seeking, full-time freshmen from the current fall who either enrolled again next fall or completed their program.

TABLE 2.P.IV: FRESHMEN AND THE M.T. 1016 COLLEGE SUCCESS COURSE, NORTH CAMPUS

		ENROLLED IN M.T. 1016						RET'N FOR FULL-TIME FRESHMEN
		ENROLLED IN M.T. 1016		GRADE		RET'N FOR STUDENTS WITH GRADE		
YEAR	N	YES	NO	<C-	>C-	<C-	>C-	
F04	289	18%	82%	19%	81%	10%	65%	69%
F05	277	17%	83%	17%	83%	25%	82%	67%
F06	327	21%	79%	17%	83%	17%	64%	75%
F07	292	16%	84%	11%	89%	60%	67%	69%
F08	347	20%	80%	1%	99%	0%	71%	
F09	326	11%	89%	22%	78%			

* North Campus: Programs granting Bachelors or Masters degrees.

* Freshmen: First-time, degree-seeking, full-time freshmen

* < C- includes D, F, W

* North Campus Freshmen Retention Rate: The percentage of first-time, degree-seeking full-time freshmen from the current fall who enrolled again next fall.

» Tables 2.P.V and 2.P.VI

- M 090 Introductory Algebra. As described in the catalog, this course is a "Brief review of fractions and decimals."

TABLE 2.P.V: FRESHMEN AND M 090, SOUTH CAMPUS

		SATISFIED PRE-REQUISITE			STUDENTS WITHOUT PRE-REQUISITE				STUDENTS WITH PRE-REQUISITE				RET'N FOR FULL-TIME FRESHMEN
					GRADE		RET'N FOR STUDENTS WITH		GRADE		RET'N FOR STUDENTS WITH		
					<C-	>C-	<C-	>C-	<C-	>C-	<C-	>C-	
YEAR	N	YES	NO	UNK	<C-	>C-	<C-	>C-	<C-	>C-	<C-	>C-	
F04	20	65%	35%	0%	57%	43%	0%	33%	38%	62%	20%	63%	37%
F05	38	39%	26%	34%	20%	80%	100%	50%	33%	67%	0%	60%	36%
F06	31	39%	16%	45%	0%	100%		60%	33%	67%	0%	50%	37%
F07	33	70%	30%	0%	40%	60%	50%	83%	43%	57%	20%	38%	30%
F08	44	86%	9%	5%	25%	75%	0%	100%	29%	71%	9%	52%	
F09	36	86%	11%	3%	25%	75%			42%	58%			

TABLE 2.P.VI: FRESHMEN AND M 090, NORTH CAMPUS

		SATISFIED PRE-REQUISITE			STUDENTS WITHOUT PRE-REQUISITE				STUDENTS WITH PRE-REQUISITE				RET'N FOR FULL-TIME FRESHMEN
					GRADE		RET'N FOR STUDENTS WITH		GRADE		RET'N FOR STUDENTS WITH		
					<C-	>C-	<C-	>C-	<C-	>C-	<C-	>C-	
YEAR	N	YES	NO	UNK	<C-	>C-	<C-	>C-	<C-	>C-	<C-	>C-	
F04	13	23%	62%	15%	38%	63%	0%	20%	33%	67%	0%	0%	69%
F05	12	17%	42%	42%	20%	80%	0%	50%	50%	50%	0%	0%	67%
F06	16	13%	44%	44%	57%	43%	25%	100%	50%	50%	0%	0%	75%
F07	10	80%	10%	10%	0%	100%		100%	38%	63%	33%	40%	69%
F08	20	95%	0%	5%					26%	74%	40%	57%	
F09	29	97%	3%	0%	0%	100%			21%	79%			

SELF-STUDY 2010

- » Tables 2.P.VII and 2.P.VIII
 - M 095 Intermediate Algebra. As described in the catalog, this course is an "Introduction to algebra; notations and definitions; addition and subtraction of signed numbers; simple equations..."

TABLE 2.P.VII: FRESHMEN AND M 095, SOUTH CAMPUS

YEAR		SATISFIED PRE-REQUISITE			STUDENTS WITHOUT PRE-REQUISITE				STUDENTS WITH PRE-REQUISITE				RET'N FOR FULL-TIME FRESHMEN
					GRADE		RET'N FOR STUDENTS WITH		GRADE		RET'N FOR STUDENTS WITH		
					<C-	>C-	<C-	>C-	<C-	>C-	<C-	>C-	
YEAR	N	YES	NO	UNK	<C-	>C-	<C-	>C-	<C-	>C-	<C-	>C-	
F04	15	33%	53%	13%	38%	63%	67%	100%	20%	80%	0%	50%	37%
F05	12	50%	33%	17%	50%	50%	50%	0%	0%	100%		100%	36%
F06	31	42%	32%	26%	40%	60%	25%	83%	23%	77%	33%	20%	37%
F07	22	50%	41%	9%	11%	89%	0%	38%	18%	82%	0%	33%	30%
F08	19	79%	11%	11%	0%	100%		0%	33%	67%	20%	50%	
F09	25	76%	24%	0%	0%	100%			47%	53%			

TABLE 2.P.VIII: FRESHMEN AND M 095, NORTH CAMPUS

YEAR		SATISFIED PRE-REQUISITE			STUDENTS WITHOUT PRE-REQUISITE				STUDENTS WITH PRE-REQUISITE				RET'N FOR FULL-TIME FRESHMEN
					GRADE		RET'N FOR STUDENTS WITH		GRADE		RET'N FOR STUDENTS WITH		
					<C-	>C-	<C-	>C-	<C-	>C-	<C-	>C-	
YEAR	N	YES	NO	UNK	<C-	>C-	<C-	>C-	<C-	>C-	<C-	>C-	
F04	52	12%	88%	0%	30%	70%	29%	66%	33%	67%	50%	50%	69%
F05	52	10%	77%	13%	25%	75%	40%	70%	0%	100%		100%	67%
F06	48	23%	73%	4%	40%	60%	21%	76%	73%	27%	13%	0%	75%
F07	21	29%	71%	0%	33%	67%	40%	70%	33%	67%	50%	75%	69%
F08	45	84%	16%	0%	29%	71%	100%	100%	18%	82%	29%	68%	
F09	47	74%	26%	0%	17%	83%			11%	89%			

- » Tables 2.P.IX and 2.P.X
 - M 121 College Algebra. The catalog description states the course "Covers standard topics of college algebra including linear and quadratic functions..."

TABLE 2.P.IX: FRESHMEN AND M 121, SOUTH CAMPUS

		SATISFIED PRE-REQUISITE			STUDENTS WITHOUT PRE-REQUISITE				STUDENTS WITH PRE-REQUISITE				RET'N FOR FULL-TIME FRESHMEN
					RET'N FOR STUDENTS WITH		RET'N FOR STUDENTS WITH		RET'N FOR STUDENTS WITH		RET'N FOR STUDENTS WITH		
					GRADE		GRADE		GRADE		GRADE		
YEAR	N	YES	NO	UNK	<C-	>C-	<C-	>C-	<C-	>C-	<C-	>C-	
F04	3	67%	33%	0%	0%	100%		100%	50%	50%	0%	100%	37%
F05	7	71%	29%	0%	50%	50%	0%	0%	0%	100%		60%	36%
F06	10	70%	20%	10%	0%	100%		50%	43%	57%	33%	100%	37%
F07	8	75%	25%	0%	50%	50%	0%	0%	67%	33%	50%	100%	30%
F08	8	100%	0%	0%					38%	63%	67%	40%	
F09	1	100%	0%	0%					100%	0%			

TABLE 2.P.X: FRESHMEN AND M 121, NORTH CAMPUS

		SATISFIED PRE-REQUISITE			STUDENTS WITHOUT PRE-REQUISITE				STUDENTS WITH PRE-REQUISITE				RET'N FOR FULL-TIME FRESHMEN
					RET'N FOR STUDENTS WITH		RET'N FOR STUDENTS WITH		RET'N FOR STUDENTS WITH		RET'N FOR STUDENTS WITH		
					GRADE		GRADE		GRADE		GRADE		
YEAR	N	YES	NO	UNK	<C-	>C-	<C-	>C-	<C-	>C-	<C-	>C-	
F04	56	48%	52%	0%	24%	76%	43%	68%	22%	78%	33%	62%	69%
F05	81	42%	51%	7%	46%	54%	53%	59%	32%	68%	36%	70%	67%
F06	88	50%	48%	2%	33%	67%	29%	89%	27%	73%	50%	81%	75%
F07	49	39%	59%	2%	34%	66%	20%	79%	11%	89%	50%	76%	69%
F08	45	87%	13%	0%	17%	83%	100%	100%	28%	72%	55%	75%	
F09	52	85%	13%	2%	29%	71%			27%	73%			

SELF-STUDY 2010

- » Tables 2.P.XI and 2.P.XII
 - M 151 Precalculus. The catalog description states the course "Includes the study of linear, polynomial, exponential, logarithmic and trigonometric functions and conic sections."

TABLE 2.P.XI: FRESHMEN AND M 151, SOUTH CAMPUS

YEAR		SATISFIED PRE-REQUISITE			STUDENTS WITHOUT PRE-REQUISITE				STUDENTS WITH PRE-REQUISITE				RET'N FOR FULL-TIME FRESHMEN
					RET'N FOR STUDENTS WITH		RET'N FOR STUDENTS WITH		RET'N FOR STUDENTS WITH		RET'N FOR STUDENTS WITH		
					GRADE		GRADE		GRADE		GRADE		
YEAR	N	YES	NO	UNK	<C-	>C-	<C-	>C-	<C-	>C-	<C-	>C-	
F04													37%
F05													36%
F06													37%
F07	1	100%	0%	0%					100%	0%	0%		30%
F08	1	0%	100%	0%	0%	100%		0%					
F09	4	100%	0%	0%					25%	75%			

TABLE 2.P.XII: FRESHMEN AND M 151, NORTH CAMPUS

YEAR		SATISFIED PRE-REQUISITE			STUDENTS WITHOUT PRE-REQUISITE				STUDENTS WITH PRE-REQUISITE				RET'N FOR FULL-TIME FRESHMEN
					RET'N FOR STUDENTS WITH		RET'N FOR STUDENTS WITH		RET'N FOR STUDENTS WITH		RET'N FOR STUDENTS WITH		
					GRADE		GRADE		GRADE		GRADE		
YEAR	N	YES	NO	UNK	<C-	>C-	<C-	>C-	<C-	>C-	<C-	>C-	
F04													69%
F05													67%
F06													75%
F07	61	54%	41%	5%	36%	64%	56%	69%	30%	70%	10%	78%	69%
F08	92	89%	10%	1%	33%	67%	33%	100%	39%	61%	44%	84%	
F09	77	94%	6%	0%	0%	100%			26%	74%			

» Table 2.P.XIII

- M 171 Calculus 1. The catalog description states the course "Includes the study of limits of functions, continuous functions, tangents and derivatives..."

TABLE 2.P.XIII: FRESHMEN AND M 171, NORTH CAMPUS

		SATISFIED PRE-REQUISITE			STUDENTS WITHOUT PRE-REQUISITE				STUDENTS WITH PRE-REQUISITE				RET'N FOR FULL- TIME FRESH- MEN
					RET'N FOR STUDENTS WITH		RET'N FOR STUDENTS WITH		RET'N FOR STUDENTS WITH		RET'N FOR STUDENTS WITH		
					GRADE		GRADE		GRADE		GRADE		
YEAR	N	YES	NO	UNK	<C-	>C-	<C-	>C-	<C-	>C-	<C-	>C-	
F04	52	83%	8%	10%	50%	50%	100%	50%	23%	77%	70%	85%	69%
F05	46	91%	7%	2%	33%	67%	100%	100%	12%	88%	40%	81%	67%
F06	59	76%	20%	3%	33%	67%	100%	88%	13%	87%	67%	92%	75%
F07	48	88%	13%	0%	17%	83%	100%	80%	29%	71%	75%	83%	69%
F08	95	88%	5%	6%	20%	80%	100%	75%	23%	77%	63%	80%	
F09	77	90%	8%	3%	17%	83%			23%	77%			

SELF-STUDY 2010

- » Tables 2.P.XIV and 2.P.XV
 - WRIT 101 College Writing I. The catalog description states the course "Introduces students to forms and processes of written communication appropriate to college-level audiences."

TABLE 2.P.XIV: FRESHMEN AND WRIT 101, SOUTH CAMPUS

YEAR		SATISFIED PRE-REQUISITE			STUDENTS WITHOUT PRE-REQUISITE				STUDENTS WITH PRE-REQUISITE				RET'N FOR FULL-TIME FRESHMEN
					GRADE		RET'N FOR STUDENTS WITH		GRADE		RET'N FOR STUDENTS WITH		
					<C-	>C-	<C-	>C-	<C-	>C-	>C-	>C-	
F04	9	44%	0%	56%					25%	75%	0%	100%	37%
F05	20	65%	15%	20%	0%	100%		67%	15%	85%	50%	73%	36%
F06	22	77%	0%	23%					29%	71%	40%	50%	37%
F07	29	62%	14%	24%	25%	75%	0%	0%	28%	72%	20%	46%	30%
F08	29	69%	7%	24%	0%	100%		0%	30%	70%	17%	71%	
F09	35	69%	0%	31%					21%	79%			

TABLE 2.P.XV: FRESHMEN AND WRIT 101, NORTH CAMPUS

YEAR		SATISFIED PRE-REQUISITE			STUDENTS WITHOUT PRE-REQUISITE				STUDENTS WITH PRE-REQUISITE				RET'N FOR FULL-TIME FRESHMEN
					GRADE		RET'N FOR STUDENTS WITH		GRADE		RET'N FOR STUDENTS WITH		
					<C-	>C-	<C-	>C-	<C-	>C-	>C-	>C-	
F04	170	85%	8%	7%	14%	86%	0%	58%	10%	90%	27%	78%	69%
F05	177	76%	11%	13%	15%	85%	0%	59%	10%	90%	31%	77%	67%
F06	176	85%	9%	7%	20%	80%	0%	67%	9%	91%	7%	80%	75%
F07	166	92%	4%	5%	17%	83%	0%	40%	9%	91%	31%	78%	69%
F08	202	91%	4%	5%	13%	88%	100%	57%	11%	89%	24%	75%	
F09	175	91%	2%	7%	33%	67%			13%	88%			

POLICY 2.3 CREDIT FOR PRIOR EXPERIENTIAL LEARNING

Montana Tech does not offer credit for prior experiential learning.

POLICY 2.4 STUDY ABROAD PROGRAMS

The study abroad programs available to Montana Tech students are described in Standard 2.G.12. A highlight of the program available to both undergraduate and graduate students is reproduced below.

Why not spend a semester in SWEDEN? Take advantage of the learning agreement between MT Tech and Lulea University of Technology in Lulea, Sweden, and open your mind and broaden your horizons. The learning agreement includes the exchange of both undergraduate and graduate students, faculty and scientific personnel, and the organization of conferences, seminars, and workshops.

Lulea has a population of about 70,000 and is located in the north-eastern part of the country. The city centre is on a peninsula, and water plays an important part in the lives of Lule inhabitants. The city has developed into a technological centre in the North of Sweden. The most important corner-stones of this development are metallurgy, education and research.

Lulea University offers nearly 200 courses in English in departments such as Business Administration and Social Sciences, Chemical and Metallurgical Engineering, Civil and Mining Engineering, Computer Science and Electrical Engineering, and Languages and Literature (please see the admissions website below for a complete list). You need about \$3000.00 to get you started with living expenses for approximately three months. In order to obtain an entry visa to Sweden, you must prove that you can finance your whole stay in the country.

The Swedish academic year comprises two semesters similar to ours and runs from the mid of August to mid-January and mid-January to the first week of June (does not include orientation). Student staying for Fall semester only, can do their exams before Christmas to be able to go home before Spring semester starts at home. Exchange students arriving in August are encouraged to join the annual orientation program planned for first year students. During this time, upper-level students present a complete program for all newcomers including orientation to student life and lots of parties. An intensive course in Swedish for beginners is offered free of charge to all exchange students during the orientation program.

POLICY 2.5 TRANSFER AND AWARD OF ACADEMIC CREDIT

Montana Tech transfer and award of academic credit policies are described in Standard 2.C.4. Board of Regents policy [301.5](#), found in the Montana Tech Catalog, details the procedure followed by Montana Tech when awarding transfer credit. The policy states:

"A. All college level courses from regionally accredited institutions of higher education will be received and applied by all campuses of the Montana university system (MUS), and by the community colleges, towards the free elective requirements of the associate and baccalaureate degrees.

NOTE: College level courses shall be defined as those courses that are applicable toward an associate of arts, associate of science or baccalaureate degree at their respective institution. The receiving institution will determine in advance of a student's enrollment which courses within an associate of applied science degree program will be credited toward a given associates or baccalaureate degree. In all cases, such courses shall not include remedial or developmental courses.

B. In relation to the major, minor, general education, distribution requirements, and free electives of the associate and baccalaureate degrees, all campuses of the MUS, and the community colleges, are authorized to determine the applicability of credits earned at regionally accredited institutions of higher education."

POLICY 2.6 DISTANCE DELIVERY OF COURSES, CERTIFICATE, AND DEGREE PROGRAMS

Distance delivery of courses at Montana Tech is described in Standard 2.G. As described in 2.G.1, a summary of distance delivery at Montana Tech is given by the following.

All of Montana Tech's distance delivery courses follow the same rules and procedures for implementation, instruction, and evaluation as all other courses offered for academic credit. See Standards 2.A, 2.B, and 2.C for the details of these processes. Montana Tech provides adequate resources for distance education. Some recent (over the last five years) developments include:

- » Creating and staffing the new position of Distance Learning Coordinator.
- » Forming an eLearning Advisory Committee at.
- » Purchasing Wimba, a collaboration tool, that includes Wimba Pronto
- » Building new high tech computer labs.
- » Giving every faculty member access to a Blackboard course shell.
- » Giving every faculty member access to Wimba.
- » Purchasing two new portable Tandberg units.

- » Training faculty in Blackboard and Wimba use.

(See Standard 5-IT and Standard 8 for additional details concerning Blackboard, Wimba, and the high tech computer labs.)

The types of distance education available through Montana Tech include:

- » Synchronous courses delivered online in real time through Wimba, Polycom, or Tandberg.
- » Asynchronous courses delivered anytime, anywhere through the Internet and Blackboard.
- » Blended courses, where distance students sit in on traditional courses via collaboration tools such as Wimba.
- » Hybrid courses which combine face-to-face instruction with computer-mediated instruction.
- » Live video conferencing through Wimba, Polycom, or Tandberg.

Over the last five years, 32%-34% of faculty have taught online courses at Montana Tech. Table 2.P.XVI gives a summary of online courses taught summer 04 through spring 09.

SELF-STUDY 2010

**TABLE 2.P.XVI: ONLINE COURSE SUMMARY
(SUMMER 2004 THROUGH SPRING 2009)**

Course	Title	Faculty	Adjunct	Avg Sem Enrollment	# Sem taught Online	1st Sem taught Online	Sem Most Recently taught Online	Type of Delivery
BIOL 2016	ANATOMY & PHYSIOLOGY I-	X		26	3	F06	F08	Internet
BIOL 2026	ANATOMY & PHYSIOLOGY II	X		21	3	S07	S09	Internet
BIOL 2706	BIOETHICS		X	20	1	S07	S07	Internet
BUS 0115	INTRO TO HUMAN RESOURCES	X		19	5	F04	F08	Internet
BUS 0956	BUSINESS ESSENTIALS	X		5	1	S09	S09	Internet
BUS 3446W	ENTREP & SM BUS MGT		X	17	1	F08	F08	Internet
BUS 4516	INTERNATIONAL BUSINESS		X	25	1	S09	S09	Internet
BUS 4936W	STRATEGIC MANAGEMENT	X		19	3	SU07	SU08	Internet
COMM 1046	ENGLISH COMPOSITION	X	X	26	15	SU04	S09	Internet
COMM 1216	PRINCIPLES OF SPEAKING	X		18	2	F07	F08	Internet
ENGR 3150	INTRO ENG COMP APPS	X		13	1	F07	F07	Internet
HCI 1016	INTRO HEALTH CARE INFOR	X	X	8	4	F04	F08	Internet & iLINK
HCI1106	THE LANG OF HEALTH CARE		X	32	2	SU04	F04	Internet
HCI1206	MEDICAL DATA & TERMS	X		17	1	S06	S06	Internet
HCI2156	HEALTH CARE FAC PROC	X	X	4	2	F06	F08	Internet & iLINK
HCI2256	DATA, INFO & KNOWLEDGE	X	X	7	3	F05	S09	Internet & iLINK
HCI2306	OVERVIEW OF HCI SYSTEMS	X	X	8	3	S05	S07	Internet
HCI3106	HEALTH CARE DEL IN US I	X		5	1	F06	F06	Internet
HCI3126	HEALTH CARE DEL IN US II	X	X	9	2	S05	S06	Internet
HCI3956	INDEPENDENT STUDY	X		1	1	S08	S08	Internet
HCI4206	ISSUES IN HCI	X		3	2	F07	S08	Internet
HCI4306	HCI PRACTICUM	X		6	2	S06	S09	Internet
HCS 3006	PROB SUBST ABUSE & ADDICT			8	12	F04	S09	Internet
HCS 3016	BIO/PSYCHO/SOCIAL ADDICT			6	10	F04	S09	Internet
HCS 3026	SUBSTANCE ABUSE PREVENTION			7	11	F04	S09	Internet
HCS 3400	PROGRAM EVAL IN PREVENTION			2	2	S07	S08	Internet
HCS 3530	SUBST ABUSE PREV THEORY & PRACTICE			1	1	F08	F08	Internet
HCS 3540	ADDICTION TREATMENT I			5	9	F04	S09	Internet
HCS 3550	INDIVIDUAL & GROUP ADDICT TRTMT			4	7	F04	F08	Internet
HCS 3956	SPECTOP: EXPLOR GAMBLING BEHAVIOR			2	2	F06	S07	Internet
HCS 4390	EXPL'N OF GAMBLING BEHAVIOR			3	4	F07	S09	Internet
HCS 4400	TREATMENT OF COMPULSIVE GAMBLING			1	1	F08	F08	Internet
HCS 4540	ADDICTION TREATMENT II			3	9	F04	S09	Internet
HCS 4956	SPECIAL TOPIC IN ADDICTION			2	5	F05	F08	Internet
HLTH 0101	INTRO TO HEALTH CAREERS		X	23	9	S05	S09	Internet
HLTH 0103	MEDICAL TERMINOLOGY	X	X	39	13	S05	S09	Internet
HLTH 0104	MEDICAL ETHICS		X	32	7	S06	S09	Internet
HLTH 0107	BASIC ANATOMY & PHYSIOLOGY	X	X	19	13	SU04	S09	Internet
HLTH 0110	NURSING FUNDAMENTALS	X	X	18	8	S06	S09	Internet
HLTH 0201	INTRO TO PHYS & BIO SVCS		X	26	6	F06	S09	Internet
HUMN 2216	AMERICAN HISTORY		X	40	1	F07	F07	Internet
HUMN 3016-W	PROFESSIONAL ETHICS	X	X	30	10	SU04	S09	Internet

HCS courses offered through University of Nevada-Reno.

**TABLE 2.P.XVI CONTINUED: ONLINE COURSE SUMMARY
(SUMMER 2004 THROUGH SPRING 2009)**

Course	Title	Faculty	Adjunct	Avg Sem Enroll't	# Sem taught Online	1st Sem taught Online	Sem Most Recently taught Online	Type of Delivery
I.H. 5076	STATISTICAL ANALYSIS		X	10	3	SU04	SU08	Internet
I.H 5136	INDUSTRIAL HYGIENE MANAGEMENT	X		11	2	F05	SU07	Internet
I.H 5156	NOISE	X		10	3	F04	F08	Internt & iLINK
I.H 5276	ADV INDUSTRIAL TOXICOLOGY	X		10	3	S05	S08	Internet
I.H 5286	SAMPLING & EVAN OF HEALTH HAZARDS	X		10	2	SU06	SU08	Internet
I.H 5426	PRINCIPLES OF EPIDEMIOLOGY		X	14	2	S05	F06	Internet
I.H 5476	STRATEGIES OF OCCUP EXPOS ASSESSM'T	X		14	2	S07	S09	Internet
I.H 5606	SYSTEMS SAFETY & PROC SAFETY MGT	X		13	2	SO6	S09	Internet
I.H 5626	RADIOLOGICAL HEALTH & SAFETY	X		5	2	F05	SU07	Internet
I.H 5676	INDUSTRIAL RESPIRATOR PROTECT	X		11	2	S05	208	Internet
I.H 5686	ADVANCED ERGONOMICS	X		14	3	F04	F08	Internet
I.H 5966	INDUSTRIAL HYGIENE REPORT	X		2	8	F04	209	Internet
I.H 5976	SPECIAL PROBLEMS	X	X	7	3	SU04	F05	Internet
I.T 0140	COMPUTER CONCEPTS	X		31	4	F04	S06	Internet
I.T 0147	WORD		X	16	4	F04	S06	Internet
I.T 0255	KEYBOARDING II	X		8	5	SU04	SU06	Internet
I.T 3036	ADV NOVELL ADMINISTRATION	X		23	1	S06	S06	Internet
MATH 0102	INTERMEDIATE ALGEBRA		X	24	4	F06	208	Internet
MATH 1326	ELEMENTARY STATS & PROBABILITY	X		14	3	F07	S09	Internet
MPEM 5010	ENTREPRENEURSHIP & ECON FEASIBILITY		X	11	2	SU05	SU07	Internet
MPEM 5020	PROJECT & ENGINEERING MGT		X	11	3	SU04	SU08	Internet
MPEM 5030	LEGAL ISSUES RELATED TO MPEM	X	X	13	3	S05	S09	Internet
MPEM 5040	FINANCIAL MGT FOR TECH ENTERPRISES	X		13	2	F05	F07	Internet
MPEM 5060	ADVANCED MGT SEMINAR	X		12	3	F04	S08	Internet
MPEM 5100	POLLUTION PREVENTION	X		8	2	F04	S08	Internet
MPEM 5120	APPLICATION & DESIGN IND EXPERIMENTS	X		6	3	F05	F08	Internet
MPEM 5130	HAZARDOUS WASTE MGT		X	7	3	SU04	F07	Internet
MPEM 5140	SYSTEMS SAFETY & MGT	X		12	1	S07	S07	Internet
MPEM 5150	INFORMATION TECH FOR MANAGERS		X	8	2	SU05	SU07	Internet
MPEM 5900	SPECIAL PROJECT	X	X	5	6	S05	S09	Internet
NURS 1016	INTRODUCTION TO NURSING	X	X	31	14	SU04	S09	Internet
NURS 4406	NURSING INFORMATICS		X	5	2	S05	F05	Internet
OSH 2266	SAFETY ENGINEERING & TECH II ES	X		2	1	S05	S05	Internet
OSH 3226	HAZARDOUS MATERIALS MGT ES	X		9	1	SU04	SU04	Internet
OSH 3236	FIRE PROTECTION - ES	X		4	1	F05	F05	Internet
OSH 3246	CONSTRUCTION SAFETY ES	X		3	1	SU05	SU05	Internet
OSH 3546	INDUSTRIAL TOXICOLOGY ES	X		2	1	F06	F06	Internet
OSH 4066	SMALL PARTICLE TECHNOLOGY	X		4	2	F04	F07	Internet
OSH 4216	INDUSTRIAL HYGIENE FUNDAMENTAL	X		12	2	F05	F07	Internet
OSH 4226	INDUSTRIAL HYGIENE CONTROL	X		7	3	S06	SU08	Internet
OSH 4546	ERGONOMICS	X		1	2	F04	F07	Internet
OSH 4896 W	OCCUPATIONAL SAFE & HLTH SR PROJECT	X		1	4	SU04	S08	Internet
OSH 4956	INDUSTRIAL HYGIENE CONTROLS	X		10	1	SU05	SU05	Internet

SELF-STUDY 2010

**TABLE 2.P.XVI CONTINUED: ONLINE COURSE SUMMARY
(SUMMER 2004 THROUGH SPRING 2009)**

Course	Title	Faculty	Adjunct	Avg Sem Enrollment	# Sem taught Online	1st Sem taught Online	Sem Most Recently taught Online	Type of Delivery
PSYC 1000	GENERAL PSYCHOLOGY		X	39	6	F06	S09	Internet
PSYC 2400	DEVELOPMENTAL PSYCHOLOGY		X	27	1	F04	F04	Internet
PSYC 3506W	SOCIAL PSYCHOLOGY		X	39	1	S05	S05	Internet
PTC 2506	WEBPAGE DESIGN	X		10	1	SU06	SU06	Internet
PTC 3896W	BUSINESS & PROFESSIONAL WRITING	X	X	10	10	SU04	F08	Internet
PTC 4426W	HISTORY, TECHN, & COMMUNICATIONS	X		7	1	S07	S07	Internet
PTC 4956	SPECIAL TOPIC: ETHICS FOR PROJ ENG MGT		X	1	1	S07	S07	Internet
RAD 0111	RADIOGRAPHIC PROCEDURES I	X	X	18	5	S05	S09	Internet
RAD 0121	RADIOGRAPHIC IMAGING PHYSICS	X	X	18	5	S05	S09	Internet
RAD 0122	RADIOGRAPHIC IMAGING II	X		15	4	F05	F08	Internet
RAD 0141	RADIATION PROTECTION	X		18	3	F06	F08	Internet
RAD 0211	RADIOGRAPHIC PROCEDURES II	X		15	4	F05	F08	Internet
RAD 0219	RADIOGRAPHIC IMAGING III	X		17	3	S07	S09	Internet
RAD 0245	RADIOGRAPHIC ANALYSIS	X		17	3	S07	S09	Internet
RAD 0312	SONOGRAPHIC PHYSICS & INSTRUM'N I		X	3	1	S06	S06	Internet
RAD 0313	SONOGRAPHIC INTERPRETATION I		X	3	1	F06	F06	Internet
RAD 0322	SONOGRAPHIC PHYSICS & INSTRUM'N II		X	2	1	S07	S07	Internet
RAD 0323	SONOGRAPHIC INTERPRETATION II		X	2	1	S07	S07	Internet
RAD 0333	SONOGRAPHIC INTERPRETATION III		X	2	1	SU07	SU07	Internet
SOCS 1746	INTRO TO SOCIOLOGY		X	27	9	SU0R	S09	Internet
T.C. 5376	ETHICS PROSEMINAR		X	2	1	S09	S09	Internet

GLOSSARY OF ABBREVIATIONS

Abbreviation	Term
ABET	Accreditation Board for Engineering and Technology
ACS	American Chemical Society
ARRT	American Registry of Radiologic Technologists
AS	Associate of Science
AAS	Associate of Applied Science
ASA	American Statistical Society
ASMT	Associated Students of Montana Tech
ASN	Associate of Science in Nursing
BS	Bachelor of Science
CAS	Certificate of Applied Science
CLSPS	College of Letters, Sciences, & Professional Studies
CNA	Certified Nurse Assistant
COT	College of Technology
CRC	Curriculum Review Committee
FTE	Full Time Equivalent
GRA	Graduate Research Assistantship
GTA	Graduate Teaching Assistantship
HCI	Health Care Informatics
HPER	Health, Physical Education & Recreation
IACBE	International Assembly for Collegiate Business Education
IACET	International Association for Continuing Education and Training
IIP	Individualized Interdisciplinary Program
IMS	Interdisciplinary Master's of Science
MAA	Mathematical Association of American
MAPP	Measure of Academic Proficiency and Progress
M&ME	Metallurgical & Materials Engineering
MUS	Montana University System
NCLEX-RN	National Council Licensure Examination for Registered Nurses
NIASE	National Institute for Automotive Service Excellence
SCHR	Student Credit Hours
SGID	Small Group Instructional Diagnosis

SELF-STUDY 2010

GLOSSARY OF ABBREVIATIONS (CONTINUED)

Abbreviation	Term
SME	School of Mines & Engineering
SSI	Student Satisfaction Inventory
SUB	Student Union Building
URP	Undergraduate Research Program
VCAAR	Vice Chancellor for Academic Affairs and Research
VTEM-CBA	Vocational Technical Educators of America-Collective Bargaining Agreement

STANDARD 2A EXHIBITS

- G.I Montana Tech Catalog
- G.II BOR Policy and Procedures
- G.III SSI results
- 2.A.I Departmental self-studies
- 2.A.II Montana Tech's course numbering matrix
- 2.A.III Examples of capstone/senior design projects.
- 2.A.IV Examples of papers from designated writing courses
- 2.B.I Summary of student evaluation of courses
- 2.B.II Examples of SGID
- 2.B.III Chemistry course pass-rate analysis. Math placement analysis.
- 2.B.IV MAPP exam results
- 2.B.V Program placement rates
- 2.B.VI Program graduation rates
- 2.B.VII Examples of Alumni surveys
- 2.B.VIII Examples of Employer surveys
- 2.B.IX FE exam committee report
- 2.B.X Placement rules for Math and English
- 2.B.XI Examples of graduation exit interviews
- 2.C.I MAPP user's guide
- 2.C.II New faculty orientation packet
- 2.C.III Placement rates for two year degree graduates.
- 2.D.I Educational objectives for graduate programs (draft).
- 2.G.I Agreement between Montana Tech and Lulea University

S STANDARD 3 - STUDENTS



STANDARD 3.A - PURPOSE AND ORGANIZATION

Student programs and services support the achievement of the institution’s mission and goals by contributing to the educational development of its students. Student programs and services are consistent with the educational philosophy of the institution. The institution provides essential support services for students, regardless of where or how enrolled and by whatever means educational programs are offered.

3.A.1 The organization of student services is effective in providing adequate services consistent with the mission and goals of the institution.

Montana Tech’s Student Services Organization provides academic and support services as part of Montana Tech’s mission to meet the changing needs of society. Tech’s mission focuses on supplying knowledge and education through a strong undergraduate curriculum, which is augmented by research, graduate education, and by service. Under the primary leadership of the Vice Chancellor of Development and Student Services - in collaboration with both Academic Affairs and with Administration & Finance - a coordinated student centered approach is in place to provide services. Figure 3.A.1 shows the structure of Montana Tech’s Student Services Organization as it assists students at both the North and the South Campuses.

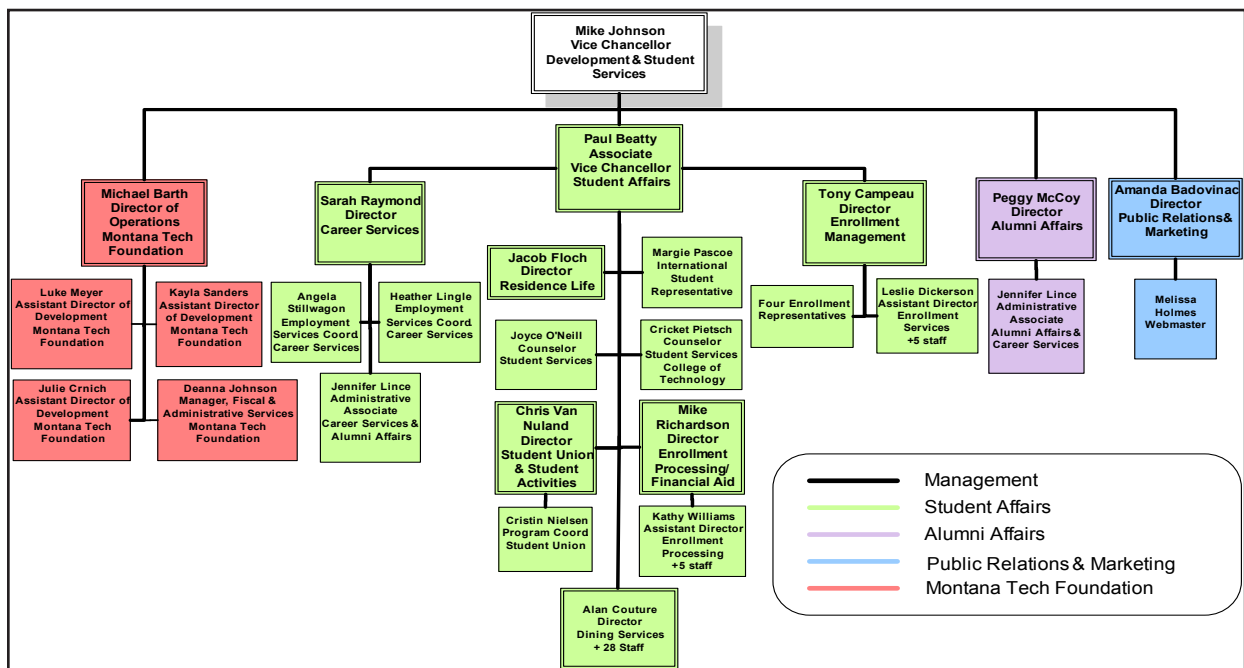


FIGURE 3.A.1: STUDENT SERVICES ORGANIZATIONAL CHART

SELF-STUDY 2010

Student Services was reorganized to provide more focused and consistent services to Tech students. The structure found above was put into place February of 2008. Significant changes that occurred during this reorganization are as follows:

- » The position of Associate Vice Chancellor for Student Services was created to manage the entire student services organization. The position was filled with a senior employee from Montana Tech, who formerly served solely as the Dean of Students.
- » The Office of Enrollment Services was created to handle all of student traffic relative to admissions, registrar functions, and financial aid. In essence, this one-stop-shop will serve the face-to-face needs of our students for nearly all of their requests.
- » The Office of Enrollment Processing was created to handle the back-office functions of enrollment management. This office is responsible for financial aid and student employment processing, catalog and schedule preparation, prospective student mailings, student academic progress reporting, and many other non face-to-face interactions with students. (See Exhibit 3.A.I: [Enrollment Services/Processing Organizational Chart.](#))

The student services organization includes:

Recruiting

Four fulltime recruiting representatives promote the college to potential undergraduate, graduate, and transfer students:

<http://www.mtech.edu/onestop/admission/counselors/WhichCampus.asp>

Counseling

Two fulltime licensed therapists provide mental health, personal counseling, and coordinate disability services:

http://www.mtech.edu/student_life/counseling/

International Students

The international student advisor works with foreign students to maintain proper immigration status and provides support throughout their academic experience at Montana Tech: http://www.mtech.edu/student_life/international/

Student Union/Activities

The Student Union, the hub for campus information and activities, is staffed by the Director of the Student Union/Activities, a Campus Scheduling Officer, and support personnel: www.mtech.edu/sub

Residence Life

The Director of Residence Life and support staff assist students in all facets of residential living: http://www.mtech.edu/residence_life/

Career Services

The Career Services Director and staff assist students and alumni with career exploration and preparation, as well as assist employers with connecting to students and the campus: <http://www.mtech.edu/career/>

Public Relations & Webmaster

The Public Relations Director is responsible for publications, press releases, multimedia, website, and advertising policies. The Webmaster is under the umbrella of public relations: <http://www.mtech.edu/pr/>

Alumni Affairs

The Director of Alumni Affairs and support staff maintain the bridge between alumni and the college: <http://go.mtech.edu/Page.aspx?pid=395>

Student Health Services

The Health Center is staffed by a physician two hours a day and a nurse four hours a day, Monday through Friday: http://www.mtech.edu/student_life/healthcenter.htm

Dining Services

The Director of Dining Services, management, and support staff are dedicated to providing a variety of nutritious, well-balanced meals at reasonable prices: (http://www.mtech.edu/dining_services/)

3.A.2 Student services and programs are staffed by qualified individuals whose academic preparation and/or experience are appropriate to their assignments. Assignments are clearly defined and published. The performance of personnel is regularly evaluated.

The student services staff is made up of highly qualified and talented professionals who provide a variety of services. (See Table 3.A.I: Staff Profile and Exhibit 3.A.II: *Student Services Résumés*.) Position descriptions are clearly defined and follow University Human Resource policies and procedures. Evaluations of personnel occur annually.

Table 3.A.I Student Services staff profiles demonstrate the academic and/or work experience that prepared the professional staff for their assignments.

SELF-STUDY 2010

TABLE 3.A.I: STUDENT SERVICES STAFF PROFILE

STUDENT AFFAIRS STAFF PROFILE				
	PROFESSIONAL	SUPPORT	STUDENT	OTHER
FEMALE	11	37	16	
MALE	8	10	29	
DEGREE				
PhD, EdD				
MD, JD, MSW	3			
MA, MS	6	4		
BA, BS	9	6		
AA, AAS, Certificate, etc.		4		
YEARS EXPERIENCE IN FIELD				
None		1		
Less than 5	2	7		
5 – 10	7	12		
11 – 15	5	14		
16 – 20	3	6		
More than 20	2	7		
FULL-TIME				
9/10 months				
12 months	19	33		
PART-TIME				
9/10 months		14		
12 months				

3.A.3 Appropriate policies and procedures for student development programs and services are established. The objectives of each operating component are compatible and support the goals of student services.

The Student Services Organization adheres to the policies and procedures of Montana Tech, The University of Montana, and to the Montana Board of Regents and Montana Code Annotated. Montana Tech's policies and procedures are further guided by NAIA athletic rules, the American Association of Collegiate Registrars and Admissions Officers, and by other professional organizations. These policies are published in the Academic Catalog and Student Handbook. (See Exhibits 3.A.III: *2009/2010 Montana Tech Catalog* and 3.B.I: *2009-2010 Student Handbook & Calendar*.)

Additional documentation can be found in the various job manuals which apply to each area of student services. Each individual uses a "balanced scorecard" to set annual/individualized goals and objectives which support the overall strategic plan of the institution. These individual scorecards are then used to evaluate employee performance and alignment with the overall strategic plan. (See Exhibit 3.A.IV: *Balance Scorecards/Sample Evaluations*.)

3.A.4 Human, physical, and financial resources for student services and programs are allocated on the basis of identified needs and are adequate to support the services and programs offered.

Allocation of resources to student services is adequate to maintain programs and services, but student enrollment has outgrown some campus facilities. A scarcity of resources is a fundamental economic principle that certainly applies to Montana Tech. Therefore, attracting and retaining highly-qualified staff is an on-going challenge for this institution. Despite these challenges, Montana Tech maintains an excellent staff and remains committed to providing excellent service to its students. The past four years, capacity of the two residence halls has been exceeded so that some students had to be housed in off-campus housing units. In addition, the HPER (gym) complex is stretched to meet the demands of both athletics and campus recreation. Montana Tech's auxiliary facilities (apartment housing, Prospector and Centennial Halls, the Student Union, Bookstore, health services, and parking) have a system in place (See Exhibit 3.A.V: *Auxiliary Projects & Planning*) to continually monitor and review major facility maintenance issues. State funding for departments within student services is roughly only 9.6% of the state allocation of the University as a whole.

SELF-STUDY 2010

STANDARD 3.B - GENERAL RESPONSIBILITIES

The institution provides student services and programs based upon an assessment of student needs, provides adequate support for the services offered to achieve established goals, and adopts, publishes, and makes available policies that are accurate and current.

3.B.1 The institution systematically identifies the characteristics of its student population and students' learning and special needs. The institution makes provision for meeting those identified needs, emphasizing students' achievement of their educational goals.

Beginning with the recruiting cycle and continuing beyond graduation, Montana Tech gathers and analyzes information on individual student needs and on demographic trends. Every semester, Enrollment Services compiles and disseminates a 3rd Week Enrollment Summary & OCHE (Office of the Commissioner of Higher Education) Enrollment Reports. (See Table 3.B.I.) This document reports student characteristics such as: international students, male/female ratios, transfer students, special admit types (Jump Start & WUE), as well as overall headcount and FTE. This data is then used to drive institutional decision making and programming.



Notes for Table 3.B.I:

*Fall 2002-2004 COT enrollment numbers are skewed significantly downward due to COT nursing program becoming an undergraduate N. Campus degree (OVER 200 students to N. Campus Fall 2002)

**Total First Time Freshman category revised in 2006 to match OCHE Report A/Part B. Early Admit (Jump Start/Running Start) now added to the total First Time Freshman numbers.

***2009 In-State and Non-Resident status (including Wue, X and D) are defined by fee status. Non-Resident + Resident is total headcount. Prior to Fall 2009, In-state, Non-resident, and Foreign categories were defined by a mixture of geographic origin and fee status.

MONTANA TECH

TABLE 3.B.I ENROLLMENT REPORT
MONTANA TECH - ENROLLMENT SERVICES OFFICE
ENROLLMENT COMPARISON FALL 2000-2009 END OF 3RD WEEK

	FALL 2000	FALL 2001	FALL 2002*	FALL 2003*	FALL 2004*	FALL 2005	FALL 2006	FALL 2007	FALL 2008	FALL 2009	DIFF (NEG)
MONTANA TECH											
TOTAL FTE (CT+UG+GR)	1889	1877	1929	2023	1965	1941	2076	2140	2170	2438	268
EARLY ADMIT (JUMP START)	60	69	65	67	92	176	120	103	123	144	21
TRAD. FIRST-TIME FR	364	298	312	315	332	338	394	383	433	411	(22)
NON-TRAD. FIRST-TIME FR	64	64	73	80	67	60	69	62	68	80	12
**TOTAL FIRST-TIME FR	488	431	450	462	491	574	583	548	624	635	11
TOTAL HEADCOUNT	2067	2086	2161	2232	2188	2234	2357	2347	2402	2694	292
FULL-TIME	1712	1702	1764	1825	1798	1771	1885	1920	1952	2232	280
PART TIME	355	384	397	407	390	463	472	427	450	462	12
MALE STUDENTS	1134	1146	1210	1217	1204	1237	1326	1381	1444	1624	180
FEMALE STUDENTS	933	940	949	1015	984	997	1031	966	958	1070	112
UNKNOWN GENDER STUDENTS	0	0	2	0	0	0	0	0	0	0	0
FOREIGN STUDENTS	70	73	64	67	62	73	87	127	164	209	45
RESIDENT FEE STATUS***	1798	1814	1871	1958	1921	1937	1998	1963	1968	2217	249
NON-RES FEE STATUS INCL W/X/D***	269	272	290	248	267	291	301	384	417	477	60
WUE	126	141	117	123	121	127	134	133	107	126	19
EXCESS CAP. (NEW FALL 03)				15	20	37	42	58	70	63	(7)
DISTANCE (NEW FALL 03)				11	14	15	13	20			0
TRANSFER	94	123	149	153	138	148	173	181	159	233	74
NORTH CAMPUS											
EARLY ADMIT (JUMP START)	60	69	65	67	92	175	120	101	121	141	20
TRAD. FIRST-TIME FR	310	253	281	273	271	265	305	285	332	298	(34)
NON-TRAD. FIRST-TIME FR	22	21	45	47	28	19	28	19	26	29	3
**TOTAL FIRST-TIME FR	392	343	391	387	391	459	453	405	479	468	(11)
UG + GR HEADCOUNT	1666	1660	1900	1936	1869	1813	1928	1900	1980	2187	207
# MT COUNTIES (INCLUDES BSB)	53	53	54	55	52	50	50	52	50	51	1
# STATES (EXCLUDING MT)	33	31	34	37	36	36	32	33	36	34	(2)
# FOREIGN COUNTRIES	17	14	13	12	16	14	18	19	17	15	(2)
WUE STUDENTS	123	135	113	116	112	120	129	125	102	120	18
EXCESS CAPACITY (NEW FALL 03)				13	16	35	34	47	59	54	(5)
DISTANCE (NEW FALL 03)				11	14	15	13	20			0
ENGINEERING	776	764	777	768	737	756	823	898	976	1060	84
GRADUATE STUDENTS	89	81	96	90	99	93	85	104	109	134	25
SOUTH CAMPUS											
EARLY ADMIT (JUMP START)	0	0	0	0	0	1	0	2	2	3	1
TRAD. FIRST-TIME FR	54	45	31	42	61	73	89	98	101	113	12
NON-TRAD. FIRST-TIME FR	42	43	28	33	39	41	41	43	42	51	9
**TOTAL FIRST-TIME FR	96	88	59	75	100	115	130	143	145	167	22
TECHNICAL (CT) LEVEL HEADCOUN'T	401	426	261	296	319	421	429	447	422	507	85
# MT COUNTIES (INCLUDES BSB)	23	20	22	24	27	26	32	31	31	40	9
# STATES (EXCLUDING MT)	7	8	7	12	14	10	13	11	14	15	1
# FOREIGN COUNTRIES	1	2	0	0	0	0	1	2	0	1	1
WUE STUDENTS	3	6	4	7	9	7	5	8	5	6	1
EXCESS CAPACITY (NEW FALL 03)				2	4	2	8	11	11	9	(2)
DISTANCE (NEW FALL 03)				0	0	0	0	0			0

SELF-STUDY 2010

Both Montana Tech and the Montana Tech's College of Technology report Integrated Postsecondary Education Data System (IPEDS) surveys to the National Center of Education Statistics (NCES). Student characteristics identified by these surveys include, but are not limited to: enrollment and degrees conferred by gender, ethnicity, field, and level; first year retention; graduation rates; and financial aid awards. Student characteristics are also identified in data collected from the Free Application for Federal Student Aid (FAFSA). All students applying for federal financial aid are required to complete the FAFSA. Currently, financial aid processing is incorporated into the functions of the Enrollment Processing Office.

The Academic Standards and the Financial Aid committees hear appeals from students not making satisfactory academic progress. A student who has been placed on academic suspension or financial aid suspension may submit a written appeal, with appropriate documentation attached, either to the Academic Standards Committee or to the Financial Aid Committee. The committee reviews the mitigating or unusual circumstances listed in the appeal, how the student is making good progress toward earning his/her degree, any supporting documentation provided, and the student's entire academic record. The committee then either denies or grants the appeal. If the appeal is granted, the committee may impose conditions, such as limiting the number of credits or what classes the student can take.

In Fall 2008, the Advising & Retention Committee helped students achieve their educational goals through an enhanced mid-term evaluation process. After receiving feedback on the process, another reporting date was added. The new and current mid-term intervention program requires that faculty report early-term (20th day of class) as well as mid-term (40th day of class) grades for students that are either freshmen or College of Technology (COT) students. Additionally, any student taking a first-year math or chemistry class will have their grades for that class reported. After the early-term (20th day) reports are filed, notification is sent to any student who has below a C- in any class notifying them of their status and the resources available to help them improve their grades. After the mid-term (40th day) reporting, advisors and departmental staff are required to follow-up with advising appointments for any student who has below a C- in any class.

Students who can document special needs are assisted by the Student Life counselors who provide disability services. The Disability Services website is http://www.mtech.edu/student_life/disability/. Montana Tech is not barrier-free and special need accommodations are made to move classes to accessible rooms so persons with disabilities have access to facilities. The campus "Access Committee" consisting of students, faculty, and staff advises the Chancellor on matters related to access.

Special need accommodations also include working with the faculty on extended time for exams, note takers, on Video Remote Interpreting (VRI) for deaf students, and on large computer video monitors for low vision students. For example, in Spring 2006, Montana Tech was the first institution in the state to use VRI to provide live interpreter accommodations to two deaf students, one on each campus. Below is a specific example

of that special needs accommodation, a joint effort with the Information Technology Department, also referenced in the Information Technology section, Standard 5.B.2.IT.

CLOSING THE LOOP

Special Need Accommodations

Video Remote Interpreting (VRI) Services provided to Montana Tech's hearing-impaired students. Via an internet video link, a video interpreting service provider (SignOn) is accessed in Seattle. This eliminates the need for an in-person interpreter on site. A wireless microphone is attached to Montana Tech's instructor whose audio is received by the remote interpreter. Then the signed interpretation video is sent back to the hearing impaired student's notebook computer. Interaction with the instructor and student is through a webcam attached to the student's notebook computer. To communicate with the instructor, the student signs via video-communication to the remote interpreter. The interpreter then voices the translation back to the instructor and class.

Network Services worked to lighten the weight of the equipment by eliminating active devices and provisioning wireless connectivity through a privately secured band. This allows the hearing impaired students freedom to locate as desired in the classroom without having to plug into a wired network port.

Educational needs are identified during the recruiting and admissions process. ACT/SAT scores, high school GPA, Compass assessment (instrument used to assess placement of students in appropriate math and writing classes), and high school courses are all used to help students enroll in programs and courses that best fit their level of preparedness.

Once enrolled, the Enrollment Processing Office monitors satisfactory academic progress to determine if individual students are making timely progress on a degree. Student trends are monitored and then this data drives appropriate campus policy and follow-up procedures.

CLOSING THE LOOP

Over the past few years, faculty, academic committees, and student services offices narrowed down problems in academic performance in two major areas: math preparedness and student engagement in learning. Both areas were inextricably interrelated between academic affairs and student services. To address these issues and to ensure student success and satisfaction, Montana Tech implemented various major and minor systemic and programmatic changes. These changes are listed below.

Closing the Loop: Math Preparedness

Because Montana Tech raised admission standards on baccalaureate programs to include an ACT math score of 22 or equivalent, the issue of math preparedness became more significant. Therefore, Tech realigned math placement of students on the basis of previous student success and standardized scores; added a Pre-Calculus course to the suite of available math courses; and even developed a Baccalaureate-Prep certificate for the College of Technology, to help students who did not meet baccalaureate admissions standards prepare for undergraduate course work.

Closing the Loop: At-Risk Students

When an unusually high number of students began having problems in select areas, such as math, chemistry, psychology, and writing, Montana Tech developed a new at-risk/mid-term process. It formally tracks student performance on two separate occasions: first, early in the semester; and then later at mid-term. As part of the two-stage intervention process, any student showing early on, unsatisfactory performance (below C-), in even one class, is proactively contacted by faculty and/or advisors. During the second intervention, one-on-one conversations with troubled students help them identify causes of the unsatisfactory performance and provide available resources for an appropriate resolution.

CLOSING THE LOOP (CONTINUED)

Engineering and Science Preparedness

It should be no surprise that the largest departments at Montana Tech are the engineering departments followed by the science departments. However, there was an academic gap between student preparedness and the demands of the freshman engineering and science curriculum. In response, Montana Tech hired a new North Campus Learning Director charged with developing an engineering and science curriculum for students unprepared for calculus and/or college-level science courses. The Foundations of Engineering and Science Program will be offered Fall 2010.

Transferability

Montana Tech also recognized that some Tech students would transfer elsewhere in the Montana University System (MUS). To ease transferability to other MUS institutions, Montana Tech participated in developing a new, system-wide course numbering system created for all campuses of the MUS. As described in the MUS Transfer Guide website (<http://msudw.msu.montana.edu:9030/wfez/owa/musxfer.-CCN-MAIN>) all courses deemed to be equivalent must possess the same course prefix, number, and title; and such courses will directly transfer on a one-to-one basis with equivalent courses at the receiving institution. Please see Exhibit 2.A.II, Montana Tech's course and numbering matrix; which is the current course numbering matrix specific to Montana Tech.

SELF-STUDY 2010

Montana Tech also noted a need to expand its educational offerings for international students based on the needs of our international population. In Fall 2009, 209 international students from 14 countries were enrolled at Montana Tech to mark a 27% increase over the previous year and to represent the largest international student population in Tech's history. Figure 3.B.1: International Student Enrollment by Country of Origin depicts the growth of the international student population. Students from Canada (108) and Saudi Arabia (80) represent 89% of the international population.

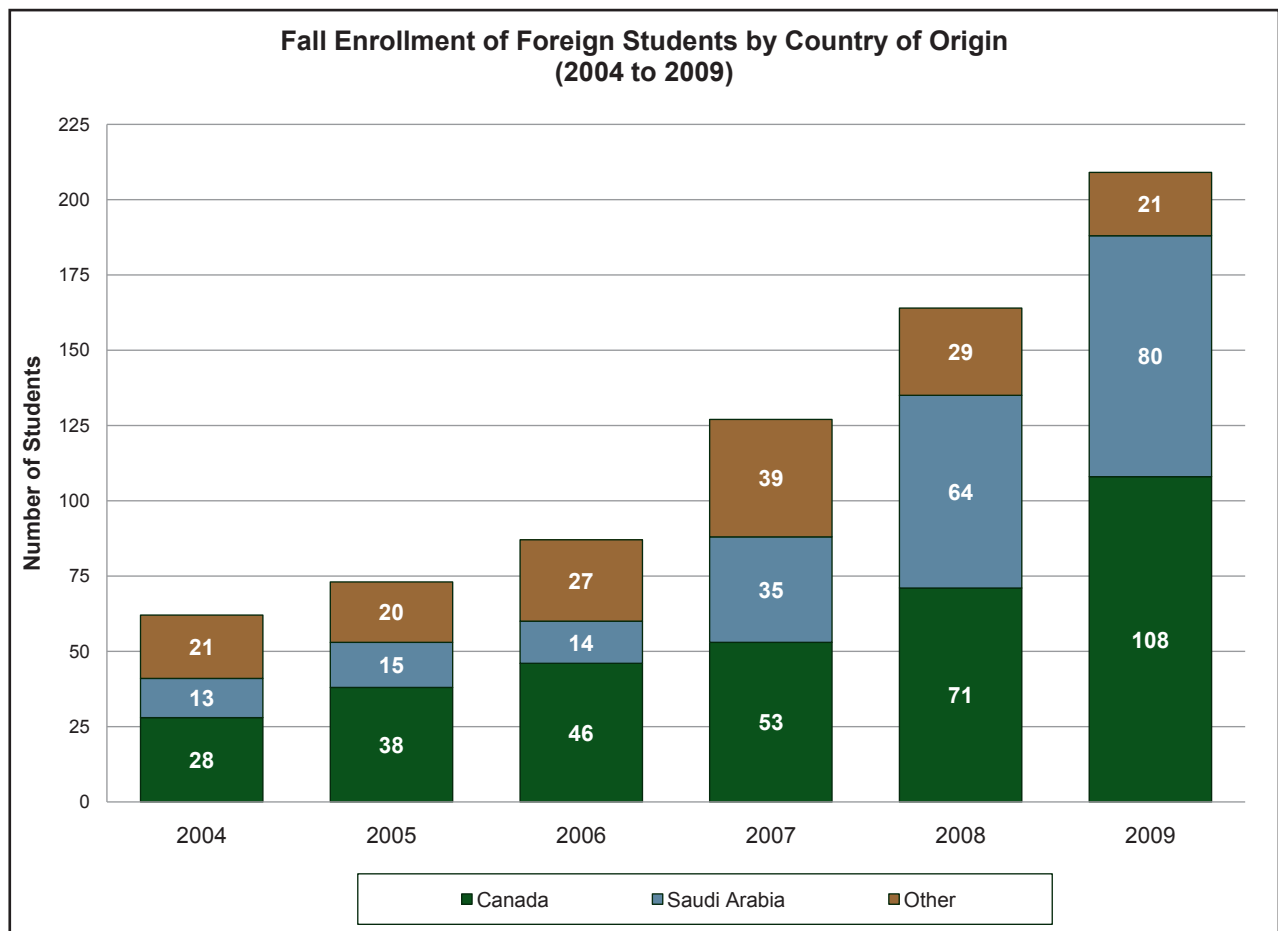


FIGURE 3.B.1: INTERNATIONAL STUDENT ENROLLMENT BY COUNTRY OF ORIGIN

The growth of Canadian students is attributed to: long standing articulation agreements with Northern Alberta Institute of Technology (NAIT) and Southern Alberta Institute of Technology (SAIT); the strong value of the Canadian dollar; the Advantage Scholarship (allowing students from Alberta and majoring in specific programs to attend at a reduced rate); and changes in the Petroleum Industry (most international students are studying petroleum engineering).

Additionally, Montana Tech has made a concerted effort to: recruit Canadian students with increased visits to NAIT and SAIT; update articulation agreements; and

expand the recruit-a-friend program (in which current students are given incentives to return to their previous school to share their experience about Montana Tech).

The increase of Saudi students is attributed to Tech's relationship with the ARAMCO Services Company and the scholarship offered by the Royal Embassy of Saudi Arabia Cultural Mission. ARAMCO annually sponsors an average of 25 students; primarily in Petroleum Engineering but has expanded placement of students to Metallurgical Engineering, Geological Engineering, Geophysical Engineering and Occupational Safety and Health. The significant growth of Saudi students can also be attributed to the current Cultural Mission Scholarship recipients encouraging their friends and family to apply.

The International Student Office provides support and assistance for Tech's international students. In 2005, Montana Tech established a partnership with The University of Montana English Language Institute (ELI) to provide English for students admitted to Tech without language proficiency. These students first attend the Missoula-based program and then transfer to Tech after they complete English proficiency, which is required to be unconditionally admitted.

CLOSING THE LOOP

International Student Retention

Middle Eastern students, representing a significant demographic increase (See Figure 3.B.1), requested that English training be offered on campus for spouses. Without an on campus ELI Program, some students were exploring options of transferring to other colleges. As a result, Montana Tech worked with The University of Montana to provide English language training on campus. In Spring 2009, Montana Tech offered a pilot English Language Program for Level One English to international student spouses.

3.B.2 The institution provides opportunities for students to participate in institutional governance. Faculty are involved in the development of policies for student programs and services.

The student governing body, the Associated Students of Montana Tech (ASMT), annually elects a student body president, vice president, and treasurer. Ten elected senators comprise the full student government. The Senate includes one representative from the COT. ASMT meets bimonthly, usually at 7:00 A.M., to minimize meeting conflicts. The duties and responsibilities of the officers are clearly articulated in ASMT's

SELF-STUDY 2010

Constitution, revised May 2007. All registered students of Montana Tech enrolled for one (1) or more credits are members of the association. (See Exhibit 3.B.II: [ASMT Constitution](#).)

A faculty member is chosen each year by the student leadership and serves as an advisor to ASMT. This faculty member provides a guiding hand to the group and serves as the conduit for faculty-to-student government activities. An advisor from Tech's administration also advises and serves as a conduit to the administration.

The purpose of ASMT is to advance the interest and welfare of Montana Tech students and to foster harmony among the interconnected parties within the University. ASMT strives to ensure a full social and academic life for all students within its organizations, publications, clubs, school functions, and activities. ASMT is charged with the fair and equitable distribution of student fees, organizing and planning activities on campus, with student publications, campus recreation, and with placing students on campus committees so that all decisions include student input.

3.B.3 Policies on students' rights and responsibilities, including those related to academic honesty and procedural rights, are clearly stated, well publicized, readily available, and implemented in a fair and consistent manner.

Policies on student's rights and responsibilities are published in the student handbook, in the college catalog, and in some course syllabi. The student handbook is published every year and is distributed at orientation. It includes a yearly planner so that students are more likely to keep the publication in-hand throughout the year. (See Exhibit 3.B.I: [Student Handbook](#).)

A student judiciary board, appointed by ASMT, is used to hear referred student conduct issues. Any individual who feels his or her rights have been infringed upon by student conduct may process a referral to Montana Tech's Community Expectation Program. The student judicial board hears an average of three to five cases per year. Physical assaults, harassment, campus threats, drug/alcohol, and network security violations are some examples of prior hearings. (See Exhibit 3.B.III: [Community Expectations Program](#).)

The Academic Standards Committee, chaired by the Vice Chancellor for Academic Affairs, hears a yearly average of 35 formal academic suspension appeals, some grade appeals, and some cases involving academic dishonesty.

3.B.4 The institution makes adequate provision for the safety and security of its students and their property. Information concerning student safety is published and widely distributed.

Students feel the campus is safe and secure, and Montana Tech is committed to providing a safe working and learning environment for students, faculty, and staff. Figure 3.B.2 depicts student responses on the Noel-Levitz Student Satisfaction Inventory (SSI) surveys. Students consistently report above national averages compared to four-year public institutions because they feel the campus is safe and secure.

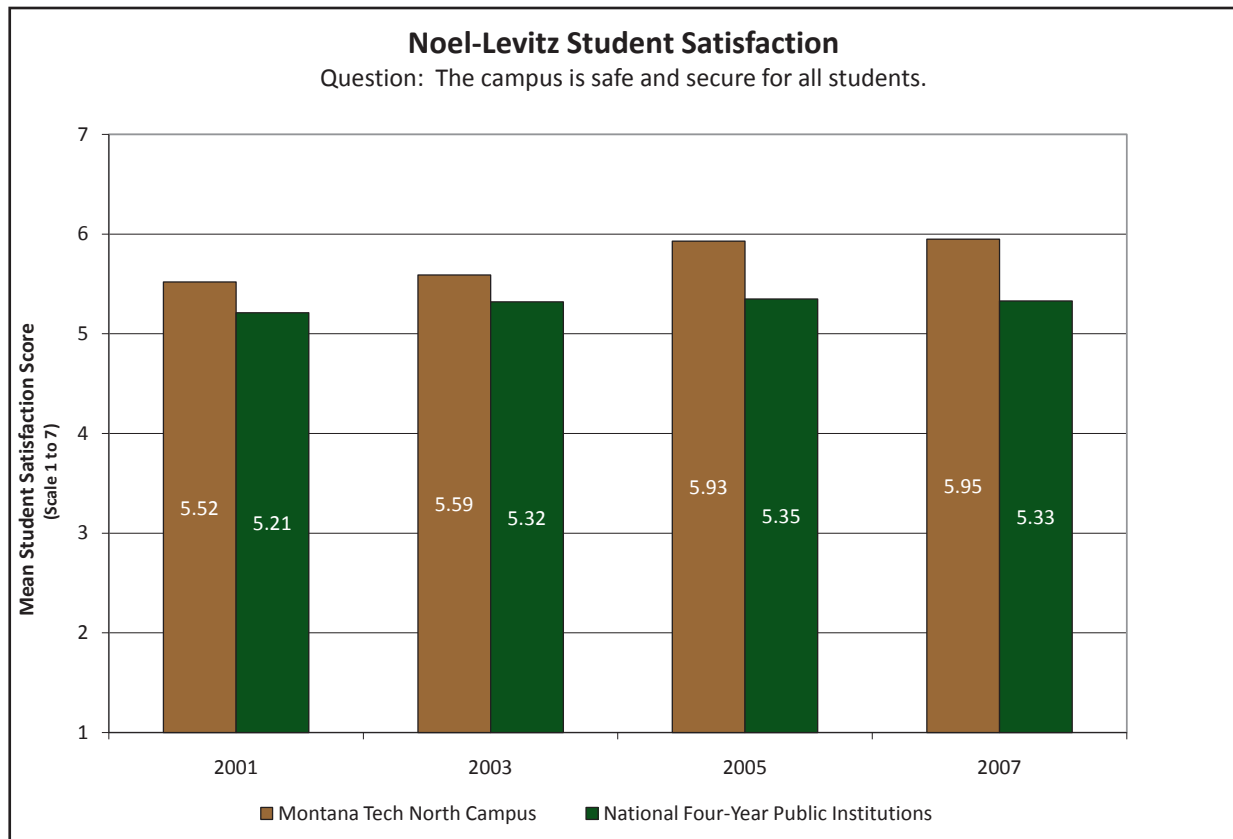


FIGURE 3.B.2: STUDENT SATISFACTION SURVEYS

The Safety Committee, composed of faculty, staff, and students, obtained funding for several safety improvements including the purchase of Automated External Defibrillators (AED), some additional exterior lighting for safety and security, for changing the type of locks on classroom doors, and for a new outdoor siren/PA system. In Summer 2007, over \$590,593 was spent on a fire suppression sprinkling system in apartment housing. Most recently, two driver feedback radar signs were placed on the main street through campus to reduce speeding on campus. The signs were operational in Summer of 2009.

All students who are enrolled in a lab where hazardous materials are used or where a hazardous environment exists are required to do online lab safety training every semester. The program is run through Blackboard, and instructors require the students to complete the training and pass a test with a 90 percent before they are allowed to work in the laboratory. Records are maintained in the Environmental Health & Safety Office.

Emergency Response

Montana Tech publishes the “Montana Tech Emergency Plan Instructions: What You Need to Know NOW” in the beginning of the Student 2009-2010 Handbook and Calendar (page 5). In the section immediately following the calendar section, there are

SELF-STUDY 2010

some additional sections regarding safety and security. The campus speed limit is noted (page 109); Campus Security (page 122); Emergency Response contact information (page 126); Evacuation Instructions (page 136); Montana Tech Alcohol Policy (page 141); Drug Free Workplace Policy (page 144); Gun Policy (page 145); Sexual Harassment (page 145); and finally the Annual Security Report (page 150). (See Exhibit 3.B.IV: [Montana Tech Safety Policy](#), Exhibit 3.B.V: [Campus Emergency Action and Crisis Protocol Manual](#) and [Student Life Programs Emergency Procedures Manual](#).)

Montana Tech runs evacuation drills at the beginning of every Fall semester for all buildings on campus and once a semester for the dormitories. An email notification is sent to faculty, staff, and students at the beginning of the semester to remind them of the protocol and procedures for evacuations. Signs are posted in all buildings to indicate the location of the assembly area for that particular building.

To make buildings more secure, Tech changed locks on classroom doors so they can be locked from the inside. For classroom doors that have panic hardware, Tech is exploring ways to provide a means for locking the doors.

Tools added to the emergency notification plan include an outdoor siren/PA system which will be used as an emergency notification for those outdoors, as well as a means to declare an “all clear” when a building has been evacuated; a computer notification system, (NetSupport Notify) whereby computer users will observe an emergency message that pops up on their screens; and a text messaging system whereby campus constituents can subscribe and be notified via a text message when an emergency situation exists. The campus has access and will use Butte-Silver Bow’s “Reverse 911” system for emergency notification to campus landline phones.

To help the Butte-Silver Bow Fire Department sweep buildings when an evacuation has occurred, Montana Tech has installed “Knox-Box Rapid Entry Systems” on both residence halls and on the three apartment housing units. Each Knox Box contains a master key for the building, allowing emergency personnel access to all parts of the building.

Montana Tech’s Annual Security Report is published in the student handbook and on the web. (http://www.mtech.edu/student_life/security/.)

The Student Wellness Taskforce was established in Fall 2007 as a result of Montana Tech signing on with the Montana Collegiate Tobacco Prevention Initiative (MCTPI). Montana Tech’s Taskforce was formed to address tobacco concerns for college students; however, alcohol prevention and other student wellness concerns were added to the mission. Membership includes students, faculty, staff, and community members. In Spring 2009, the Taskforce recommended Montana Tech go tobacco-free. On August 4, 2009, the Chancellor announced that, effective July 1, 2010, Montana Tech will become tobacco-free.

3.B.5 The institution publishes and makes available to both prospective and enrolled students a catalog or bulletin that describes its mission, admission requirements and procedures, students’ rights and responsibilities, academic

regulations, degree-completion requirements, credit courses and descriptions, tuition, fees and other charges, refund policy, and other items relative to attending the institution or withdrawing from it. In addition, a student handbook or its equivalent is published and distributed. A student handbook normally will include information on student conduct, a grievance policy, academic honesty, student government, student organizations and services, and athletics. The student handbook may be combined with the institution's catalog.

Montana Tech annually publishes an electronic & hard copy of the catalog and student handbook. (See Exhibits 3.A.III: [Catalog](#) & 3.B.I: [Student Handbook](#).)

The 2009/2010 Catalog provides all general and specific academic and student services information required by prospective and currently-enrolled students. The Montana Tech Student Handbook (published separately from the catalog), is distributed to all new students at orientation and is available to all students upon request. The Handbook provides information on emergency response instructions, student services, and on organizations and policies and lists important events/dates for the academic year. The Student Handbook is updated and published yearly. Satisfaction with information in the Handbook has steadily increased since 2003. (See Figure 3.B.3: Student Satisfaction Surveys.)

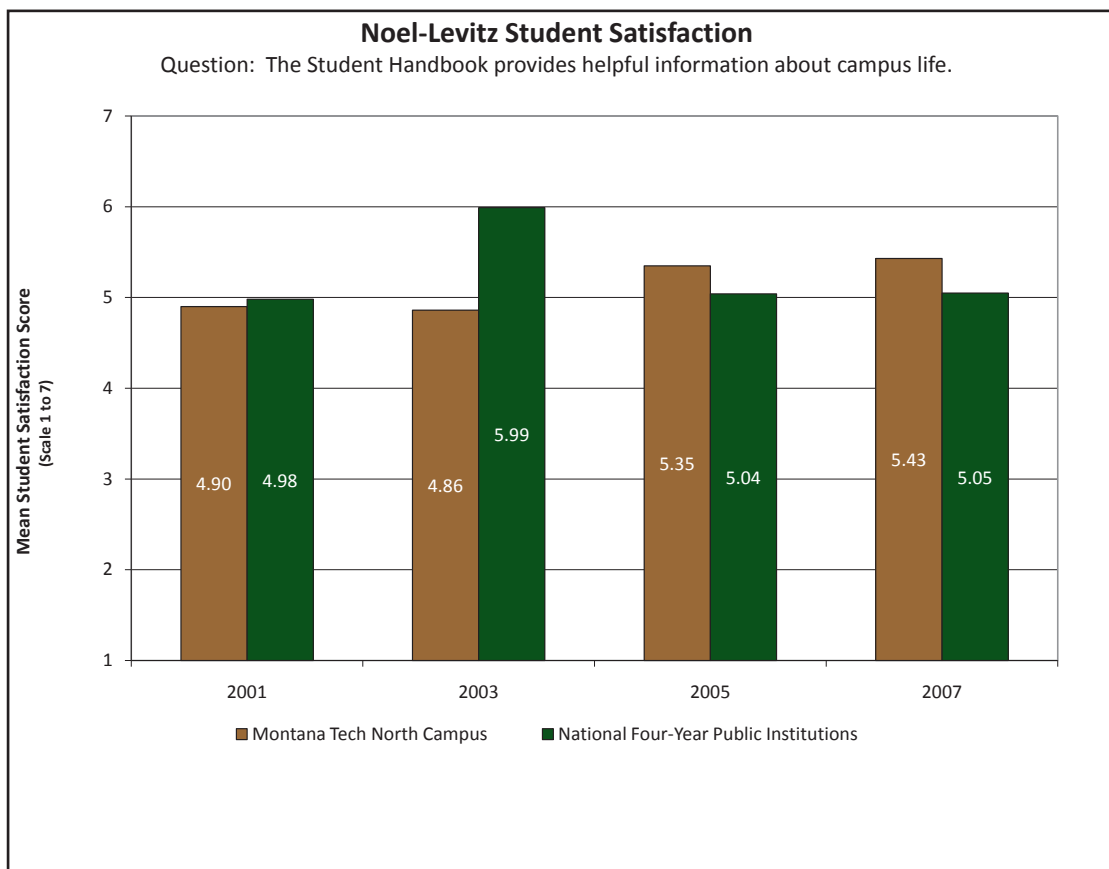


FIGURE 3.B.3: STUDENT SATISFACTION SURVEYS

SELF-STUDY 2010

3.B.6 The institution periodically and systematically evaluates the appropriateness, adequacy, and utilization of student services and programs and uses the results of the evaluation as a basis for change.

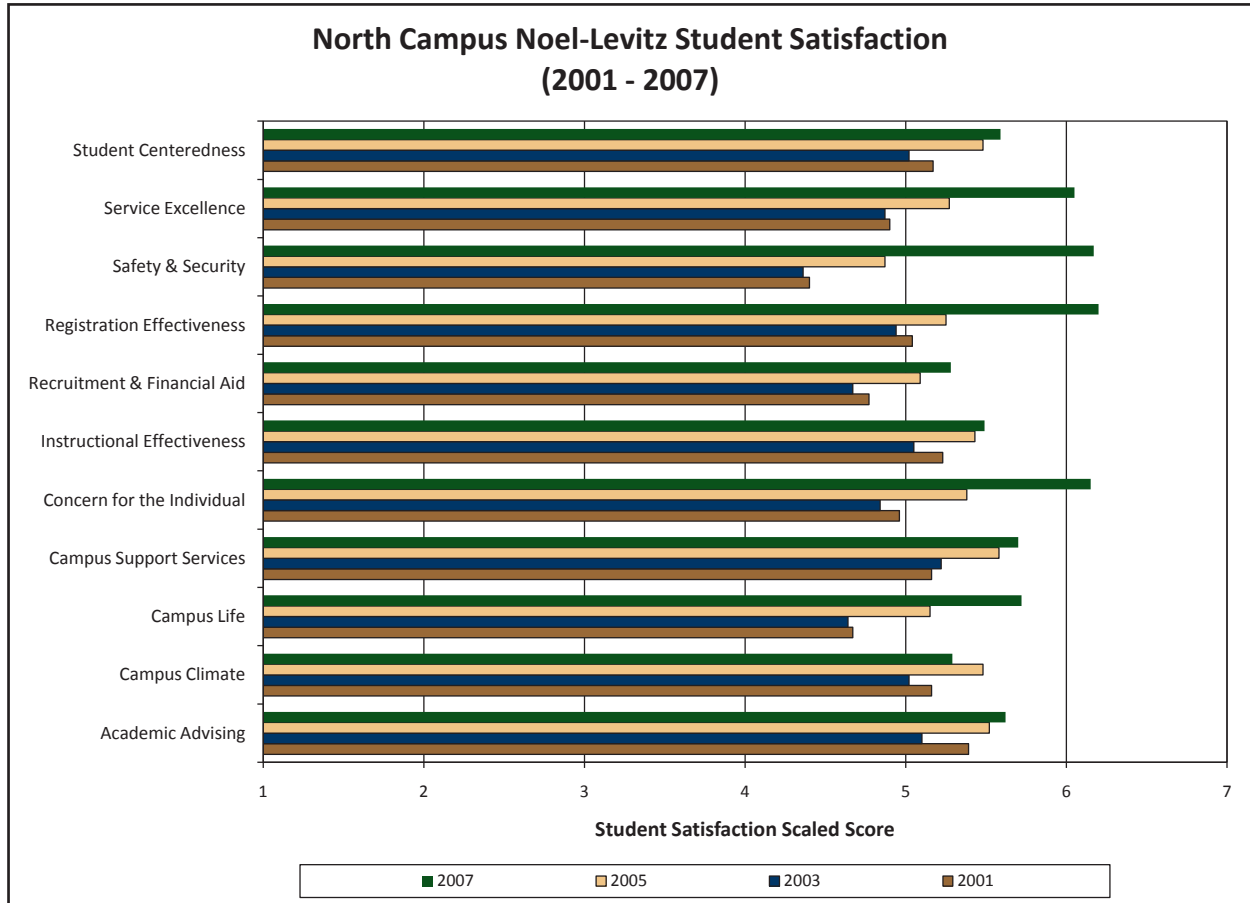
Advisory groups, such as the Campus Access Committee, Advising/Retention Steering Committee, the Bookstore Advisory Board, Strategic Planning Committee, the Chancellor's Cabinet, and Chancellor's Advisory Committee provide on-going feedback for program improvement and are used to monitor services to students.

Tech's Student Life Staff meets bimonthly to discuss, implement, and improve programs with a focus on the First Year Experience (FYE). Topics include summer registration events, Fall/Spring orientations, extended orientation events, and additional student activities scheduled throughout the semester. Programs are developed, implemented, and evaluated.

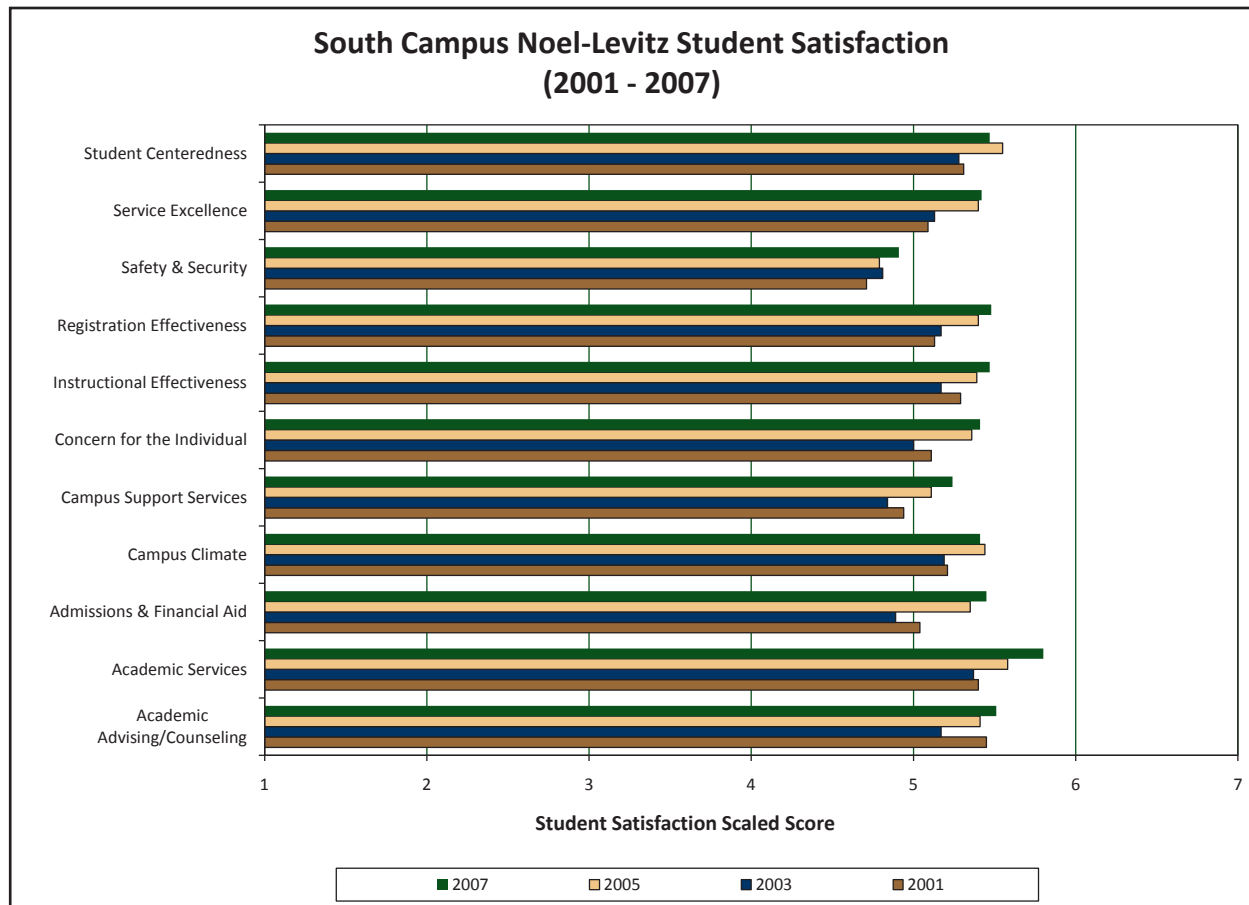
Montana Tech formally evaluates student services by using surveys and advisory groups. Program surveys are administered by Residence Life, Counseling, Career Services, Tech Learning Center, Dining Services, and Student Activities. Surveys are administered at Orientation and Tech Day events. (See Exhibit 3.B.VI: Campus Surveys.)

Montana Tech administers the National Student Satisfaction Inventory (SSI) every other year. Student satisfaction composite scale scores have increased since Fall 2001. (See Figures 3.B.4: North Campus Student Satisfaction Composite Scale Scores and Figure 3.B.5: South Campus Student Satisfaction Composite Scale Scores.)





**FIGURE 3.B.4: NORTH CAMPUS STUDENT SATISFACTION
COMPOSITE SCALE SCORES**



**FIGURE 3.B.5: SOUTH CAMPUS STUDENT SATISFACTION
COMPOSITE SCALE SCORES**

SSI satisfaction survey results have driven programmatic changes and have consistently improved. To improve student satisfaction and address concerns, satisfaction item gaps of one or greater (>1) are identified each assessment year. A performance gap is simply the importance score, minus the satisfaction score. The larger the performance gap, the greater the discrepancy between what students expect and their current level of satisfaction. Therefore, the smaller the performance gap, the better the institution is at meeting student expectations.

As a follow-up, academic or student service departments most related to the area of concern are charged with addressing the performance gap and raising satisfaction levels.

Figure 3.B.6 depicts gaps greater than 1 on the SSI since 2001 on question 57 - I seldom get the “run around” when seeking information on campus. This gap was a contributing factor to creating the innovative One-Stop-Shop that combined the Admissions, Registrar, and Financial Aid Offices into one convenient location.

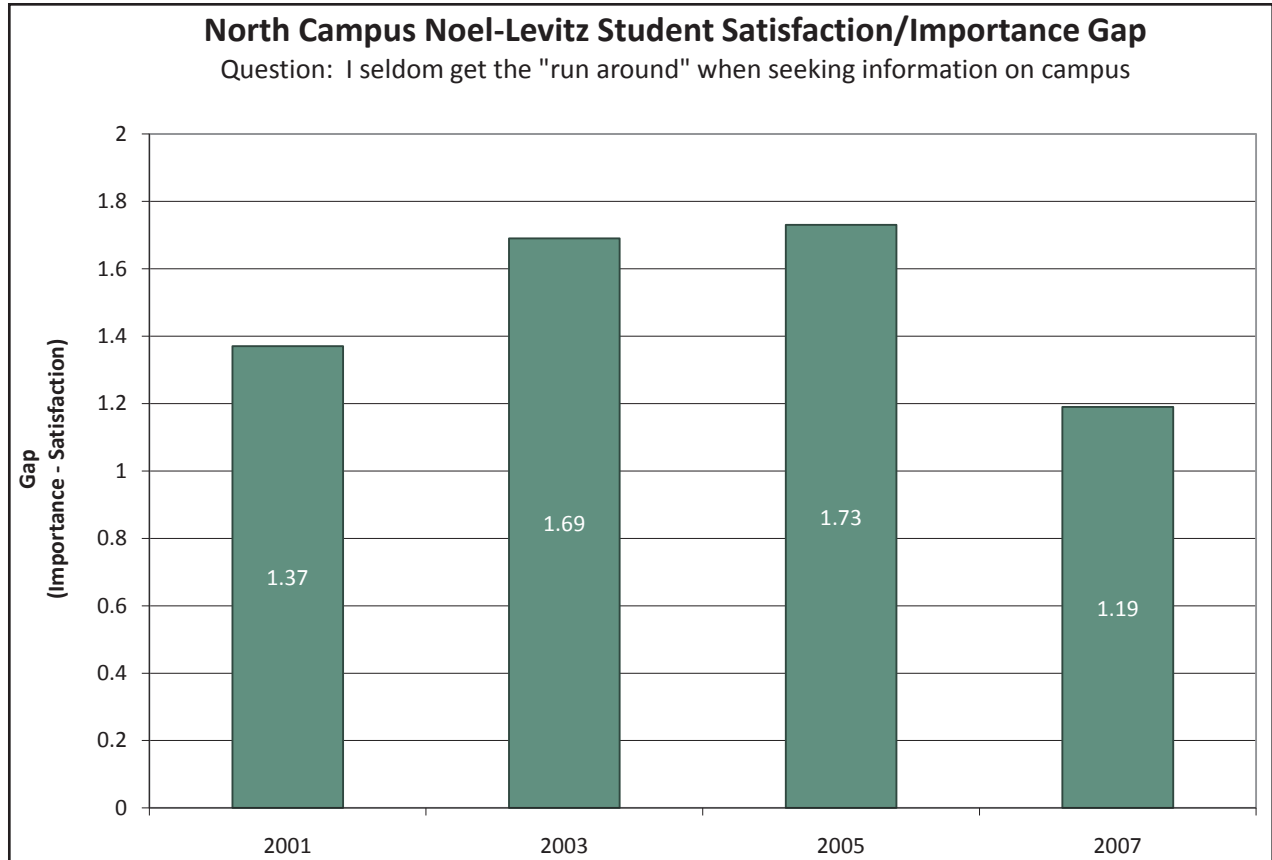


FIGURE 3.B.6: QUESTION 57 GAP ANALYSIS

The student services reorganization was guided by a Strategic Enrollment Management Committee which consisted of Montana Tech’s faculty, staff, and student representatives.

Enrollment Services (housed in the One-Stop-Shop) and Enrollment Processing (located in the same building) are the centerpiece of the reorganization. There are three principles which are repeatedly applied in these departments: Training, Customer Service, and Communication.

Training includes cross-training staff. There is no process that cannot be completed if a staff member is sick or on vacation. Consequently, most services can be provided at the point of consumer (generally student) readiness. There is a commitment in these offices that all staff completes at least four hours of training every month. This helps to keep staff aware of new developments specific to their job responsibilities as well as generally informed as to the happenings and developments in other areas. There is an element of training that involves training students to help themselves. From the kiosk in the One-Stop-Shop to the newly designed “registration process” website, Tech is committed to helping the students help themselves.

SELF-STUDY 2010

The Customer Service goal is to provide the best service by creating a culture that supports going the extra step: in other words, reducing student runaround. Directors and Assistant Directors often work one-on-one with students and staff to problem solve or answer the phone. Second, enrollment services' job descriptions and training enable staff to access double the information students would normally receive from any one person. For example, the Enrollment Services staff members are trained on more than 35 forms in Banner (a typical admissions, financial aid or registrar employee would know 10-17 forms). This means that the Enrollment Services staff members have a more holistic view of the students' relationship with the school. Therefore the focus shifts to assisting the student in achieving their enrollment goals instead of completing an office function. A fundamental element of the restructure is that students can get all (or at least 80%) of their questions answered in one place; thus eliminating the run around. This concept is applied to the physical location of the one-stop-shop as well as the virtual location of the Montana Tech website.

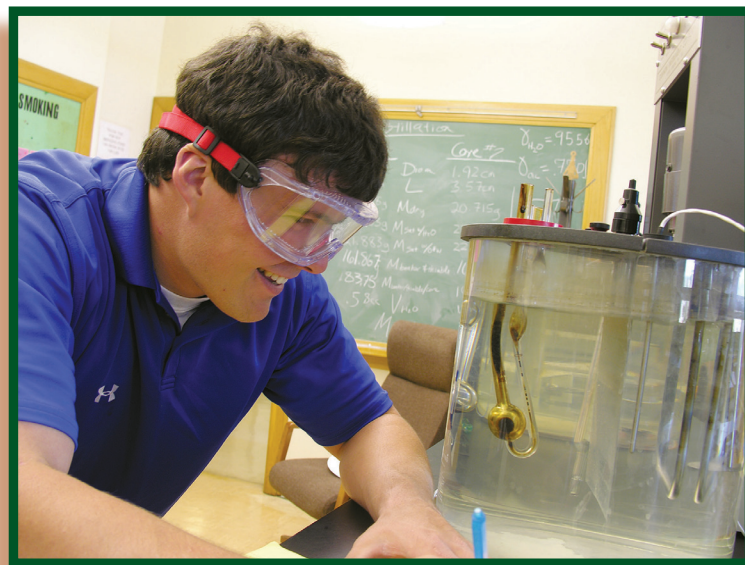
Communication is an ongoing process. Information sent to students is screened for accuracy and consistency. Methods are put in place for the customers to provide feedback. Two examples: first is the process of implementing a new communication plan to new admissions applicants. Instead of receiving several communications about financial aid, admission, or fee payment, students will receive directions as to how to access their file online. Then students will receive key notifications reminding them to check or update their online file. Secondly, an article was written in the student newspaper about the One-Stop-Shop. The writer interviewed students about their experiences. The students noted that it was hard to tell which enrollment specialist to visit when they walked into the One-Stop-Shop. Consequently, a signage system was implemented to address this issue.

To facilitate these changes, the Dean of Students assumed more responsibilities and became Associate Vice Chancellor of Student Affairs/Dean of Students. The Director of Admissions was elevated to the position of Director of Enrollment Management and now oversees the Enrollment Services One-Stop-Shop. The Director of Financial Aid was elevated to the Director of Enrollment Processing and serves as the subject matter expert for all financial aid, scholarships, class scheduling, pre-requisite and graduation requirements, catalog production, part-time faculty contracts, and related issues.

CLOSING THE LOOP

Montana Tech creates the One-Stop-Shop

Today's students expect instant feedback and immediate service. In Spring 2008, a strategic move was made to better serve our current and future students with a One-Stop-Shop concept. This One-Stop-Shop combined processes of the Admissions, Registrar, and Financial Aid Offices. The goal was to provide a single location to maximize the efficiency and effectiveness of student interactions outside the classroom. Enrollment Services is located in the renovated area on the 2nd floor of the Mining Geology Building.



SELF-STUDY 2010

STANDARD 3.C - ACADEMIC CREDIT AND RECORDS

Evaluation of student learning or achievement, and the award of credit, are based upon clearly stated and distinguishable criteria. Academic records are accurate, secure and comprehensive.

3.C.1 Evaluation of student learning or achievement, and the award of credit, are based upon clearly stated and distinguishable criteria. Academic records are accurate, secure, and comprehensive. Credit is defined and awarded consonant with the Glossary definition.

Credit is defined and awarded based on the definition found in the Montana Tech Catalog. A credit represents 50 minutes of lecture instruction per week for one semester. The actual time required for each credit may involve any combination of lecture and/or the equivalent of recitation or laboratory work. Course review and approval, which ensures compliance with these standards, is accomplished through the Curriculum Review Committee.

Current student records, including transcripts, are maintained on the Banner Student Information System Database, which is backed up weekly and secured off-site. Records that pre-date implementation of Banner (1989) are stored in fire-proof file cabinets or electronically in NOLIJ™ (the system used to store/retrieve scanned documents). This system is backed up weekly and secured off-site.

3.C.2 Criteria used for evaluating student performance and achievement including those for theses, dissertations, and portfolios, are appropriate to the degree level, clearly stated and implemented.

Faculty establish expectations for their specific classes and then assign a letter grade based on those expectations. These expectations are outlined in course syllabi and adhere to the institutional grading policies (available on p. 24 of the academic catalog). These policies are in accordance with Montana Board of Regents' Policy 301.5.3 regarding grade standards for the Montana University System. However, students wishing to appeal a grade can do so by following the Grade Appeal instructions on p. 24 of the catalog.

GRADUATE SCHOOL POLICIES FOR ACADEMIC ACHIEVEMENT

Academic Progress

Continued enrollment in the Montana Tech Graduate School requires maintaining a 3.00 cumulative GPA (CGPA) for graduate level courses (4000 and 5000 level) and maintaining academic progress toward the student's degree objectives. Any course listed in the major or minor in which a grade lower than a "C" has been received must be repeated. Specific policies include:

- » Failure of the student to achieve either of these conditions will result in academic probation and can result in ineligibility for financial assistance. The student may

not exceed the maximum of one semester of probation and may be suspended from Graduate School if this limit is surpassed.

- » Any student whose cumulative graduate level grade-point average is less than 3.0 ("B") at the end of the semester of probation may be suspended from the Graduate School.
- » A Master of Science degree program must be completed within 6 calendar years dating from the student's formal entrance into a degree-seeking program.

SUPERVISION OF THE MASTER'S PROGRAM – GRADUATE COMMITTEE

Each incoming graduate student will be assigned a graduate advisor by the student's home department. This advisor will be responsible for helping the student to design a program of study until such time that the student selects a permanent Graduate Committee.

Once selected, the Graduate Committee advises the student on all academic and research matters, assists the student in formulating a program of study leading to the master's degree, and serves on the student's examining committee. The Chair of the Graduate Committee is selected by the student and is responsible for approving the student's program of academic study and research. The Graduate Committee consists of two members from the student's major program and one from a minor program (if applicable). The Chair and the student select one member to the Graduate Committee from outside the student's home department. Voting members must have at least a master's degree.

THESIS PREPARATION AND REVIEW

The Montana Tech Graduate School offers two thesis options. Option A is the classical research-oriented degree and is particularly recommended for students whose educational and professional goals make early research experience desirable. Option B (non-thesis) may take two forms:

- » The student may choose to do an individually written thesis based on original research. This thesis should represent an effort of such quality and construction that it can be displayed in the school library with similar scholarly works. The thesis is written under the direction of the committee chair, but the student is encouraged to seek guidance from all members of his/her graduate committee.
- » The student, with approval of the student's graduate committee, may elect to write a professional paper for publication in lieu of a traditional thesis. The paper should be of acceptable quality for publication in a peer-reviewed journal and will be submitted to the journal for publication.

In some study areas, a student needs more course work beyond the baccalaureate degree before attempting original research. In such fields, Option B allows the student

SELF-STUDY 2010

to defer original research until a doctoral program. Also, for students with an advanced degree or terminal degree, a thesis program may unnecessarily repeat a process that the student has already mastered. Under this option, course work is substituted for the thesis requirement

FINAL EXAMINATION/THESIS DEFENSE

All Master of Science degree candidates will be given a final examination covering course material. In addition:

- » Students choosing the conventional thesis, Option A, or a paper for presentation, will make an oral presentation of their work.
- » Students electing to pursue the non-thesis option, Option B, will be given both a comprehensive written and oral exam on their course work.

All of these oral presentations and examinations will be open to all interested faculty members. The student's major advisor will inform the Graduate School Office in writing of the successful completion of these examinations. If the candidate fails to satisfy the examiners on course work, thesis, on publishable paper, or on written or oral examinations, then the committee may schedule a re-examination over general background, thesis, or over both.

3.C.3 Clear and well-publicized distinctions are made between degree and non-degree credit. Institutional publications and oral representations explicitly indicate if credit will not be recognized toward a degree, or if special conditions exist before such credit will be recognized. Any use of such terms as extension credit, X credit, continuing education credit, is accompanied by clear statements regarding the acceptability of such credit toward degrees offered by that institution. Student transcripts clearly note when any credit awarded is non-degree credit. Whenever institutions grant non-degree credit other than the Continuing Education Unit (CEU), some summary evaluation of student performance beyond mere attendance is available.

Montana Tech identifies coursework and its applicability toward various certificates and/or degrees with common course numbering conventions which are outlined on page 145 of the 2009-2010 Montana Tech Catalog. Moreover, Montana Tech is an active participant in the Montana University System's Common Course Numbering Initiative (CCNI) described in 3.B.1.

Specific limitations for the amount of continuing education, credit by examination, the college level examination program (CLEP), Tech Prep, correspondence, for advanced placement or extended studies credit, and for other types of atypical coursework are clearly identified and explained on pp. 8-10 of the catalog. Montana Tech reviews these policies and updates them yearly on the basis of changes in the Universities' curriculum or changes in the program(s) that assist students in receiving credit through non-traditional means.

3.C.4 Transfer credit is accepted from accredited institutions or from other institutions under procedures which provide adequate safeguards to ensure high academic quality and relevance to the students' programs. Implementation of transfer credit policies is consistent with 2.C.4 as well as Policy 2.5 Transfer and Award of Academic Credit. The final judgment for determining acceptable credit for transfer is the responsibility of the receiving institution.

The University accepts transfer credit from other regionally accredited institutions in accordance with Montana University System policies and as noted in the college catalog (pp. 8-9). Transfer credit from institutions that are candidates for regional accreditation is awarded AFTER the student has successfully completed 30 credits at Montana Tech. Credits of students transferring from international institutions, excluding Canadian institutions, are evaluated for the University by Educational Credential Evaluators, Inc.

3.C.5 The institution makes provision for the security of student records of admission and progress. Student records, including transcripts, are private, accurate, complete, and permanent. They are protected by fire-proof and otherwise safe storage and are backed by duplicate files. Data and records maintained in computing systems have adequate security and provision for recovery in the event of disaster. The information-release policy respects the right of individual privacy and ensures the confidentiality of records and files.

Montana Tech student records are complete, accurate, and secure. The college has adopted and follows American Association of College Registrar's and Admission Officer's (AACRAO) recommendations for Retention of Records. Transcripts and registered student files are maintained in fireproof storage (safes & file cabinets) until they are scanned into NOLIJ™ database. Once the files are scanned, they are also recorded in Banner. This approach provides a redundant database platform, both of which are backed up weekly with the back-up data being stored off-site. The college publishes and adheres to FERPA guidelines on release of information and confidentiality of student records. Further, the University provides training at least once per semester on FERPA, and all employees who have access to FERPA-protected data are required to attend a training session.

STANDARD 3.D - STUDENT SERVICES

The institution recruits and admits students qualified to complete its programs. It fosters a supportive learning environment and provides services to support students' achievement of their educational goals.

3.D.1 The institution adopts student admission policies consistent with its mission. It specifies qualifications for admission to the institution and its programs, and it adheres to those policies in its admission practices.

SELF-STUDY 2010

Montana Tech's student admission policies are consistent with the college's mission and strategic direction. The institution clearly states these admission policies in its primary marketing, recruitment, and policy publications. All admission policies are described in detail on pages 5 through 7 of the [2009-2010 Catalog](#).

In its admissions policies and procedures, Montana Tech balances the need to ensure proper academic preparedness for student success with the need to provide access (as a public institution) to the citizens of Montana. Montana Tech accomplishes this through a tiered admissions process that recognizes student preparedness and ability to benefit at the point of admission.

Montana Tech encourages all prospective students who are interested in attending to apply for admission. Applications for admission are accepted from in-state, out-of-state, and foreign students. The Enrollment Services Office has representatives available to assist full-time, part-time, early admit, non-degree, domestic, and international applicants in the admission process.

Montana Tech's admission requirements vary depending upon the type of applicant. The Montana Tech Enrollment Services Office evaluates all applicants according to the policies outlined in the catalog. Applicants not meeting these requirements may be admissible at the discretion of the Director of Enrollment Services within exception limitations provided within Montana Board of Regents Policy. Students accepted under these conditions are classified as "At-Risk," are assigned to an "At-Risk" advisor, and are required to enroll in MT 1016 – College Success. Transfer students who are admitted by exception are admitted on probation. Students who do not meet undergraduate admission standards are encouraged to apply to the College of Technology or appeal based on their "ability to benefit."



In Spring 2009, the Convicted Offender Applicant Decision Committee was charged with reviewing and admitting students with criminal backgrounds. It established a protocol to standardize the review, admit, or not admit process. A criminal applicant is scored by the Convicted Applicant Manager who uses a matrix based on the "Inquiry Into Student Disclosure Questionnaire" and three letters of reference. (See Exhibit 3.D.I: [Convicted Applicant Offender Decision Training Matrix](#).)

The above-referenced process, created by the Convicted Offender Applicant Decision Committee, is very unique. The Committee was challenged to take a process which is inherently subjective (i.e., trying to evaluate the potential future risk posed by a student with a criminal background) and make admission decisions based thereon. By creating the Convicted Applicant Offender Decision Training Matrix, the Committee imbued the evaluation process a welcome level of objectivity and consistency. However, even with the objectivity of the matrix, the Committee still meets, discusses, and evaluates each applicant and their particular matrix score and particular applicant's personal situation.

TABLE 3.D.I: REQUIRED ADMISSIONS REPORT

STANDARD THREE – STUDENTS ADMISSIONS REPORT				
	EVALUATION YEAR	1 YEAR PRIOR (2008)	2 YEARS PRIOR (2007)	3 YEARS PRIOR (2006)
First Time Freshmen Applications Received	1012	1053	1146	1023
Admitted	887	948	873	880
Denied	27	19	28	19
Enrolled	615	573	535	542
Transfer Applications Received	546	472	490	452
Admitted	446	376	391	350
Denied	2	2	1	3
Enrolled	337	247	253	246
Readmission Applications Received	404	344	419	399
Admitted	382	332	408	376
Denied	0	0	0	0
Enrolled	284	226	286	272
Graduate Applications Received	223	149	153	124
Admitted	52	50	49	36
Denied	27	16	16	8
Enrolled	47	46	45	32
Professional Applications Received	0	0	0	0
Admitted	0	0	0	0
Denied	0	0	0	0
Enrolled	0	0	0	0
Non-Degree Applications Received	423	374	497	614
Admitted	404	353	458	578
Denied	0	0	0	0
Enrolled	296	257	310	426

SELF-STUDY 2010

3.D.2 The institution, in keeping with its mission and admission policy, gives attention to the needs and characteristics of its student body with conscious attention to such factors as ethnic, socioeconomic, and religious diversity while demonstrating regard for students' rights and responsibilities.

Montana Tech does not discriminate against any students based on sex, marital or parental status, race, on color, religion, age, or on national origin. A non-discrimination statement is included on page 3 of the Montana Tech 2009-2010 Catalog.

Montana Tech's Succeeding Students in Engineering Programs (STEP), provides female and minority students who are pursuing an engineering degree with support services toward college completion. STEP assists students with many aspects of college life including study skills, time management skills, social skills, and other skills important for retention and success. In practice, the STEP program participates in Club Rush and other appropriate venues to advertise the program and students self-elect to participate. For the past four years, engineering program enrollment has averaged 17% female and 3% minorities. Completion rates for these underrepresented groups for the same four years has mirrored enrollment rates at 17% and 3% respectively. Graduation rates of underrepresented students per cohort year indicate that 33% of female engineering students and 14% of minority engineering students earn their degree from Montana Tech within 6 years of their first-time full-time enrollment.



The Montana Minds Program awarded four-year full-ride renewable scholarships valued at up to \$6,400 (more than the cost of tuition and fees for an in-state student) to 18 students in 2007 and to 20 students in 2008. Based both on merit and need, the scholarships were funded by the National Science Foundation (NSF) and required that the recipient be a low-income student. In addition to scholarship dollars, the program provides each scholar with learning communities, custom selected academic advisors, social events with academic advisors, academic field trips, and tutoring.

The Bright Prism Ray Scholarship Program is a Mining, Geology, and Metallurgical Engineering initiative funded by the National Science Foundation (NSF) to increase the number of engineering students from low-income and first-generation families. The program targets students entering the fields of Geological Engineering, Metallurgical and Materials Engineering, and Mining Engineering. Scholarships for these students are valued up to \$6,600 per year and include special tutors, extended field trips, and outreach to help students prepare for and succeed in college. The first students admitted to this program will enroll in Fall 2010.

International student enrollment has grown substantially over the past five years, specifically with Middle Eastern students. To address religious, ethnic, and diversity needs, Montana Tech worked with Muslim students to allocate locations for prayer, serve vegetarian and Halal foods in Dining Services, and install satellite TV service in apartment housing so that students can receive Arabic channels.

3.D.3 Appropriate policies and procedures guide the placement of students in courses and programs based upon their academic and technical skills. Such placement ensures a reasonable probability of success at a level commensurate with the institution's expectations. Special provisions are made for "ability to benefit" students. (see Glossary)

The University uses the following testing instruments to place students in appropriate coursework: ACT/SAT test scores, GPA, class rank, previous coursework and grades, and/or Compass test scores.

Students who do not meet admissions standards, but who have been admitted based on ability to benefit, are advised by the department head, generally limited to 15 credits, and required to take MT 1016 – College Success. This course is designed to teach students how to have a successful college experience both academically and personally.

Montana Tech gives high priority to placing students in the most appropriate math courses on the basis of their current skill and knowledge base. All new students provide standardized test scores, previous college level math coursework, and/or are tested at Montana Tech for math assessment purposes. Based upon the assessment results, each student is advised and placed in the most appropriate math course. For example, a student must have a 27 Math ACT or equivalent assessment to be placed in Calculus I. (See Standard 2.B.1, Table 2.B.III and Table 2.B.IV for math placement rules based on ACT/SAT scores followed at Montana Tech.)

3.D.4 The institution specifies and publishes requirements for continuation in, or termination from, its educational programs, and it maintains an appeals process. The policy for readmission of students who have been suspended or terminated is clearly defined.

Specific requirements for good academic standing, probation, suspension, and for an appeals process are clearly indicated in the catalog (p. 25). If during any semester a student's cumulative GPA is less than 2.00, the student will be placed on academic probation. Freshman students admitted to Montana Tech "At-Risk" or who are placed on probation are required to take MT 1016 - College Success. If in any semester while on probation a student falls below the minimum standard for academic progress, the student will be academically suspended from the University. At the conclusion of each semester, affected students are promptly notified of probation or suspension and of the appeals process by the Vice-Chancellor for Academic Affairs Office.

SELF-STUDY 2010

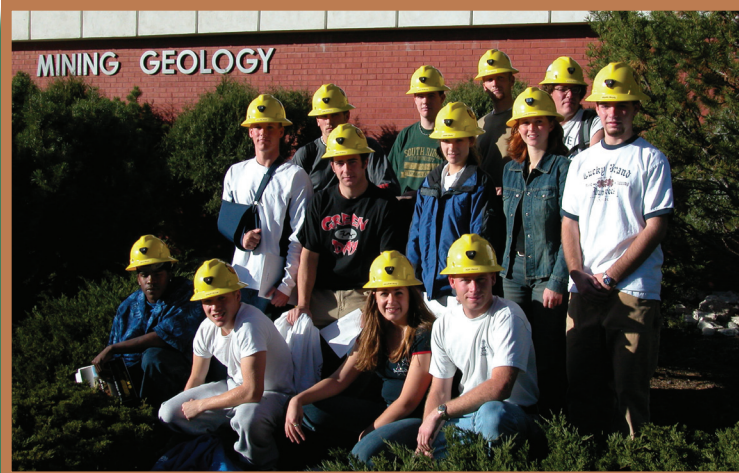
3.D.5 Institutional and program graduation requirements are stated clearly in appropriate publications and are consistently applied in both the certificate and degree verification process. Appropriate reference to the Student Right-to-Know Act is included in required publications.

Graduation requirements (institutional and programmatic) are clearly indicated within the Catalog (pp 26-28.) and within each department section. A structured course substitution/course waiver process exists for any instances when a student might vary from the current curriculum requirements. Exhibit 3.D.II: *Application for Degree Forms* provides the structure for appropriate advisor, department, and college review of the student's coursework and requires signatures by the student, advisor, by the Department Head, academic Dean, and by the Business Office.

Information required in The Student Right-to-Know Act is published in the Student Handbook, Catalog, and on the college website (http://www.mtech.edu/onestop/grad_comp_rates.html and [http://www.mtech.edu/student_life/security/.](http://www.mtech.edu/student_life/security/))

3.D.6 The institution provides an effective program of financial aid consistent with its mission and goals, the needs of its students, and institutional resources. There is provision for institutional accountability for all financial aid awards.

Montana Tech provides eligible students with financial assistance consistent with all federal and state guidelines and in accord with the needs and talents of its students. Accountability for all financial aid awards is assured by adherence and compliance with all federal and state regulations.



(See Exhibit 3.D.III: *Financial Aid State Audits and Federal Program Reviews.*) The Enrollment Processing Office determines student eligibility for funding and awards those funds; the Business Office disburses the funds and delivers any credit balances to students.

The Enrollment Processing Office awards and disburses aid to more than 80% of our enrolled students. More than \$15,000,000

was disbursed during fiscal year 2009. The types of aid disbursed included: federal and state grants, work study, loans, private grants, internal and external scholarship support, and tuition waivers. These funding sources help our students pay for their higher education expenses which include tuition/fees, room/board, books and supplies, personal, and transportation expenses. These expenses are included in our cost of attendance budgets when awarding and disbursing aid. Figure 3.D.1 depicts a five-year average disbursement for Montana Tech and the College of Technology.

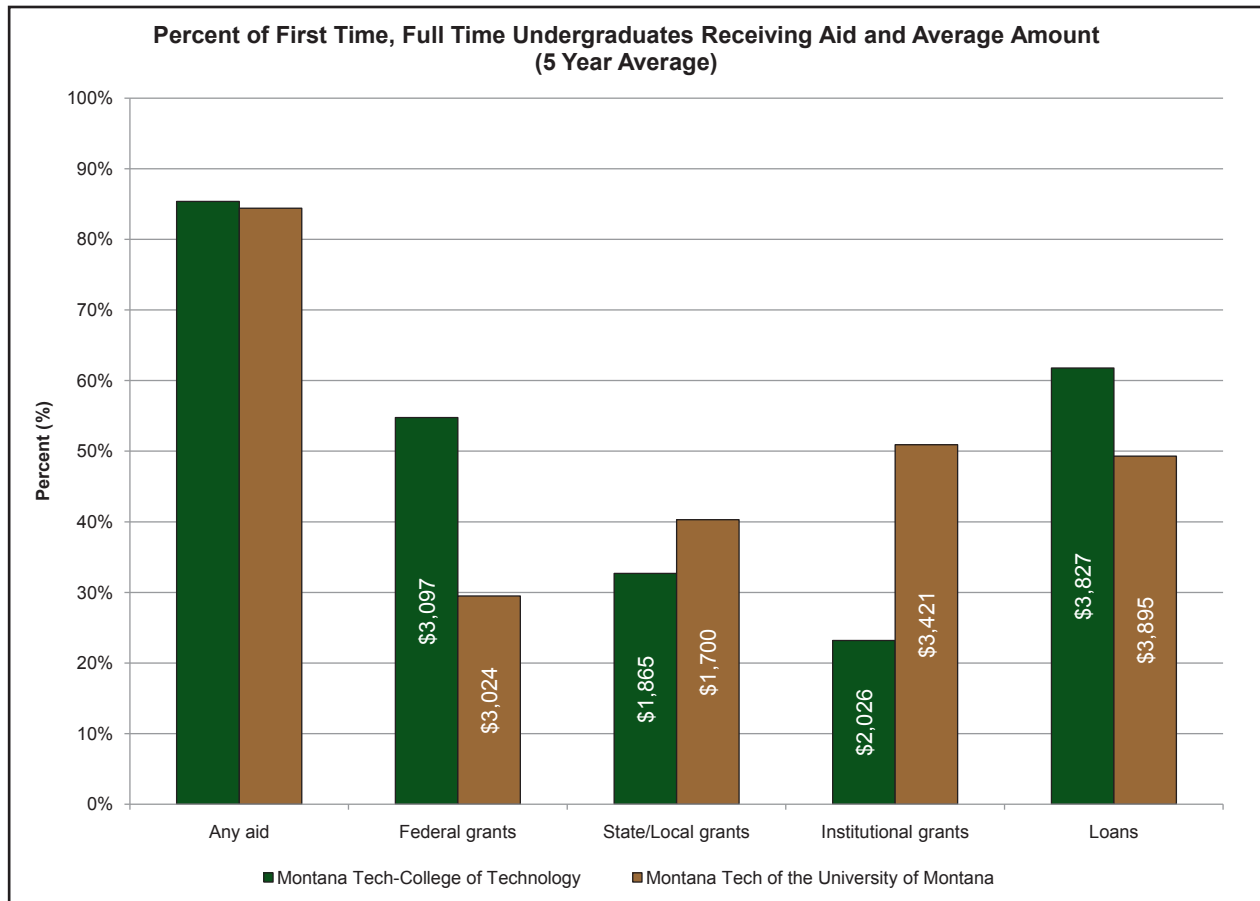


FIGURE 3.D.1: FIVE-YEAR AVERAGE

Montana’s nonprofit Student Assistance Foundation (SAF) opened a campus outreach office on the Montana Tech campus in 2007 to provide additional outreach services and resources to those students preparing to enter and to those already attending college. SAF provides college and career counseling, along with financial literacy and debt management outreach through a wide range of programs and services.

For example, through the SAF-sponsored Montana Career Information System (MCIS), students can identify their interests and skills through assessment tests like O*NET Interest Profiler, Work Importance Locator, and Micro-SKILLS. Then, students are able to search a database of more than 3,500 colleges and universities in the U.S., explore information on more than 500 career opportunities, and follow-up with leads on more than 3,200 scholarships.

In addition, SAF works diligently through a variety of methods to help students and their families understand how student loans can help them attain their dreams of postsecondary education, and what effect those loans could have after graduation. Campus outreach managers provide loan entrance and exit counseling for students. They also expand upon those efforts by educating students about their repayment

SELF-STUDY 2010

rights and responsibilities, and by explaining to students about debt management as they pursue their degree programs. That emphasis on default aversion education and assistance usually translates into lower default rates and enhances the ability of the school and students to retain Title IV eligibility.

3.D.7 Information regarding the categories of financial assistance (scholarships and grants) is published and made available to both prospective and enrolled students.

Both the Enrollment Processing Office and the Enrollment Services Office disburse necessary forms to obtain federal, state, and institutional aid. Montana Tech offers students a variety of grants, loans, and scholarships. Information on various types of financial assistance is published annually at <http://www.mtech.edu/fa>. For additional information regarding federal aid programs, individuals are encouraged to visit: <http://www.studentaid.ed.gov>.

CLOSING THE LOOP

Scholarship Proposal Implemented

The Student Service restructure improved the scholarship and financial aid award processes by combining the authority of both merit scholarships and need-based financial aid into one entity. A new scholarship award process was initiated in Spring 2009 to address low levels of satisfaction on the notice students receive in reference to applications and deadlines. Figure 3.D.2 depicts prior assessment year gaps greater than one that signify that students were not satisfied with the timing of the financial award process. The 2009/10 scholarship awards were made earlier than in prior years and were packaged with financial aid awards. Students are now informed of their awards before they leave school spring semester. Beginning with the 2010/2011 scholarship process, new student scholarship applications are due January 1st and returning student applications are due by February 1st. This change will help with college planning for students and parents. (See Exhibit 3.D.IV: [2008/2009 SEM Scholarship Proposal](#)).

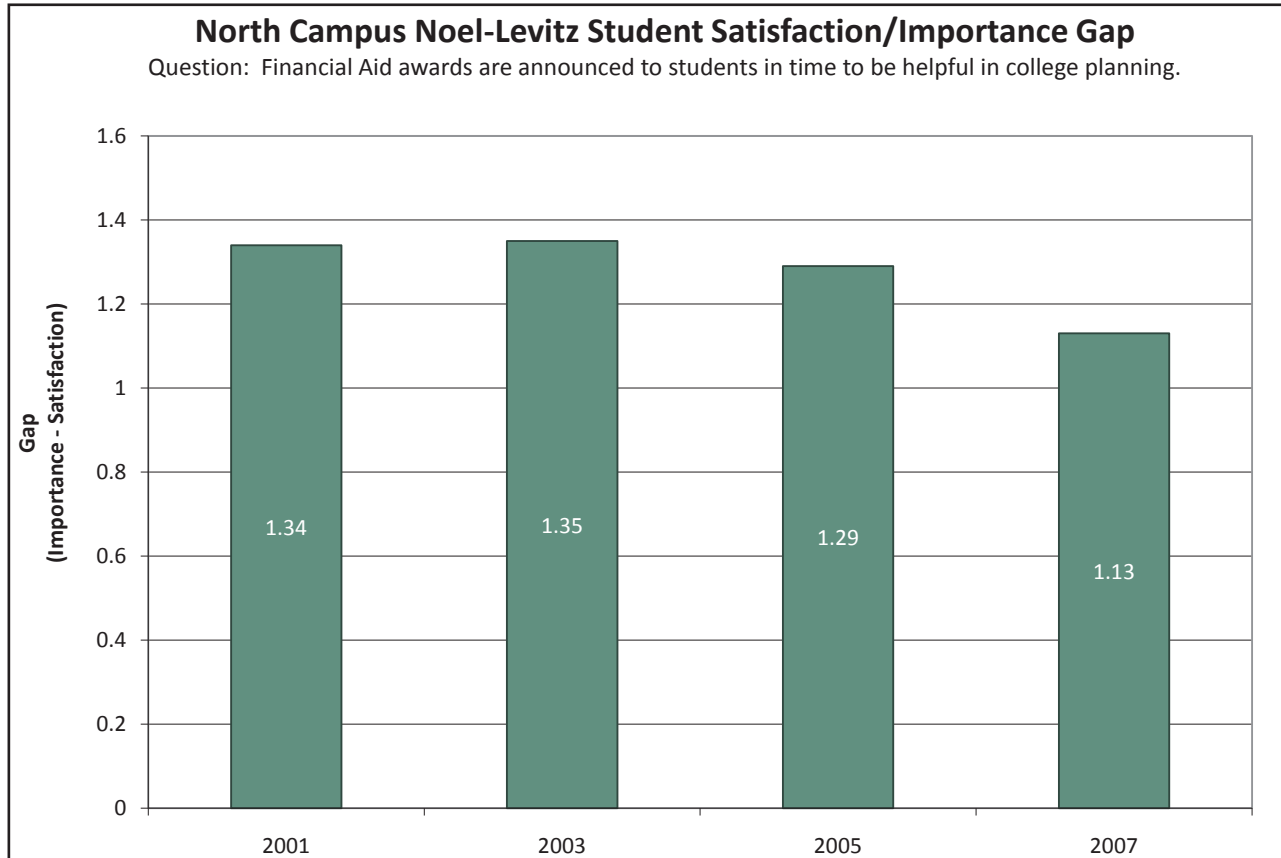


FIGURE 3.D.2: FINANCIAL AID AWARD NOTIFICATION

The STARS online scholarship application was implemented for returning students 2009/10 and for new students in the spring of 2010. STARS walks students through the online scholarship application process with an easy-to-follow scholarship application without completing the hardcopy forms. In just minutes a student can submit a scholarship application and receive a customized list of scholarships. STARS enables students to find, review, and apply for several qualified scholarships with just a few clicks. Moreover, scholarship administrators can enter new scholarships, manage, award, and review scholarship applications. Thus, administrators can drill down into every aspect of an application online and generate detailed reports that assist with the award process.

3.D.8 The institution regularly monitors its student loan programs and the institutional loan default rate. Informational sessions which give attention to loan repayment obligations are conducted for financial aid recipients.

Montana Tech’s Director of Enrollment Processing receives annually the Cohort Default Rate from the U.S. Department of Education. Montana Tech’s prior year and National default rates are depicted below in Figure 3.D.3. Initially Stafford default rates were high because Tech did not provide ample financial literacy to students

SELF-STUDY 2010

through entrance and exit counseling sessions. Many borrowers that defaulted on loans withdrew from Tech prior to completing their academic program, including many first semester students. Tech's Retention Committee identified At-Risk students at mid-terms. Academic intervention and counseling services are now available to At-Risk students to help identify and provide options to keep the student in school.

The Student Assistance Foundation (SAF) opened an Outreach Office on campus in 2007. SAF provides group counseling sessions on financial literacy, including income potential for occupations relevant to their course of study, tools to manage debt, repayment options, and many other budgeting tools for students to control and manage loan debt. The on-campus Outreach Office has been instrumental in reducing Stafford loan default rates.

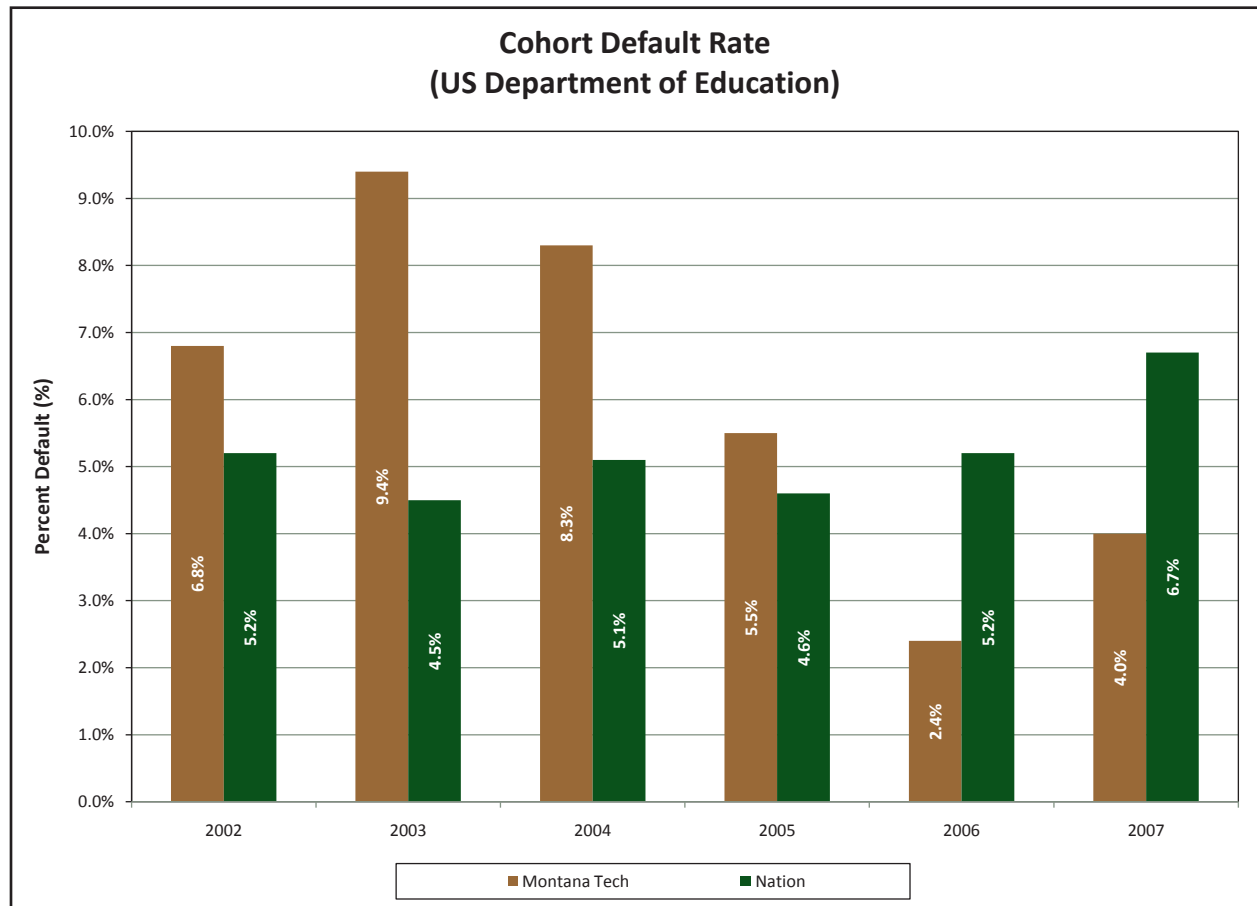


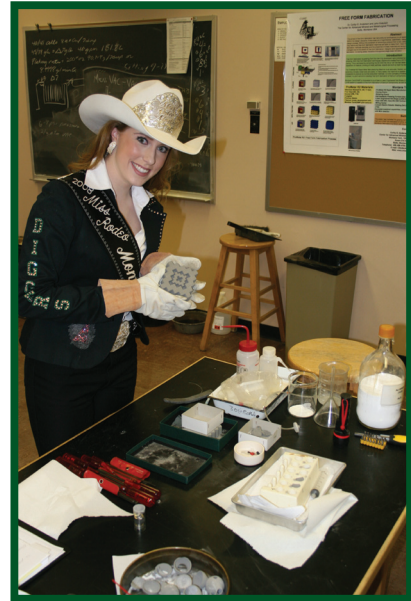
FIGURE 3.D.3: MONTANA TECH DEFAULT RATES

At a time when escalating higher education debt is making headlines nationwide, Montana Tech has proven it can help both students and their parents successfully manage loan repayment. Tech is committed to offering assistance with entrance and exit counseling and with educating students on responsible borrowing habits. Cohort default rates are calculated annually and are based on the percentage of students who enter repayment and default before the end of the next federal fiscal year. Official cohort rates are available in September. (See Exhibit 3.D.II: *Financial Aid Statistics, Default Rates, State Audits and Federal Program Reviews*.) Montana Tech uses Campus Partners for all of its service requirements pertaining to federal Perkins loans. All students who receive Federal Stafford loans must complete entrance counseling online before certification of Federal Stafford loans. Federal Perkins loan borrowers must complete online entrance counseling before disbursement of that loan.

Montana Tech also works very closely with the Student Assistance Foundation (SAF) to provide outreach and support to students and to the greater community. SAF provides group counseling sessions and one-on-one sessions to all first-time and transfer borrowers on student loan obligations. The counseling session provides information on how to manage student loans, both during and after college. Students are required to complete exit counseling at the end of their academic careers.

3.D.9 The institution provides for the orientation of new students, including special populations, at both undergraduate and graduate levels.

Orientations for new and transfer students are offered at the beginning of every semester. (See Exhibit 3.D.V: *Orientation Programs*.) Expanded orientation programs are also offered for graduate, international, and College of Technology students. In addition to the orientation programs, students are introduced to the campus and student services during Tech and Registration Days. Tech Days are offered during the academic year to introduce the campus to prospective students, and Registration Days are offered during the summer to advise and register the student. Figure 3.D.4 depicts increased student satisfaction on how new student orientation services help students adjust to college.



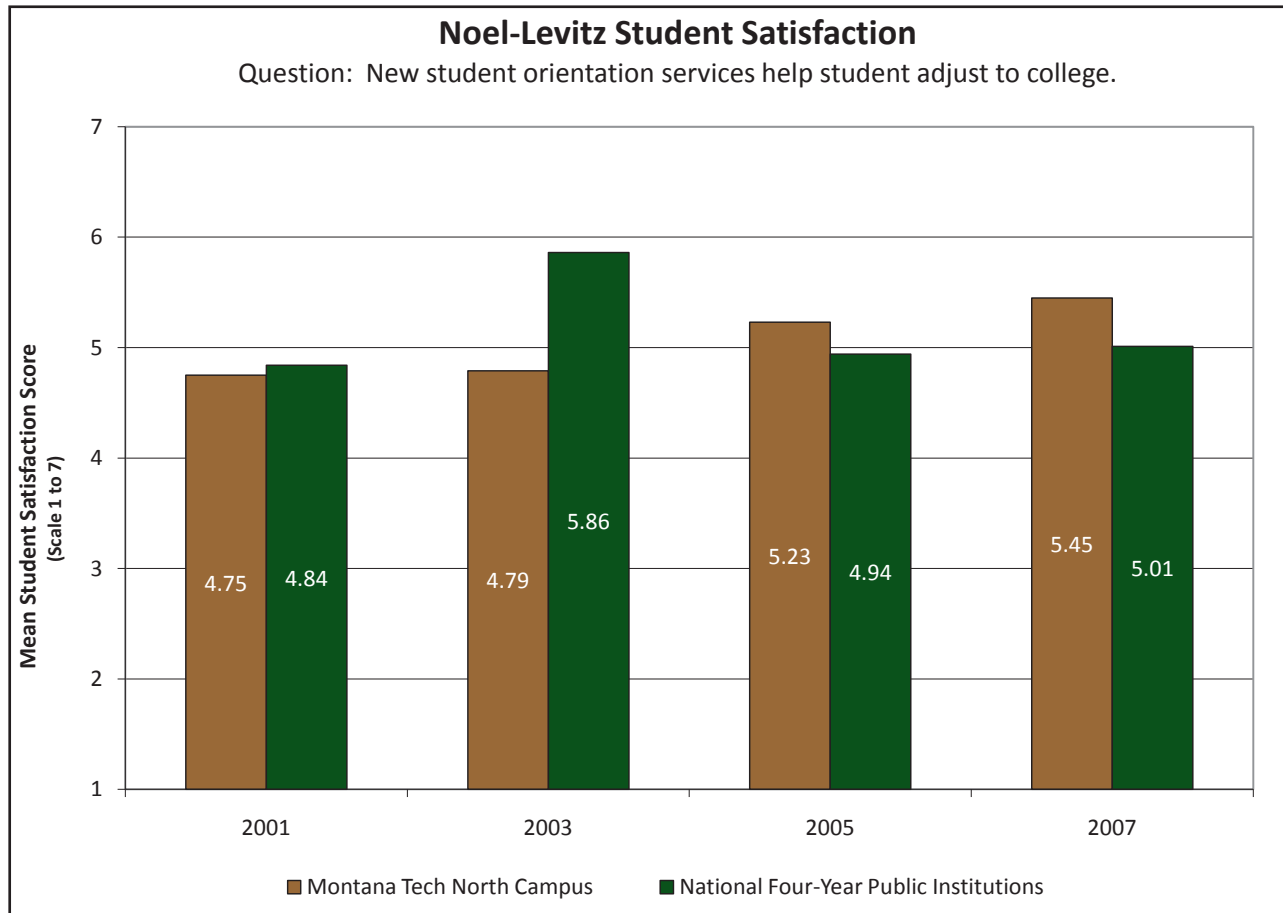


FIGURE 3.D.4: STUDENT SATISFACTION

3.D.10 A systematic program of academic and other educational program advisement is provided. Advisors help students make appropriate decisions concerning academic choices and career paths. Specific advisor responsibilities are defined, published, and made available to students (Standards Two and Four, Standard Indicators 2.C.5 and 4.A.2).

A discipline-specific faculty advisor is assigned to students with a declared major. Normally, this faculty member will remain the student's advisor during the entire period that the student is continuously pursuing the same degree. This arrangement develops a strong and lasting relationship between the student and advisor. The student is required to meet with this advisor at least once each semester to pre-register for the next semester's courses. During this required visit and perhaps during other visits, the faculty and the student discuss the student's career aspirations and curricula choices. Depending on the discretion of the advisor, an alternate pin number can be made available to students who choose online registration. These alternate pin numbers change each semester and are only available from the academic advisor.

During the four summer registration events, volunteer faculty advise and guide the Enrollment Services Office in managing the new student registration process. Special care is made to ensure proper math and English placement of each student, based on ACT, SAT, or Compass test scores. Additionally, students are advised to take (almost exclusively) classes that will count directly toward graduation. Students then connect with their individual advisor during the Fall orientation departmental meetings.

3.D.11 Career counseling and placement services are consistent with student needs and institutional mission.

The mission of Career Services is to serve Montana Tech students, alumni, and employers by assisting students and alumni with career exploration, preparation, implementation, and management and also by assisting employers in connecting with students, alumni, faculty, and administration. The office works with all levels of students, from incoming freshmen to graduate students, as well as with alumni to help students achieve their career goals.

CLOSING THE LOOP

At registration activities in the Summer of 2008, parents expressed concern about a student's ability to choose and/or change a major while at Tech. Consequently, the Student Services staff developed Major Exploration Workshops to help align students with their educational and career goals. The Major Exploration Workshops are now part of ongoing programs offered each semester. (See Exhibit 3.D.VI: [Major Exploration Brochure](#).)

Career Services recognizes the value of developing relationships with employers by inviting companies on campus to connect with students. The first Career Fair took place in Fall 2000 with 48 employers and 627 students attending. During the Fall 2008 Career Fair, employer participation reached an all-time high of 115 employers attending. In the Spring of 2008, Career Services sponsored the 1st annual CareerSmart Fair to promote employers hiring in healthcare, business, in sciences, professional studies, and in the technology and trade degrees. Thirty-one employers attended the inaugural event, with nearly 400 students attending. The growth experienced through the Career Fairs is highlighted in Figure 3.D.5.

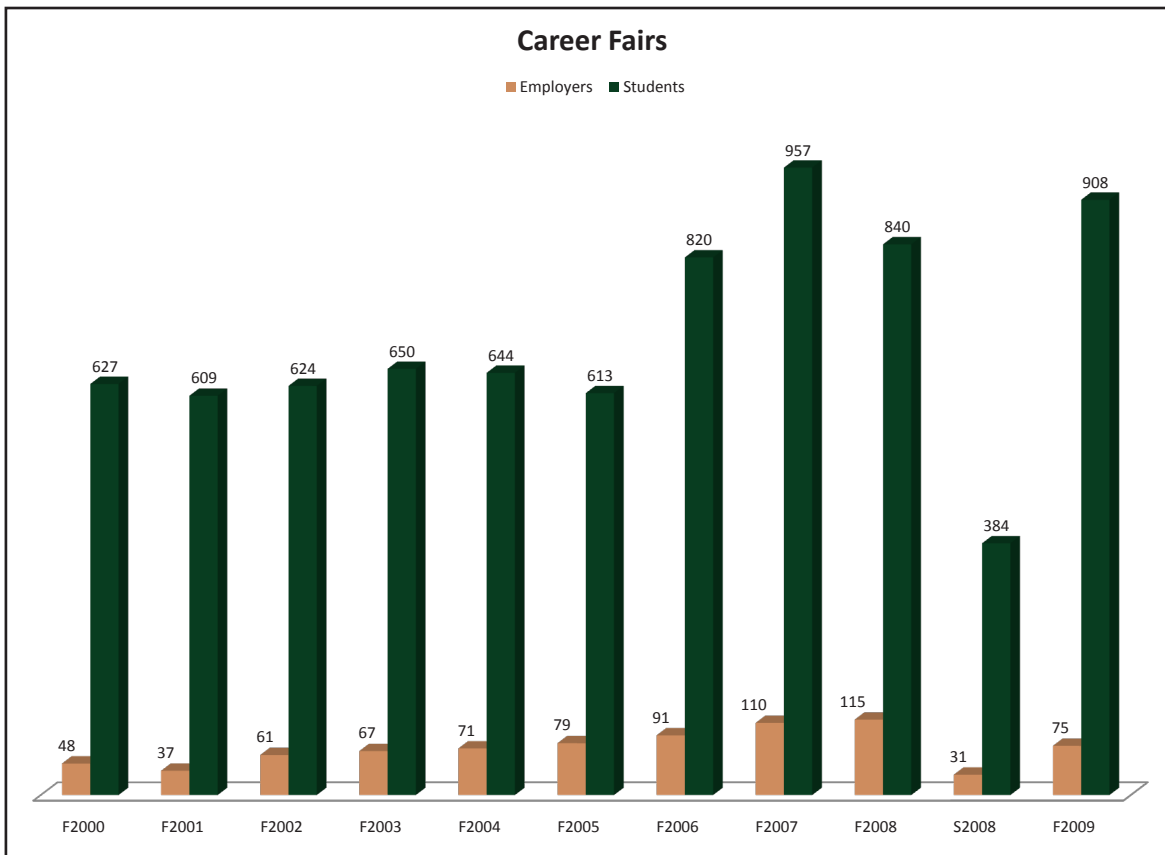


FIGURE 3.D.5: CAREER FAIRS

In Spring 2007, Career Services implemented a career management software system to expand services and proactively respond to the growing student use of technology. Prior to this software, students were physically signing up for on-campus interviews by coming into the office to write their name on a timeslot, to view job postings on a bulletin board, and then to email a résumé and information sheet to Career Services to have it electronically accessible for employers.



The office has seen opportunities increase with making services accessible online through DIGGERecruiting. A specific area of growth has been in the number of jobs posted online through DIGGERecruiting. This innovation has also helped employer development and outreach for those majors in programs which had only a few graduates annually. In Figure 3.D.6 DIGGERecruiting information is outlined. The number of students engaged with Career Services continues to grow.

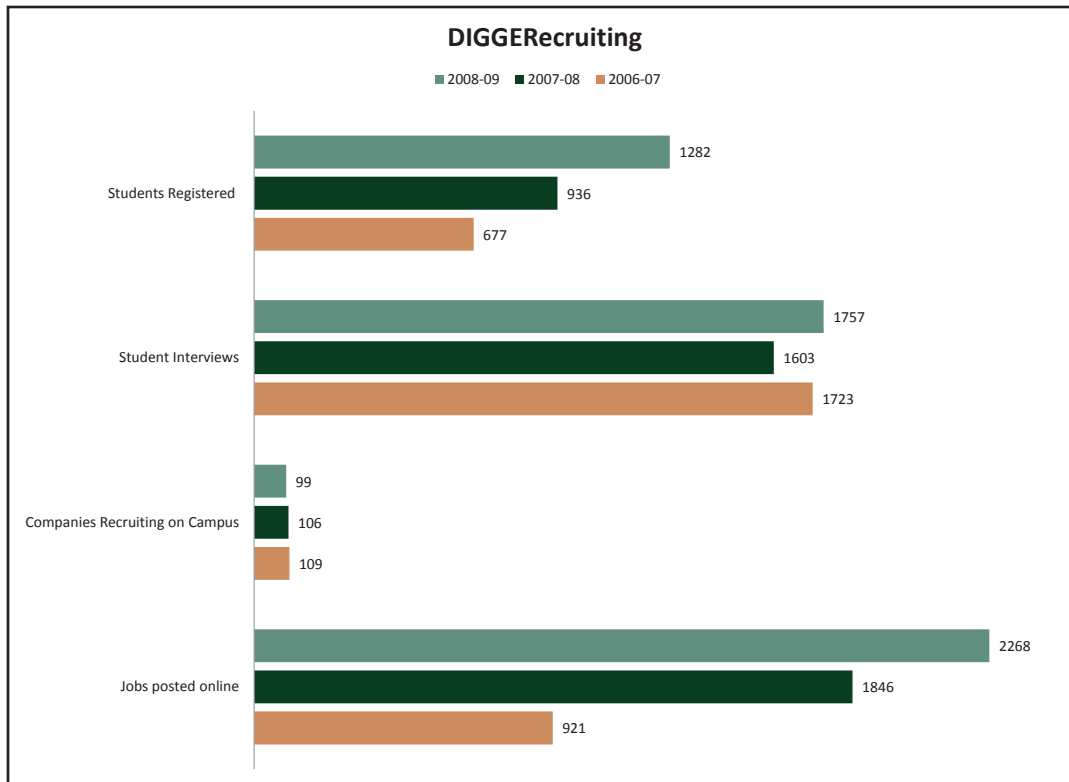


FIGURE 3.D.6: DIGGERECRUITING

In Fall 2008, the offices of Alumni Affairs and the Montana Tech Foundation launched software to connect alumni with Montana Tech’s campus. Part of the services promoted online is to connect Career Services to alumni. Alumni options include assisting current students with career advice/mentoring and determining if they are interested in receiving assistance from Career Services. By shifting to an online format with job postings accessible through the Internet, Career Services permits alumni to register with the office and to view online jobs for free. Many employers have established relationships with selected departments at Montana Tech and have hired students as interns and as entry-level employees. This approach allows Career Services to better assist employers as well as to connect alumni with potential employers.

The Experiential Learning and Internship Programs offered at Montana Tech are critical to the success of its graduates. Since 2002, Career Services has collected and reported degree-related experiences shared by students. Complete reports are available online at www.mtech.edu/career/surveys. Prospective students often hear about the higher than average starting salaries and high annual placement percentage. Although this is true, it is based upon the emphasis faculty and students place on getting hands-on, degree-related experience prior to graduation. Figure 3.D.7 highlights the internship program statistics including: the number of credits earned, the number of participating students (engineering and other programs), the number of employers offering summer positions, and internships throughout each academic year.

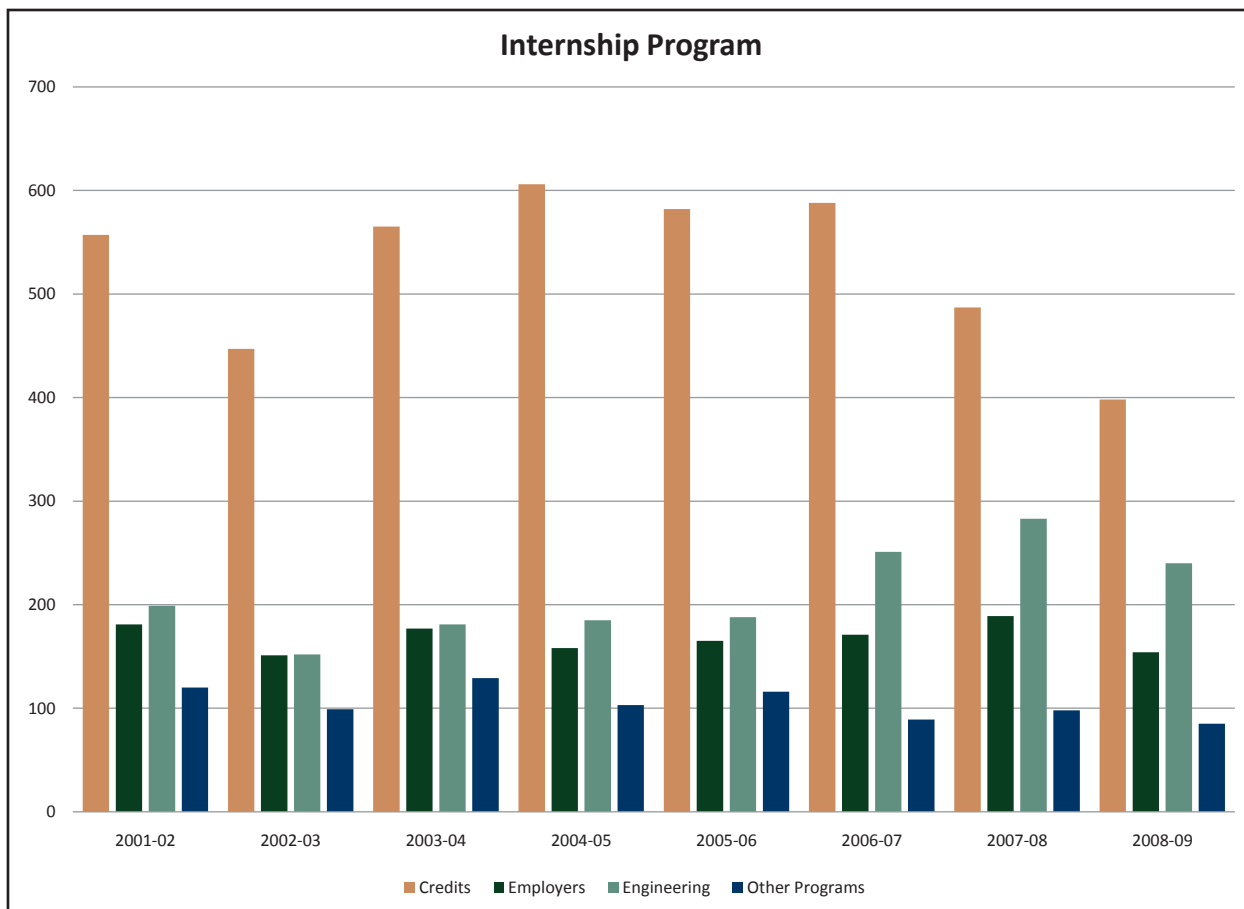


FIGURE 3.D.7: INTERNSHIP PROGRAM

Career Services collects and monitors the paperwork for faculty intern advisors to use in determining the credit allocated for the experience. Students who wish to earn academic credit complete the appropriate paperwork with their faculty advisor and workplace supervisor (including the learning agreement and student and supervisor evaluations).

The annual Graduate Survey summaries have been a mainstay of what Career Services has been reporting and by which success has been measured. The data collected has historically been based upon a 100% response rate. Graduates from Montana Tech continue to have excellent starting salaries and find employment in their field. In 2008, a new webpage was created that highlights the current annual graduate survey summary data. The past 10 years of surveys are available online at [MT Tech | Career Services | Surveys](#) In Figure 3.D.8, the 2008 Graduate Survey data outlines the breakdown of the 99% response rate. (See Exhibit 3.D.VII: [2008 Graduate Survey](#) for additional information.)

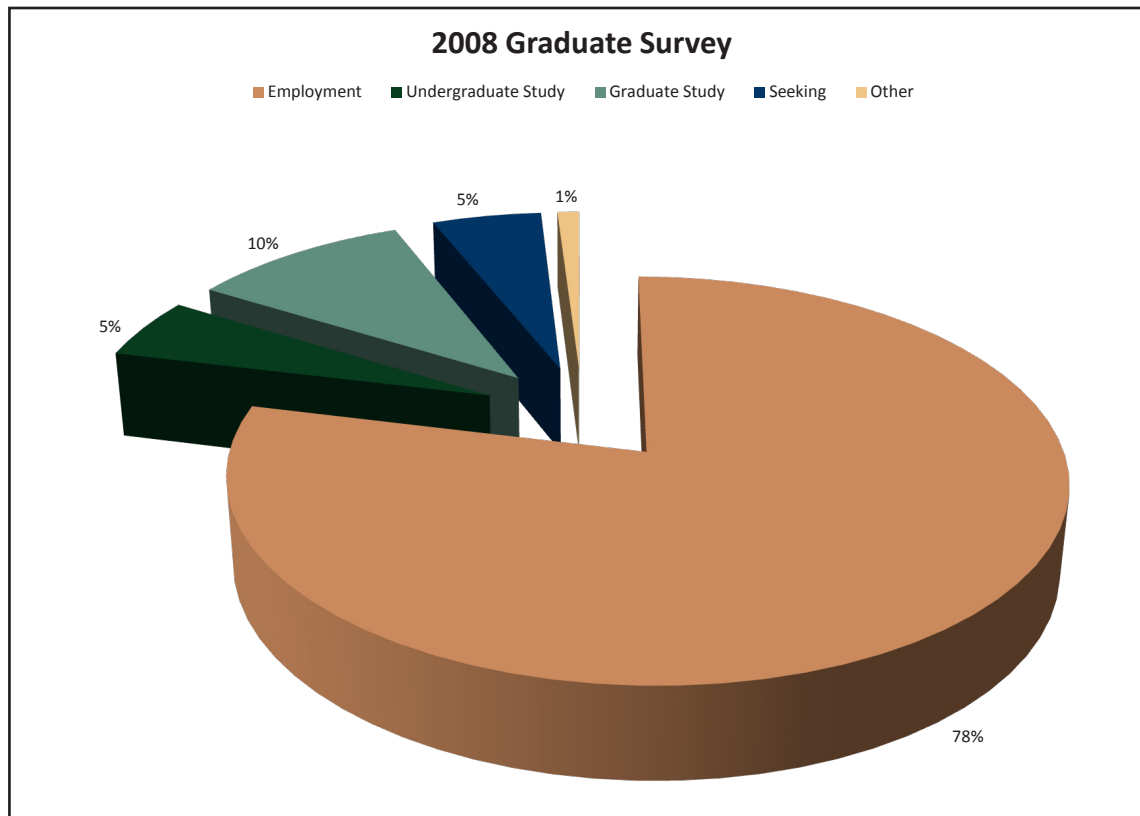


FIGURE 3.D.8: 2008 GRADUATE SURVEY

Student & Employer Satisfaction surveys have been done on specific events and for programs provided by Career Services. For example, survey data is collected and reviewed by Career Services from career fair employers and student participants, on-campus recruiters, and from workshop participants. Thus, any improvements in programming or services are based upon solid feedback. Moreover, an overall comprehensive satisfaction survey is planned as part of the future assessment. Here, suggestions on additional programs are to be identified and taken into consideration from survey feedback.

3.D.12 Professional health care, including psychological health and relevant health education, is readily available to residential students and to other students, as appropriate.

At the end of the 2009/2010 academic year, the Health Center will celebrate 25 years of service to students. (See Exhibit 3.D.VIII: *Health Center User Statistics*.)

Montana Tech's Student Health Center is staffed four hours a day (10 a.m. to 2 p.m.). A nurse is on duty the full four hours, and a physician is on duty two hours a day. The link to Montana Tech's Health Center is http://www.mtech.edu/student_life/healthcenter.htm. Figure 3.D.9 depicts increased student satisfaction since 2003 with the competent staff in the Health Center.

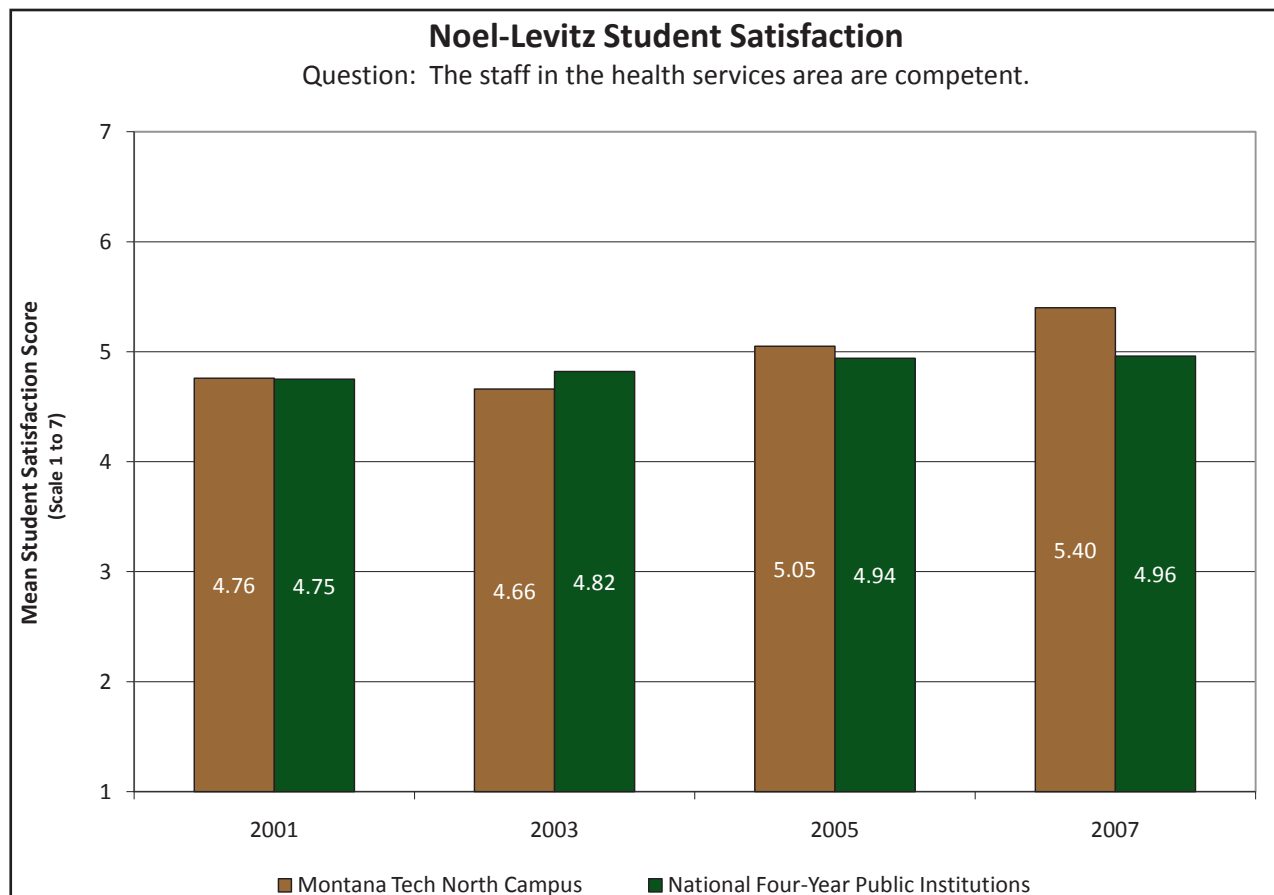


FIGURE 3.D.9: STAFF COMPETENCY

In addition, Montana Tech employs two full-time, licensed professional therapists who provide both disability services and personal and career counseling to students on the North and South campuses. The web link for information on the Student Life Counselors is http://www.mtech.edu/student_life/counseling/.

3.D.13 Student housing, if provided, is designed and operated to enhance the learning environment. It meets recognized standards of health and safety; it is competently staffed.

The Montana Tech Office of Residence Life is dedicated to assisting students in all facets of residential living and is committed to furthering the college students' development outside the classroom. Its priority is to promote and foster growth in all areas of students' lives including social, emotional, physical, cultural, and ethical issues. Tech's residence halls provide a safe, clean, and orderly environment in which students are enabled to develop and grow.

The housing staff includes four full-time employees. The Director, a live-in professional, oversees all operations of the program and is a member of the Association of College and University Housing Officers-International (ACUHO-I)

and the Association of Intermountain Housing Officers (AIMHO). An administrative assistant aids the director with day-to-day operations and office paperwork, and two professional custodians maintain residence hall cleanliness. Students are also employed as desk workers and custodians to provide additional services to residents.

Each floor in the residence halls and each complex in apartment housing is staffed by a Resident Assistant (RA), an upper-class student who lives in the residence halls and is primarily concerned with the welfare of the students on his/her floor. RAs enforce university policies, disseminate campus information, and plan monthly activities. RA training focuses on meeting student needs by developing communication and confrontation skills and by increasing knowledge of campus and community resources. All RAs attend CPR, First-Aid, and emergency response training.

RAs and the director develop a full calendar of programs that address student learning, engagement, and development in the residence halls. All RAs are responsible for one program a month for their floors in addition to two all-hall programs planned by the entire staff. The Residence Hall Association (RHA), a student-led organization for residence hall students, also plans programs and holds meetings to inform residents about upcoming events and to receive feedback about the group's efforts. Traditional RHA programs include a campus-wide talent show, bowling and movie nights, and various holiday celebrations.

Surveys of Montana Tech residents have historically shown an above average level of satisfaction with residence hall living. (Please see Exhibit 3.B.VI: *Residence Hall Surveys*.)

Montana Tech generally houses 300 students in two traditional residence halls. The buildings offer single, double, and suite-style rooms. Front doors to the buildings are locked at night, and individual hall wing doors are always closed to maintain security and provide residents with privacy. Card readers are planned for the front doors to eliminate the security liability of lost keys and to track late-night building entrance. Campus Security makes regular rounds, and RAs rove the halls. Student conduct policies exist to ensure a reasonable noise and disturbance level and to provide a pleasant living environment for all. (See Exhibit 3.D.IX: *Residence Hall Handbook*.)

Over the last four years, the 300 bed capacity of the two residence halls has not been able to meet the demand for on-campus housing. Since 2006, occupancy has exceeded 300. (See Figure 3.D.10: Occupancy.)

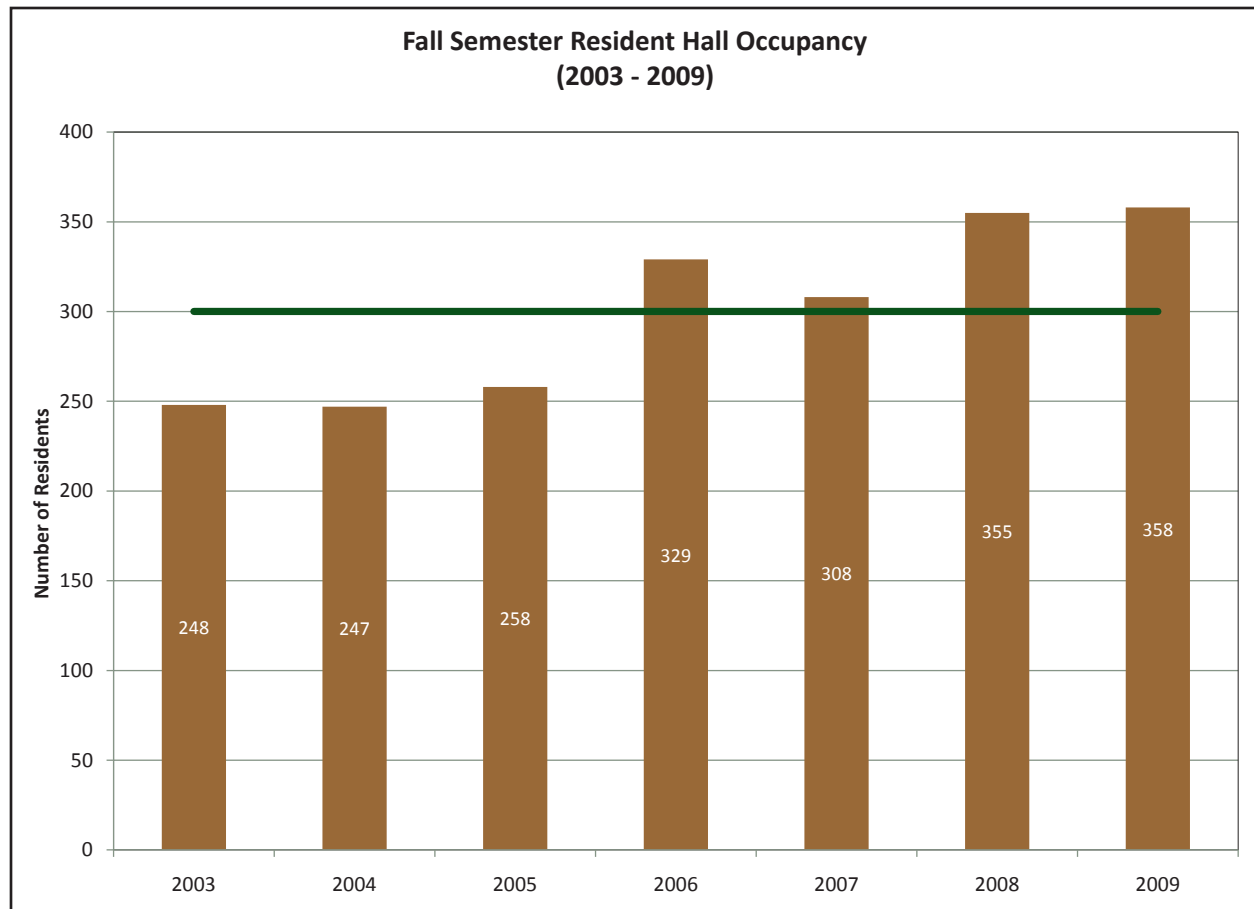


FIGURE 3.D.10: OCCUPANCY

The last two years, more than 50 students were assigned housing in apartment units that have been converted for residence hall living. These units are taken offline until all first-year students are guaranteed housing for the Fall Semester. Student Services is currently monitoring and evaluating housing options to address higher enrollments. In addition to placing students in Montana Tech's Apartment Complexes, Tech is currently discussing with the Butte community possible renovation of the MoFAB, formally the YMCA, and use of the McKinley School. Both buildings are located to the east on Park Street, and are within walking distance of the campus.

Montana Tech Apartment Housing is comprised of 60 apartment units located approximately one mile north of the campus. Apartments are rented to university-related tenants according to a priority list on which freshmen students have first precedence. Students with dependants have next precedence, and then upper-class students, and finally faculty/staff have last preference. Apartment units have been renovated as needed to replace wooden paneling with sheet rock and to upgrade appliances. A student apartment manager lives on-site and is available to assist with tenant needs, perform routine maintenance, and to report necessary repairs.

3.D.14 Appropriate food services are provided for both resident and nonresident students. These services are supervised by professionally trained food service staff and meet recognized nutritional and mandated health and safety standards.

The Montana Tech Student Union houses the campus dining services, which includes the Marcus Deli Buffet, Fire House Grill, Digger Subs, and a convenience store. The dining hall atmosphere allows all of the campus population to have a meal in the same facility, thus encouraging greater interaction and sense of community. Montana Tech Dining Services also provides two satellite operations, the Coffee Mill located in the Mill Building and the College of Technology (COT) Snack Bar located on the South Campus. The Marcus Deli Buffet provides a variety of nutritious, buffet-style meals. There is an ever-changing choice of entrees, homemade soups, extensive salad bar, fresh fruits, baked desserts, and traditional fast-food favorites. The Fire House Grill features traditional fast-food favorites including hearty burgers, fries, breakfast items, fresh subs, and much more. The convenience store carries a wide variety of grab-and-go products for those on the run. The Coffee Mill provides a cozy atmosphere, featuring Starbucks gourmet coffee and espresso, a fast and efficient grab-and-go menu, and fresh baked pastries. The College of Technology Snack Bar features traditional fast food favorites, including burgers, sandwiches, salads, fries, and breakfast items. This operation also carries a variety of grab-and-go selections, which include beverages, baked goods, and chips.

All Dining Services staff are trained through the Serve-Safe program. This comprehensive program, from the National Restaurant Association, provides training in the proper handling of food products for public consumption and is approved by the State Health Department. All employees of dining services are required to be Serve-Safe certified or, become certified within one year of hire. Training is provided annually to ensure that all food service products and practices follow nationally recognized standards for nutrition, health, and safety.

In an effort to be more Earth-friendly, Dining Services established: the “Farm to College” program, which helps lessen the carbon footprint on earth; eliminated dining room trays, reducing hundreds of pounds of waste and saving thousands of gallons of water; and switched to green products used in the dish machine. The campus Dining Services are inspected periodically by the Montana Department of Public Health and Human Services. (See Exhibit 3.D.X: *Dining Services Inspection Reports.*)

CLOSING THE LOOP

Student Satisfaction Survey Gaps (Figure 3.D.11) pointed to a low satisfaction with food service selection available in the cafeteria. A menu committee was formed to implement 41 new items requested from surveys and to meet with students on the menu cycle for the following Spring semester. When implementing new items, the team made sure to select locally or regionally grown items to support Tech's marketing campaign of "Farm to College," which was rolled out in Spring 2008 with an Orientation luncheon that had the theme "Taste of Montana."

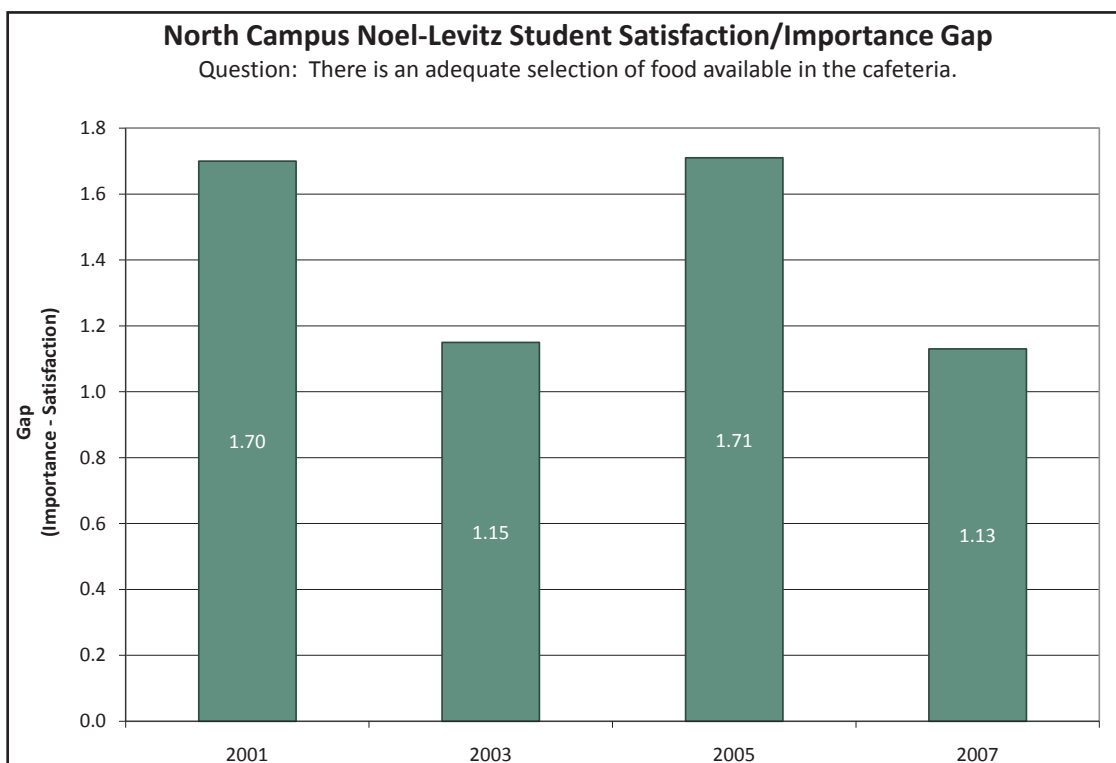


FIGURE 3.D.11: MENU SELECTION

In Fall 2009, Dining Services implemented a comment card program. The Director responds weekly and posts all responses on the bulletin board in the dining hall. This strategy provides a constant source of feedback to “tune in” to student eating habits and preferences and allows Tech to improve service to students on a regular basis. (See Exhibit 3.B.VII: *Dining Hall Surveys*.)

The “Farm to College” program was created to encourage the purchase of products from local and regional sources. Tech Dining Services purchases approximately 12% of products from local and regional vendors. Some of those include the use of Park Street Pasties, Butte Produce and Bausch Potato, all of which are located in Montana. Dining Service’s goal is to maintain an ongoing effort to use local and regional products, and to expand the program where possible.

3.D.15 Co-curricular activities and programs are offered that foster the intellectual and personal development of students consistent with the institution’s mission. The institution adheres to the spirit and intent of equal opportunity for participation. It ensures that appropriate services and facilities are accessible to students in its programs. Co-curricular activities and programs include adaptation for traditionally under-represented students, such as physically disabled, older, evening, part-time, commuter, and where applicable, those at off-campus sites.

The Director of the Student Union/Student Activities develops, promotes, and manages co-curricular programs at Montana Tech. Student activity forums, field trips to National Parks, such as Yellowstone and Glacier, target under-represented and non-traditional students, as well as Tech’s part-time and commuter students from the South Campus. Activities for the entire student body include: comedy shows, magic shows, music, scavenger hunts, and trips to Lewis and Clark Caverns, to Fairmont Hot Springs, and to the Discovery Ski Resort. In Fall 2009, a new sound system and projector were purchased to offer state-of-the-art theater quality for enhanced viewing of movies in the auditorium.

The Associated Students of Montana Tech (ASMT) hires a student in a paid stipend position, as the Student Activities Chair (SAC), to provide co-curricular activities. SAC programming for Fall 2009 included a field trip to Boulder Hot Springs that targeted Residence Life Students, an arts and crafts evening that targeted non-traditional students, and the annual Holiday Stroll.

SAC further oversees Spring Semester “M” Days. “M” Days is a week-long event that first began in 1958 when students hiked to the hill north of the campus (called the “M”) to clean the walking trail and white-wash the rocks that formed the letter M. In 1962, the M was wired for lights and today is still the only lighted collegiate letter in the U.S. The 2009 “M” Day events included a battle of the bands, country music in the mall, barbecues, a race to the “M,” the annual white-washing of the “M,” and cleaning the hiking trail.

Club Rush, an annual semester event, is offered to entice students to join and formulate campus clubs and organizations. Approximately 40 clubs are active and

SELF-STUDY 2010

meet regularly. A number of clubs attend national conventions related to their degree area. Clubs help with campus and community events, such as the Circle K and student athletes' annual involvement with the community-wide food drive.

ASMT identifies each club by requiring formalization of officers, presidents, vice-presidents, treasurers, and advisors. ASMT oversees development of the club/organization's constitution and assigns faculty/staff as advisors and mentors. In turn, the club/organization is granted rights and privileges that include: petitioning for funds from ASMT, access to college facilities, use of audio/visual equipment, on-campus fund raising, and purchase order privileges. (See Exhibit 3.D.XI: [2009/2010 Clubs](#).)

The COT Student Leadership established in Fall 2008 promotes a sense of community within the College of Technology campus, to enhance a sense of belonging with Montana Tech at large and to provide service to the Butte community. This is done through the kind of activities and events which offer fun and through the kind of educational components which enrich the college experience for students. Activities include but are not limited to the Welcome Back Lunch, Homecoming participation, COT Halloween Open House, Thanksgiving Lunch with educational theme, collections for food baskets, Easter event, and Graduation celebration/lunch. Montana Tech's COT Counselor acts as advisor with the support of the Dean and COT administrative staff.

3.D.16 The co-curricular program includes policies and procedures that determine the relationship of the institution with its student activities; identifying the needs, evaluating the effectiveness, and providing appropriate governance of the program are joint responsibilities of students and the institution.

All student organizations and clubs must submit a completed Student Organization Application form that includes appropriate club officers/advisor signatures, and a developed constitution. (See Exhibit 3.D.XI: [Student Organization Application](#).) The organization must affirm compliance with Montana Tech's commitment to and practice of non-discrimination with regard to race, creed, color, sex, to natural origin, age, handicap, and to marital status. The organization's officers and members must read, understand, and abide by Montana Tech's Alcohol Policy. The Student Union Director conducts annual training for all clubs and advisors at the beginning of the Fall Semester.

3.D.17 If appropriate to its mission and goals, the institution provides adequate opportunities and facilities for student recreational and athletic needs apart from intercollegiate athletics.

Montana Tech's Campus Recreation program is headed by the Director of Campus Recreation who is also the HPER Supervisor. The Director markets and administers both the intramural (recreational) sports and the outdoor recreation programs. Funds for the intramural and the outdoor programs are allocated each year by the student-elected officers of ASMT.

Typical program offerings include common team sports for the men, women, and co-recreational divisions and individual competition events for men and women. New event schedules are presented each semester. For example, Spring Semester 2008, there

were a total of 28 intramural basketball teams, 22 men’s teams and 6 women’s teams for a total of 175 students participating. Also, a total of 18 intramural softball teams, 10 men’s teams and 8 co-rec teams with 200 students participating. Fall Semester 2008, there were 15 intramural flag football teams, 8 men’s teams and 7 co-rec teams with approximately 175 students participating. In the Fall of 2008, there were 24 co-rec teams and 200 students participating in intramural volleyball. Student satisfaction with the variety of intramural activities offered has steadily increased since 2001. Figure 3.D.12 depicts increased satisfaction with the variety of intramurals offered.

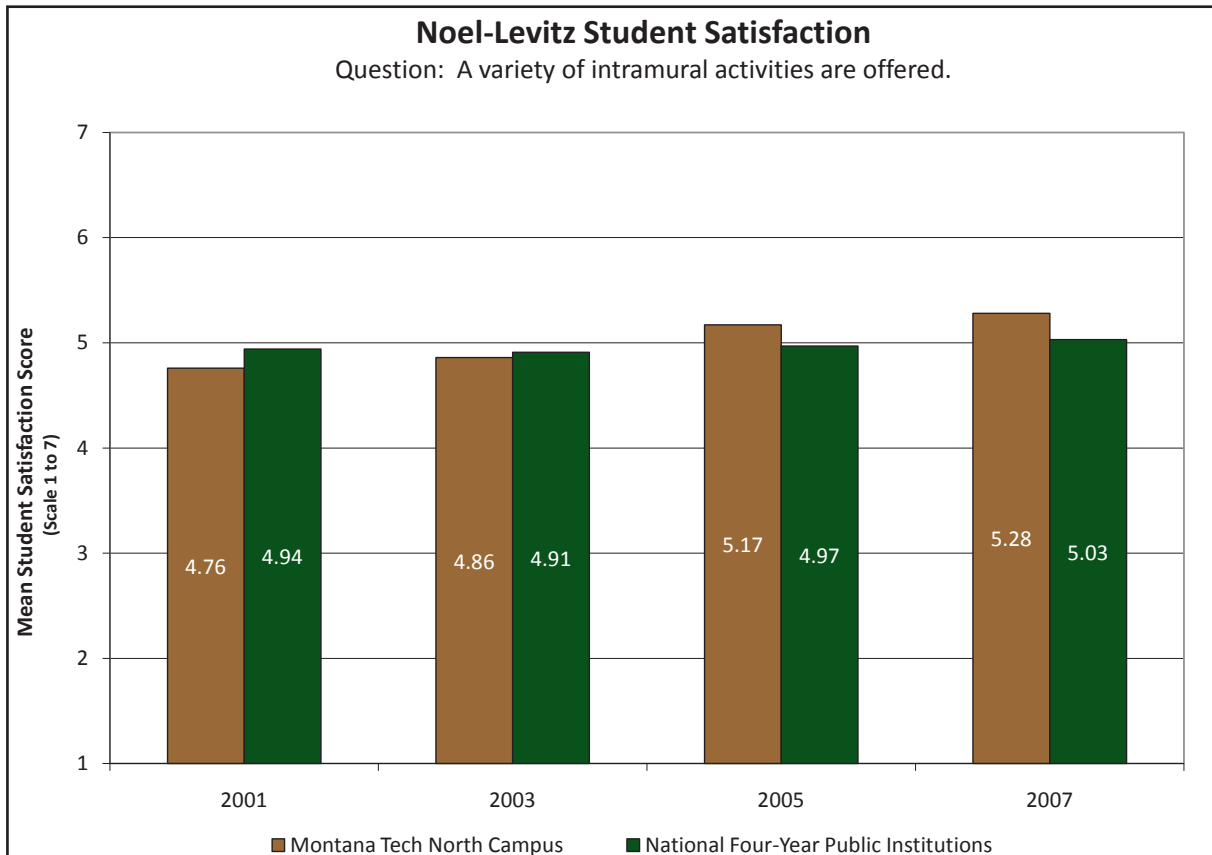


FIGURE 3.D.12: INTRAMURAL ACTIVITIES

Other indoor sports activities sponsored by the Campus Recreation Department are dodge ball tournaments each year and a spring racquetball league followed by a tournament.

The outdoor recreation portion of the program offers equipment rentals (backpacks, tents, sleeping bags, snow shoes, cooking equipment, coolers, rafts, and kayaks) for outdoor activities, day hikes, and for cross-country skiing.

The Campus Recreation program takes full advantage of its geographical location to enable students to engage in outdoor pursuits. The objective of the outdoor recreation part of the program is to make available outdoor experiences that may otherwise not

SELF-STUDY 2010

occur in the leisure time of college students.

Montana Tech offers substantial facilities for the leisure interests of students. The Health, Physical Education, and Recreation Complex (HPER) contains four basketball courts, six handball/racquetball courts, a six lane/25 meter swimming pool, volleyball courts, weight training room, cardio room, dance and aerobics room, and a full complement of shower/locker rooms for men and women. The HPER gymnasium underwent a significant upgrade in the Summer of 2007 and is now one of the most modern arenas in the Frontier Conference. This was a public-private partnership with approximately half of the total project funds generated by private donors.

The HPER gymnasium is used extensively, not only by intramurals, but also by Montana Tech varsity athletics. Thus, lack of available gym time can be a problem in the Fall/Winter. With all three varsity teams practicing (volleyball, men's and women's basketball), there is little time for intramurals or general use of the gym for students.



Management does provide some open gym time for all students to exercise and socialize; however, at times it is almost impossible to provide enough time for everyone.

In an effort to address the needs of all students, the campus leadership, in conjunction with the student government, delivered a resolution to the Montana Board of Regents to approve a student fee aimed at expanding and renovating the HPER complex. This fee will generate \$3 million over the next 15 years and was approved by ASMT and taken to a vote of the student body. In the Spring of 2009, the Chancellor approached the Regents with Tech's proposal. In September of 2009, the resolution passed and the process to upgrade and expand the building began. An architect was selected in December of 2009 and the construction project is slated to begin in the Spring of 2010.

A number of outdoor recreation areas are available on the Tech campus: Leonard field, practice fields, and one lighted combination baseball and football area. These fields are shared-usage fields which are used by varsity football, intramurals, by rugby, soccer, and by some community events.

3.D.18 If the institution operates a bookstore, it supports the educational program and contributes to the intellectual climate of the campus community. Students, faculty, and staff have the opportunity to participate in the development and monitoring of bookstore policies and procedures.

Tech provides a full service, on-campus bookstore that has a textbook support system, a full array of academic/office supplies, personal hygiene items, computer supplies, candy/snacks, and college logo clothing. The Bookstore website is <http://www.montanatechbookstore.com/>. Specialized items can be single-ordered for customer convenience. Hours of operation are favorable to students and faculty/staff

alike. Input on bookstore policies is gained by the Bookstore Advisory Committee which is co-chaired by the Bookstore Director and the Director of the Student Union. Representatives from ASMT, Faculty Senate, and RHA meets as needed with the Bookstore Advisory Committee. Changes as a result of committee input include: a new Cash Register/Point of Sale/Inventory system (Spring 2009); the South Campus store merged with the North Campus; and an interactive Website for online purchases. Figure 3.D.13 depicts increased student satisfaction with helpful Bookstore staff.

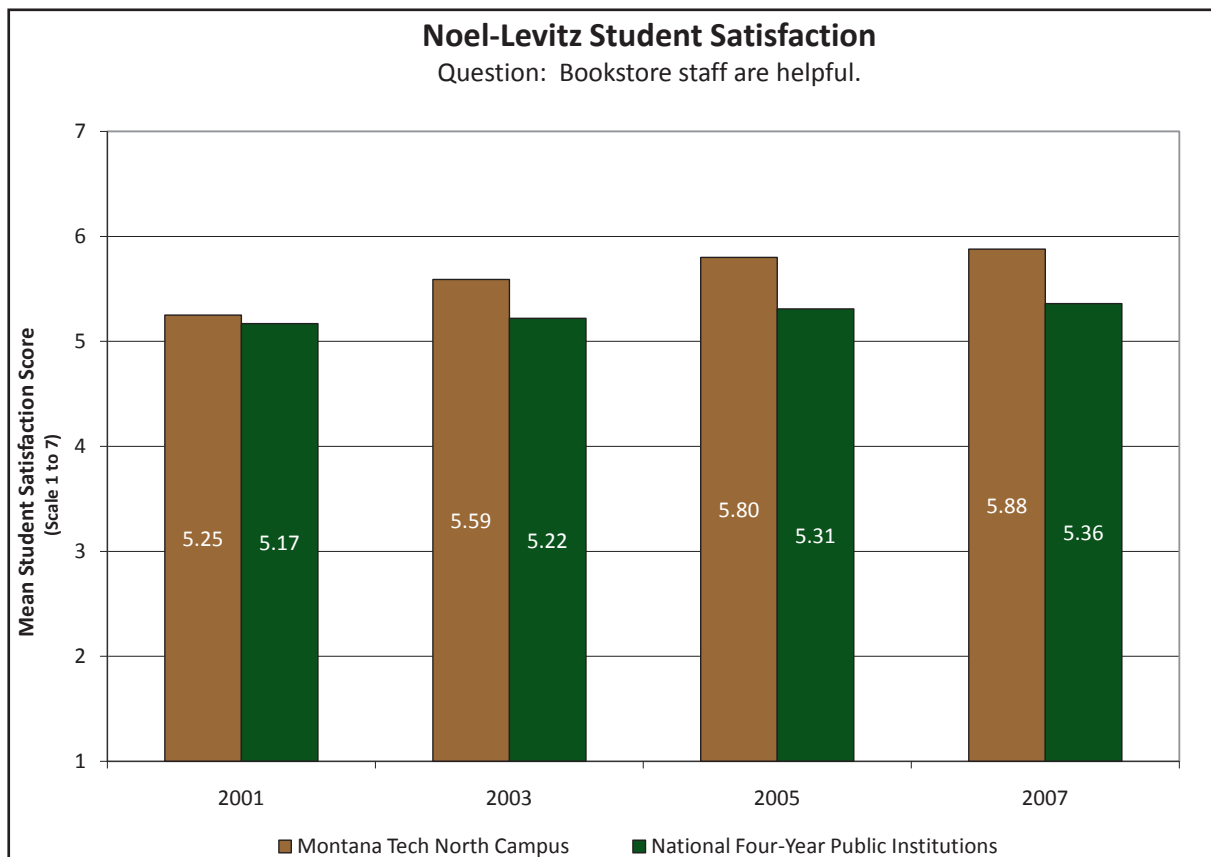


FIGURE 3.D.13: HELPFUL BOOKSTORE STAFF

3.D.19 When student media exist, the institution provides for a clearly defined and published policy of the institution’s relationship to student publications and other media.

The Publications Board is an ASMT appointed and approved committee. The ASMT President, Vice President, and Treasurer serve on the Publications Board along with two appointed senators, the editor of the campus newspaper (Technocrat), and the manager of the campus radio station (KMSM 107.1FM). The Publication (Pub) Board monitors and regulates the student-run media services, thereby confirming that First Amendment policies are routinely reviewed to ensure proper and ethical applications. Montana Tech students serve in the majority number on the Publications Board. (See Exhibit 3.D.XII: *Campus Newspaper – Technocrat.*)

SELF-STUDY 2010

STANDARD 3.E – INTERCOLLEGIATE ATHLETICS

If the institution participates in intercollegiate athletics, these programs and financial operations are consistent with the educational mission and goals of the institution and are conducted with appropriate oversight by the governing board, chief executive officer and faculty.

3.E.1 Institutional control is exercised through the governing board's periodic review of its comprehensive statement of philosophy, goals, and objectives for intercollegiate athletics. The program is evaluated regularly and systematically to ensure that it is an integral part of the education of athletes and is in keeping with the educational mission of the institution.

Montana Tech's Athletic Committee is composed of faculty, staff, and administration. This committee meets quarterly and reviews coaches' evaluations and sets policy for athletics. The committee's priority is to develop a student-athlete handbook to better communicate what Montana Tech expects from its student-athletes. At Montana Tech, student comes before athlete, and our goal is to compete for championships with students that graduate. The motto created for our student athletes is *students, leaders, champions*.

The Athletic Director reports directly to the Chancellor and both strive to ensure that the entire athletic program enhances the mission of the institution. The Athletic Department's policies and procedures are evaluated by the Chancellor every year. The Chancellor will review coaches' performance, graduation rates, community involvement, student-athlete experience, and fiscal prudence.

Montana Tech is an active and contributory member of the Frontier Conference of the National Association of Intercollegiate Athletics (NAIA) and fully complies with the rules, regulations, and policies of both governing bodies.

3.E.2 The goals and objectives of the intercollegiate athletic program, as well as institutional expectations of staff members, are provided in writing to candidates for athletic staff positions. Policies and rules concerning intercollegiate athletics are reviewed, at least annually, by athletics administrators and all head and assistant coaches. The duties and authority of the director of athletics, faculty committee on athletics, and others involved in athletics policy-making and program management are stated explicitly in writing.

Montana Tech Athletics has a clear mission and vision statement that outline the goals and objectives for all involved.

FIRST CHOICE VISION: We strive to be the *First Choice* institution for top student-athletes in Montana and the Northwest. Our vision to be *First Choice* also extends to the parents of student-athletes, fans, community members, donors, and the area media.

MISSION: The Athletic Department at Montana Tech is committed to the University's mission to meet the changing needs of society by supplying knowledge

and education through a strong undergraduate curriculum. The Athletic Department's mission focuses on three interrelated communities:

1. **Student-Athletes:** The mission is to provide the student-athlete with opportunities and support that will allow the student athlete to compete academically and athletically at the highest level. It is the mission to build life-long characteristics of dedication, excellence, pride, and leadership.
2. **University Community:** The mission is to operate with quality and integrity as a focal point for school identity and spirit while complementing the academic culture and social facets of University life.
3. **Butte Community:** The mission is to support the community through public service and to be a source of pride and entertainment to Butte and southwest Montana with successful programs that graduate student-athletes and thereby benefit the local and state economies.

At the beginning of each season, the coaches submit their goals and expectations to the Athletic Director. At that time the Athletic Director communicates to the coaches the expectations of the University. At the end of the year, the coach and his/her respective program is reviewed. The annual performance reviews are completed by the Athletic Director and provided to the athletic staff. The areas of review include,

but are not limited to: recruiting, coaching effectiveness, scheduling, preparation, public relations, and student-athlete development, and budget-to-actual fiscal performance.



The Athletic Director also attends the NAIA National Convention to stay abreast of rules on intercollegiate athletics and meets with the faculty representative to make sure that policies and procedures are being followed. All rule changes and other pertinent information are shared with the coaches and staff.

Non-athletic department faculty and staff regularly attend Athletic Department staff meetings to update the athletic department on University procedures and policies. Team athlete development, including academics, is reviewed annually with coaches in program reviews with the Athletic Director.

3.E.3 Admission requirements and procedures, academic standards and degree requirements, and financial aid awards for student athletics are vested in the same institutional agencies that handle these matters for all students.

Montana Tech treats student-athletes and non-student-athletes exactly alike. A prospective student-athlete must complete all of the admission, registration, and academic standards requirements of the University.

For the purpose of admissions, all student-athletes must meet NAIA eligibility standards and Montana Tech admission standards. Admission of student athletes is evaluated by Enrollment Services using the same process and standards for all Tech

SELF-STUDY 2010

students (See Catalog pp. 5-11). Athletic eligibility is verified at the beginning of each season by the Office of Enrollment Processing, Athletic Director, coach, and faculty representative. Privately-funded athletic scholarships and state-awarded waivers are chosen by recommendation of the coaching staff.

In terms of financial aid, student-athletes apply for all state, federal, and non-athletic department scholarships through Enrollment Processing as do non-athletes. The Athletic Department's privately-funded scholarships are chosen from the recommendations of the respective coaching staff. Montana Tech abides by the NAIA rules as to the number of scholarships allowed for each athletic program. Montana Tech does not provide the full level of scholastic aid allowed by the NAIA. A report is filed each Fall with the NAIA outlining our Institutional Financial Aid.

Academic standing is evaluated for all students by the Office of Enrollment Processing (see Catalog p. 25). Additionally for student-athletes, eligibility is verified at the beginning of each season by the Office of Enrollment Processing and signed by the Director of Enrollment Services, Athletic Director, coach, and faculty representative. Graduation and degree requirements for all students are handled by the academic departments and Enrollment Processing with the same process and criteria for athletes and non-athletes. (See Catalog pp. 26-28.)

As outlined in Table 3.E.I, Montana Tech student-athletes excel academically with a 6-year graduation rate of 62% and a low transfer-out rate of 16% (http://www.mtech.edu/onestop/grad_comp_rates.html).

TABLE 3.E.I: ATHLETIC GRADUATION RATES

STUDENT-ATHLETES WHO RECEIVED ATHLETICALLY-RELATED STUDENT AID	4 YEAR AVERAGE STUDENT-RIGHT-TO-KNOW 150% NORMAL TIME	4 YEAR AVERAGE ATHLETE STUDENT-RIGHT-TO-KNOW TRANSFER-OUT RATE
Football	77%	11%
Men's Basketball	33%	17%
Men's Golf	25%	50%
Women's Basketball	83%	17%
Women's Golf and Volleyball	62%	15%

Table 3.E.II outlines the three largest areas of study for athletes, followed by the same three programs across the entire campus population minus the student athlete cohort.

TABLE 3.E.II: STUDENT-ATHLETE & NON-STUDENT-ATHLETE MAJORS

STUDENT ATHLETE MAJOR AREA					
	2004	2005	2006	2007	2008
Engineering	61%	54%	49%	42%	50%
Business	14%	18%	25%	30%	26%
OCC Safety & Health	11%	11%	10%	13%	10%
TOTAL	86%	83%	85%	85%	86%
NON-STUDENT ATHLETE MAJOR AREA					
	2004	2005	2006	2007	2008
Engineering	47%	52%	55%	59%	61%
Business	11%	10%	11%	9%	10%
OCC Safety & Health	4%	5%	4%	4%	4%
TOTAL	62%	68%	70%	72%	75%

Figure 3.E.1 demonstrates the top five bachelor degrees earned by our student-athletes.

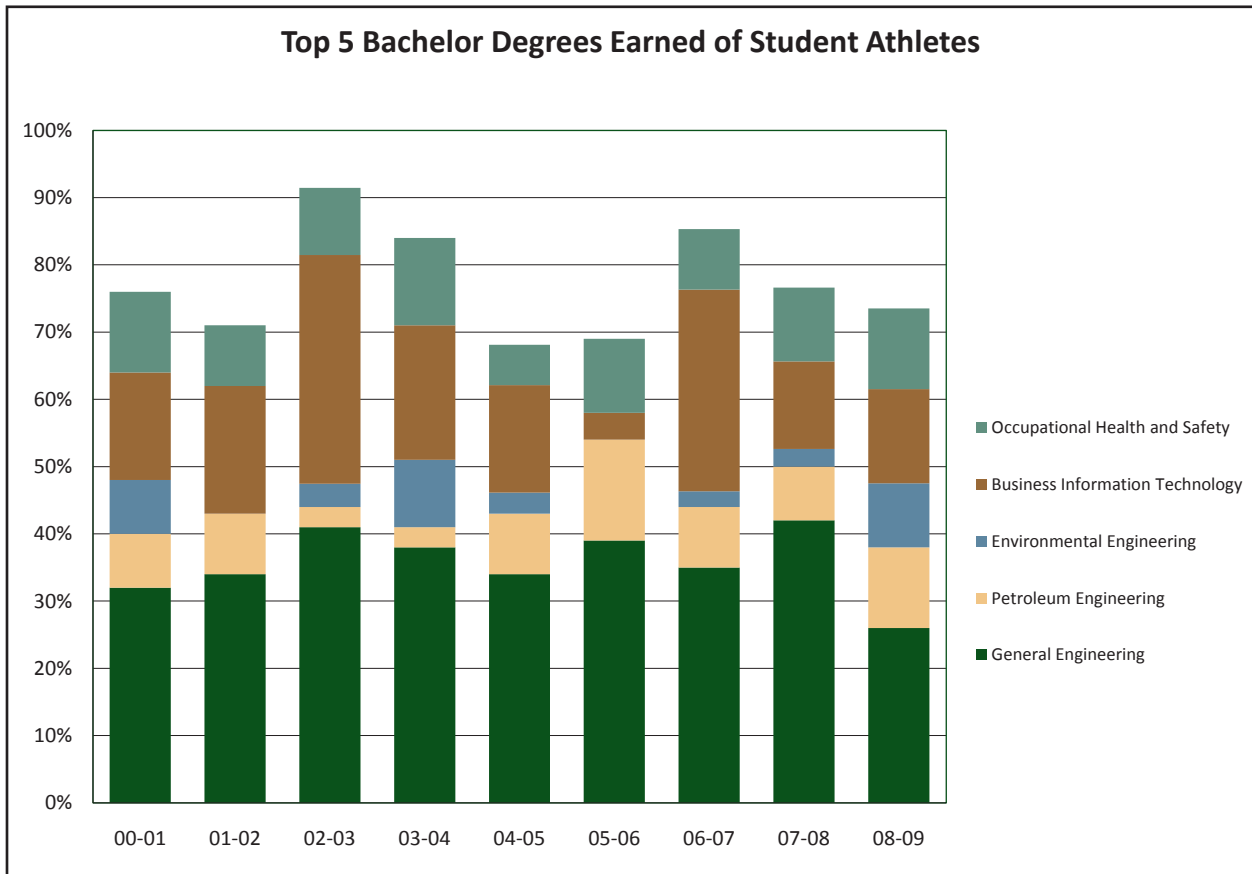


FIGURE 3.E.I: TOP FIVE BACHELOR DEGREES EARNED BY STUDENT-ATHLETES

SELF-STUDY 2010

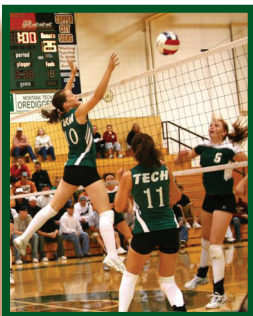
3.E.4 Athletic budget development is systematic; funds raised for and expended on athletics by alumni, foundations, and other groups shall be subject to the approval of the administration and be accounted for through the institution's generally accepted practices of documentation and audit.

The Digger Athletic Association (DAA) is a separate 501(c)(3) non-profit corporation that serves as the private-fundraising arm of the Athletic Department. The DAA raises money for student aid, assistant coaches' salary supplements, and operational assistance. All athletic dollars raised or donated are accounted for separately by the Montana Tech Foundation. All expenditures from these funds are subject to institutional oversight and audit.

A budget for DAA is developed by the Board of Directors of the Association in cooperation with the Athletic Director. The Chancellor or his designee reviews and approves the budget and budget allocations annually.

3.E.5 The institution demonstrates its commitment to fair and equitable treatment of both male and female athletes in providing opportunities for participation, financial aid, student-support services, equipment, and access to facilities.

Montana Tech complies with Title IX. Montana Tech currently maintains and supports six programs: football, volleyball, men's and women's basketball, and men's and women's golf. These programs are funded with similar budgets based on the participation numbers in each program. In mirrored programs, such as men's and women's basketball and men's and women's golf, pay and operational dollars provided are equal and our athletic department makes every effort to insure all programs are treated with respect and equity. Each program gives student-athletes the same opportunities for personal growth. Aid is provided on an equitable basis and no student-athlete is denied access to equipment and facilities.



3.E.6 The institution publishes its policy concerning the scheduling of intercollegiate practices and completion for both men and woman that avoids conflicts with the instructional calendar, particularly during end-of-term examinations.

Montana Tech is firm in its belief that student-athletes attend this University to graduate. To help the student athletes in their quest, all programs conduct grade checks and require mandatory study hall for freshman athletes. The University has a written policy that prohibits any practices or games during finals week. As a result, student-athletes outperform the student general population in graduation rates and GPA.

Montana Tech and the Frontier Conference have placed a high priority on the student-athlete's time. When scheduling games, the conference and the coaches make every effort to avoid missing class time. Recently, the football and golf seasons were shortened to provide less travel time and more classroom time for student-athletes.

If a student-athlete has a scheduling conflict with a course, the student is required to inform the instructor prior to missing the class. The Student Handbook clearly states that any work be completed prior to leaving or made up with the consent of the instructor. At Montana Tech, academics come first and student-athletes are not penalized for missing practice or training sessions due to class requirements.

POLICY 3.1 – INSTITUTIONAL ADVERTISING, STUDENT RECRUITMENT AND REPRESENTATION OF ACCREDITATION STATUS

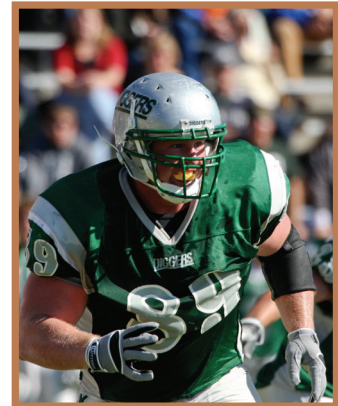
POLICY 3.1.A – ADVERTISING, PUBLICATIONS, PROMOTIONAL LITERATURE

Institutional recruitment and advertising responsibilities are shared among the Advancement and Development staff. Led by the Vice Chancellor of Development and Student Services, the staff consists of the Directors of Public Relations and Marketing, Enrollment Management, Enrollment Processing, Career Services, Alumni Affairs, Montana Tech Foundation and the Associate Vice Chancellor of Student Affairs. Individuals from these offices are trained in all aspects of institutional advancement. From recruiting prospective students to soliciting financial support, these staff members are prepared to represent Montana Tech in any number of settings.

This collaborative approach provides consistency and accuracy throughout Montana Tech’s advertising, publications and promotional literature. Depending on the project, an appropriate team is assembled from Advancement and Development staff to produce the promotional product. For example: the viewbook content and design is led by a member of the Enrollment Services staff. However, additional team members give input to improve the overall content and design of the publication. This team approach ensures a consistent message from market to market.

The comprehensive marketing approach was further strengthened in 2005. At that time, Montana Tech contracted with higher education consultant, Stamats, in a branding exercise. One of the outcomes of this relationship was a “brand creative” workbook. This established colors, logos, images fonts for the school that are used consistently in our publications. The “Get Into It!” tagline was selected because it exemplifies the students’ experience at Montana Tech.

All publications, advertising, web pages, and promotional literature are designed to present a positive accurate image of the university. The marketing materials are conceived in-house and produced in cooperation with the University of Montana



SELF-STUDY 2010

print shop. All recruiting materials are created within the guidelines of the National Association of College Admission Counseling (NACAC) Statement of Principles of Good Practice.

Additionally, all marketing materials comply with NWCCU publication standards, featuring successful student outcomes and presenting key messages concerning: educational programs, academic options, quality programs and faculty, student access, student services, the student experience as well as tuition, costs and financial aid availability. (See Exhibit 3.D.XIV: *Montana Tech Publications*.)

POLICY 3.1.B – STUDENT RECRUITMENT FOR ADMISSIONS

Enrollment Services is responsible for recruitment and processes all applications for admission. Recruitment activities encompass most of the traditional means used on campus around the country, such as high school visits, college fairs, Tech Days, hosting campus visitors, direct mail, and e-mail.

When the offices of Enrollment Services and Enrollment Processing were created, the role of the Admission Counselor evolved. Now called Enrollment Representatives, the responsibility of these individuals has been expanded to include a conscious effort to impact retention. With the expanded duties came expanded opportunities. Enrollment Representatives now have the opportunity to advance via a career ladder. This effort to retain Enrollment Representatives is critical when establishing relationships with high school counselors and affecting the retention of new students.

Enrollment Representatives are encouraged, through promotion and other means, to participate in state, regional, and national professional organizations. They are further encouraged to take leadership roles in these organizations. As a part of this professional development, industry standards and ethics are experienced and maintained.

Student recruitment is further enhanced through the participation of other members of the Advancement and Development staff. In all instances, individuals who recruit for the University are trained in a manner consistent with the NACAC - Statement of Principles of Good Practices. Graduate student recruitment is largely conducted by faculty and the graduate studies office.

POLICY 3.1.C – REPRESENTATION OF ACCREDITATION STATUS

Montana Tech complies with the NWCCU policy regarding representation of accredited status. Accreditation and memberships are stated on page 4 of the catalog. (See Exhibit 3.A.III: [2009/2010 Montana Tech Catalog](#).)

CLOSING THE LOOP

The past two years have been an interesting and exciting time for Montana Tech's student services organization. In that timeframe Montana Tech lost its Registrar, Associate Registrar, and Assistant Registrar. This loss of institutional knowledge left a void, but also provided a unique opportunity to redefine our student-service model. In the Spring of 2008, Montana Tech made a move to a student-centered organization that focused delivery of services entirely on student needs. The goal was to improve service, contribute to increased retention, and better serve faculty by streamlining processes and procedures.

Strengths

- » **Record Enrollment in 2009** - History was made as more students attended this Fall than ever before. Montana Tech's overall enrollment was up 12% compared to Fall 2008. Montana Tech's North Campus headcount was up 10% and South Campus headcount was up 20%. With this enrollment, Montana Tech celebrates a significant milestone toward achieving the enrollment goals slated in our VISION 2025. As we look to the challenges of the future, these enrollment figures significantly strengthen our position.
- » **Excellent Placement Rates** – Montana Tech continues to enjoy outstanding placement of our graduates. This success is not by accident. Our entire team works to solidify our relationship with industry representatives and continually looks for new opportunities for our graduates. Over the past 10 years, 96% of the graduates seeking employment have been successful.
- » **One-Stop-Shop** – The creation of an office that will answer the vast majority of our students' and faculty questions regarding admissions, registration, and financial aid provides an unprecedented level of service to our students. This environment of student-centered services assists students as they make their way through their academic career.

CLOSING THE LOOP

- » **New Scholarship Application Process** – The STARS online scholarship application was implemented in 2009-10. STARS walks students through the application process and matches them to available aid. This process has improved the accuracy of awards, synchronized the donor's wishes with the appropriate student, increased efficiency, and minimized human error in scholarship allocation.
- » **First Year Experience (FYE)** – The goal is to increase third semester retention and provide a robust college experience to each freshman and transfer student on campus.
- » **Enhanced Use of Technology** – Montana Tech has invested in the purchase and development of computer systems as well as time and energy in training staff to utilize these systems. Montana Tech is the first and only University in Montana to convert to a paperless student record system. The in-house student recruitment database is now web-enabled so recruiters can access the student records on the road and faculty can access from home.
- » **Strong Brand and Image Campaign** - On July 1, 2006, Montana Tech rolled out a new brand and image campaign aimed at differentiating our campus. The tagline, "Get Into It!" was selected because it exemplifies the students' experience at Montana Tech. *Get Into It!* portrays the following brand attributes: Quality Focused, Refreshingly Real, Exceptionally Driven, Impressively Personal, and Unexpectedly Affordable. The brand portrays Montana Tech as a challenging institution for hands-on, success-oriented students. The campus will develop the next phase of the marketing plan during Spring 2010.

Opportunities for Improvement

Despite the many excellent initiatives currently underway, Montana Tech continues to see opportunities for the future:

- » The continued maturation of the One-Stop-Shop concept will cause refinement of processes and improvement of service to students and faculty.
- » Our HPER complex will undergo a significant renovation aimed at allowing the general student more availability to campus recreation.

CLOSING THE LOOP

- » The implementation of a new One Card/Digger Card system will provide improved security, better implementation of current meal plan programs, and greater access to students and staff to vending and outside services.
- » As enrollment continues to grow and demand on our campus infrastructure increases, it is evident that we need to invest in critical student service elements, including but not limited to:
 - Additional on-campus housing
 - Housing aimed at specific international cultures and desires
 - More parking availability on the North Campus
 - Better utilization of the COT (South Campus) facilities
- » The Enrollment Services team will continue to refine our recruitment strategies to maximize the return on investment.

Moving Forward

Using our VISION 2025 as a roadmap for our future, Montana Tech sees an aggressive and exciting future filled with accomplishments and significant challenges:

- » Montana Tech will house the Pacific Northwest's only Math & Science Academy to allow Montana's best and brightest high school juniors and seniors to attend Montana Tech their last two years of high school, earning an Associate degree and a high school diploma simultaneously. The academy will have a 40-bed residence hall tailored specifically to younger students.
- » The enhanced recruiting strategies, coupled with a marketing and advertising emphasis will provide Montana Tech with a larger and more diverse student population. Currently, a non-resident student provides significant financial benefit to the campus as compared to a resident student. Montana Tech will continue to grow our international and non-resident student body.
- » As a unit of the MUS, Montana Tech is dependent on the health of the state's economy. Based on the forecasts for the coming biennium, the challenges for Montana are significant. If these projections prove to be real, Montana Tech will be forced to reduce expenditures while serving more students.

SELF-STUDY 2010

EXHIBITS

- 3. A.I *Enrollment Services/Processing Organizational Chart*
- 3. A.II *Student Affairs Résumés***,
- 3. A.III *2009/2010 Montana Tech Catalog**
- 3. A.IV *2009/2010 Balanced Scorecards**
 - Sample Evaluations*
 - Performance Review Evaluation*
 - Montana Tech's Strategic Plan (<http://www.mtech.edu/about/strives.html>)*
 - Student Services Mission and Goals**
- 3. A.V *Auxiliary Projects & Planning*
- 3. B.I *Student Handbook*
- 3. B.II *Associated Students of Montana Tech (ASMT) Constitution**
- 3. B.III *College Community Expectations Program**
- 3. B.IV *Montana Tech Safety Policy*
- 3. B.V *Campus Emergency Action and Crisis Protocol Manual* and *Student Life Programs Emergency Procedures Manual*
- 3. B.VI *Surveys*
 - Student Satisfaction Inventories, *2007-2005 North*, *2007-2005 South*,*
 - Student Satisfaction Inventories 2003, 2001*
 - Residence Hall Surveys*
 - Counseling Surveys*
 - Dining Hall Surveys*
 - Student Activities Surveys*
 - Orientation Surveys/Evaluations*
 - Tech Day Surveys/Evaluations*
 - Tobacco Surveys*
 - Graduate Surveys*
 - Career Fair Surveys*
- 3. D.I *Convicted Applicant Offender Decision Matrix*
- 3. D.II *Application for Degree Forms*
- 3. D.III *Financial Aid Statistics, Default Rates, State Audits and Federal Program Reviews**

- 3. D.IV *2008/2009 SEM Scholarship Proposal*
- 3. D.V *Orientation Programs*
- 3. D.VI *Major Exploration Brochure*
- 3. D.VII *2008 Graduate Survey*
- 3. D.VIII *Health Center User Statistics*
- 3. D.IX *Residence Life Handbook*
- 3. D.X *Dining Services Inspection Reports*
- 3. D.XI *2009/2010 Recognized Clubs** and
Student Organization Application Form*
- 3. D.XII *Campus Newspaper – Technocrat***
- 3. D.XIII Student Right-to-Know Act -
Graduation/Completion & Transfer Out Rates and
Annual Security Report/Campus Crime and Disclosure
- 3. D.XIV *Montana Tech Publications - MNEWS, Vision 2025, and
marketing and recruiting publications*
- 3. D.XV *Impact of student services on students**

LIST OF FIGURES

- Figure 3.A.1 Student Affairs Organizational Chart*
- Figure 3.B.1 Foreign Student Enrollment & Country of Origin
- Figure 3.B.2 The campus is safe and secure for all students
- Figure 3.B.3 The Student Handbook provides helpful information about campus life
- Figure 3.B.4 Student Satisfaction Compared to Prior Years (North Campus)
- Figure 3.B.5 Student Satisfaction Compared to Prior Years (south Campus)
- Figure 3.B.6 One-Stop-Shop
- Figure 3.D.1 Financial Aid Disbursement - Five Year Average
- Figure 3.D.2 Financial awards are announced to students in a timely manner to be helpful in college planning
- Figure 3.D.3 Financial Aid Default Rates
- Figure 3.D.4 New Student Orientation services help students adjust to college
- Figure 3.D.5 Career Fair Employer and Student Participation
- Figure 3.D.6 DIGGERecruiting

SELF-STUDY 2010

Figure 3.D.7	Internship Program
Figure 3.D.8	2008 Graduate Survey
Figure 3.D.9	Staff in the health services area are competent
Figure 3.D.10	Residence Hall Occupancy
Figure 3.D.11	Adequate selection of food available in the cafeteria
Figure 3.D.12	Satisfaction with the variety of Intramural activities offered
Figure 3.D.13	Satisfaction with Bookstore staff
Figure 3.E.1	Top Five Bachelor Degrees Earned by Athletes

LIST OF TABLES

Table 3.A.I	Student Affairs Staff Profile*
Table 3.B.I	Enrollment Report*
Table 3.D.I	Admissions Report*
Table 3.E.I	Athletic Graduation Rates
Table 3.E.II	Athletic Majors and Non-Athletic Majors

*Required Documentation & Exhibits

** Suggested

S STANDARD 4 - FACULTY



STANDARD 4.A - FACULTY SELECTION, EVALUATION, ROLES, WELFARE, AND DEVELOPMENT

The selection, development, and retention of a competent faculty is of paramount importance to the institution. The faculty's central responsibility is for educational programs and their quality. The faculty is adequate in number and qualifications to meet its obligations toward achievement of the institution's mission and goals.

4.A.1 The institution employs professionally qualified faculty with primary commitment to the institution and representative of each field or program in which it offers major work.

Montana Tech recruits, rewards, and retains faculty who are both excellent instructors and active scholars. In the Fall of 2009, Montana Tech employed 176 full-time faculty and 91 part-time faculty. Of the tenurable full-time faculty, 53% are tenured. All non-tenure track faculty - whether full- or part-time - are considered to be adjunct. By this measure 52% of the full- and part-time faculty is adjunct. Of the full-time faculty, 51% hold a doctoral degree, usually a Ph.D., and 41% hold a Master's degree. These degrees are either directly in or strongly related to the fields in which faculty teach and pursue research and scholarly activity. Of the tenure track instructional faculty teaching in B.S. programs, 70% hold a doctorate. Table 4.A.I summarizes the rank and tenure status of full and part-time faculty.

TABLE 4.A.I: QUALIFICATIONS AND COMMITMENT OF THE FACULTY

FACULTY	FULL-TIME	PART-TIME
Number Total	176	91
Number Holding Doctorate	89	7
% of 4-Year Tenure Track Instructional Faculty With Doctorate	70%	
Number Holding Masters	72	51
Tenured	68	
Probationary Tenure Track	61	

Data on the characteristics of the faculty is provided in the following exhibits and tables. Required Exhibit 4.A.I, *Summary of Faculty Characteristics* provides a current snapshot of the faculty at Montana Tech. Please also see Required Exhibit 4.A.II - Standard Four – Faculty Table 1 – *Institutional Faculty Profile*; Required Exhibit 4.A.III - Standard Four – Faculty Table 2 - *Number and Source of Terminal Degrees of Faculty* and the binders for Required Exhibit 4.A.IV, *Standardized Résumés Full-Time Faculty* and Required Exhibit 4.A.V, *Standardized Résumés Of Part-Time Faculty* that contain the current professional vitae of faculty at Montana Tech. Table 4.A.II lists degrees of tenure

SELF-STUDY 2010

track instructional faculty by department and does not include three administrators who hold faculty rank, but who do not regularly teach. Montana Tech also currently provides up to \$1,500 in support per year for 11 faculty with Master's degrees who are pursuing doctoral degrees.

TABLE 4.A.II: DEGREES OF TENURE TRACK INSTRUCTIONAL FACULTY BY DEPARTMENT

FOUR-YEAR PROGRAMS					
Department	Doctorate	% Doctorate	Masters	Bachelors	Other
Biological Sciences	6	85.7%	1	0	0
Business & Information Technology	1	20.0%	4	0	0
Chemistry	7	100.0%	0	0	0
Computer Science	3	60.0%	2	0	0
Electrical Engineering	4	100.0%	0	0	0
Environmental Engineering	6	85.7%	1	0	0
General Engineering	6	75.0%	2	0	0
Geological Engineering	5	100.0%	0	0	0
Geophysical Engineering	4	80.0%	1	0	0
Health Care Informatics	0	0.0%	2	0	0
Liberal Studies	9	100.0%	0	0	0
Mathematical Sciences	6	67.7%	3	0	0
Metallurgical Engineering	5	100.0%	0	0	0
Mining Engineering	5	100.0%	0	0	0
Networking Technology	0	0.0%	1	2	0
Nursing	0	0.0%	8	0	0
Petroleum Engineering	2	40.0%	3	0	0
Professional & Technical Communication	4	80.0%	1	0	0
Safety, Health, & Industrial Hygiene	4	67.7%	2	0	0
TOTAL	77	69.7%	31	2	0
TWO YEAR PROGRAMS					
Department	Doctorate	% Doctorate	Masters	Bachelors	Other
Business Technology	0	0.0%	3	1	0
Trades & Technology	0	0.0%	1	4	1
Health Programs	0	0.0%	0	2	0
TOTAL	0	0.0%	4	7	1

In addition to instructional faculty, Montana Tech has a significant number of full-time faculty (17%) whose primary responsibility is research. The 30 full-time research faculty at Montana Tech are principally divided between 26 faculty in the Montana Bureau of Mines and Geology (MBMG) and three faculty in the Center for Advanced Mineral and Metallurgical Processing (CAMP).

As described in the [MBMG web page](#), the Montana Bureau of Mines and Geology (MBMG) established in 1919, has as its mandate:

...to collect and publish information on Montana's geology to promote orderly and responsible development of the energy, ground-water, and mineral resources of the State. A non-regulatory state agency, the Bureau provides extensive advisory, technical, and informational services on the States' geologic, mineral, energy, and water resources. MBMG is increasingly involved in studies of the environmental impacts to land and water caused either by past practices in hard-rock mining or by current activities in agriculture and industry.

The [CAMP web page](#) describes the mission of CAMP as:

The Center for Advanced Mineral and Metallurgical Processing will facilitate cooperation between the university system and industry to enhance the economy of the State of Montana by supporting, developing and adding value to the global mineral, metallurgical, and materials industry. Economic enhancement may be encouraged through added value processing of minerals, materials, and wastes while developing processes that minimize waste generation.

4.A.2 Faculty participate in academic planning, curriculum development and review, academic advising, and institutional governance.

Faculty play an active and often significant role in 37 of Montana Tech's standing committees. Please see the Exhibit 4.A.VI, [2009-2010 Committee Roster](#) and Table 4.A.III below. Table 4.A.III does not count ex-officio members and includes all committees with at least one faculty member. Currently faculty comprise 83% of the membership of academic committees and 57% of overall committee membership. Key faculty committees, such as the Faculty Senate, Curriculum Review Committee, Graduate Council, Research Advisory Committee, and Collegiate Evaluation Committee are composed almost completely of faculty members. Often, ad-hoc committees will have significant faculty membership. Recent examples include the Vision 2025 Committee (59% faculty) and the Merit Committee (89% faculty). Some of these committees are quite active and meet weekly, while others may meet only once a year or as needed. Generally, faculty members either volunteer for service on these committees or are elected or appointed from the faculty as a whole or from representative bodies such as colleges or departments. The minutes for some of these committees for the past year can be found in Exhibit 4.A.VII, Committee Minutes.

As an example of faculty involvement in curricular planning, consider the process by which a new course is added to the curriculum. The idea for a new course generally originates with a faculty member who will often have first taught the course as a special

SELF-STUDY 2010

topics course, which has proven successful and generated a positive student response. This faculty member will then bring a request to the appropriate department to add this course to the curriculum. If the faculty members in the department agree with the request, a formal submission for a new course will be prepared. This formal submission will include a suggested course number, title, catalog description, and prerequisites; will have an attached syllabus; and will note known effects on other programs.

TABLE 4.A.III: FACULTY PARTICIPATION IN STANDING COMMITTEES

STANDING COMMITTEE	TOTAL	FACULTY
Academic Committees (largely)		
Academic Freedom & Tenure Committee	3	3
Academic Standards Committee	5	3
Advising/Retention Committee	20	6
Collegiate Evaluation Committee	4	4
Curriculum Review Committee	23	21
eLearning Committee	15	10
Faculty Senate	10	10
Faculty Service Committee	3	3
General Education Review Committee	18	16
Graduate Council	16	16
Instructional Improvement Committee	20	19
Library Committee	22	20
National Awards Committee	9	6
Research Advisory Committee	14	14
Scholarship & Financial Aid Committee	6	5
Student Disciplinary Appeals Committee	7	5
Undergraduate Research Committee	6	6



**TABLE 4.A.III: FACULTY PARTICIPATION IN STANDING COMMITTEES
(CONTINUED)**

STANDING COMMITTEE	TOTAL	FACULTY
Non-Academic Committees (largely)		
Athletic Committee	8	5
Benefits Committee (Inter-Unit)	2	1
Campus Access Committee	22	2
Chancellor's Advisory Committee	22	6
Computer & Telecommunications Advisory Comm.	29	13
Cultural Events Committee	9	7
Educational Outreach Advisory Committee	7	1
Employee Recognition Committee	8	2
College Relations & Marketing Committee	7	5
Financial Aid Appeals Committee	7	2
Grievance Committee	8	3
Motor Pool Committee	5	2
Recycling Committee	19	6
Safety Committee	25	14
Strategic Planning Committee	21	6
Student Union Activities Advisory Board	11	1
Sustainability Committee	12	6
Traffic & Parking Committee	6	1
WEB Guidance Committee	20	9
Wellness Committee	21	9

(See Exhibit 4.A.VIII, *Example Curriculum Review Request*, from the Mathematical Sciences Department.) This formal request will then be vetted by the departments and the faculty in the college in which the request originated. If the college approves, the request passes to the Curriculum Committee, which has faculty representation from each instructional program. Once the request is approved by the Curriculum Committee, it is presented to the full instructional faculty for final approval. Clearly, the faculty own the curriculum.

SELF-STUDY 2010

In 2005 approximately half of the Montana Tech faculty associated with four year programs unionized as the Montana Tech Faculty Association (MTFA), which is affiliated with the MEA-MFT. Faculty who are not members of this union are principally - although not exclusively - engineering, nursing, and research faculty. Faculty in two year programs are represented by a different union, the Vocational-Technical Educators of Montana (VTEM), which is associated with the MEA-MFT, AFT, AFL-CIO. While these unions are primarily concerned with wages, benefits, and working conditions, to



the extent that these concerns affect academic planning and governance (and they do), the MTFA and VTEM provide faculty represented by these organizations with another voice on these matters. The current collective bargaining agreements for these unions can be found in Exhibit 4.A.IX, [MTFA-CBA](#), *Montana Tech Faculty Association Collective Bargaining Agreement* and in Exhibit 4.A.X, [VTEM-CBA](#), *Vocational-Technical Educators of Montana Collective Bargaining Agreement*.

Montana Tech prides itself on involving faculty in mentoring and advising students. Tenure track instructional faculty advised a median of 13 students each in the fall 2009 semester. However, advising loads ranged as high as 124 students for one faculty in Petroleum Engineering, one of Montana Tech's larger programs. At the time of enrollment and sometimes earlier, while the student is still being recruited, a faculty member in the student's major field is assigned as an advisor. Typically the initially assigned faculty member will advise these students throughout their course of study at Montana Tech, unless the student changes major, in which case a new faculty advisor in the new major would be assigned. While students are encouraged to visit with their advisors frequently, at a minimum students are required to meet with their advisors at least once a semester to register for the coming semester. Advisors are required sign drop add cards and to review and sign the student's graduation forms. This approach to advising often results in the formation of lifelong friendships and professional relationships between the faculty member and their advisees.

4.A.3 Faculty workloads reflect the mission and goals of the institution and the talents and competencies of faculty, allowing sufficient time and support for professional growth and renewal.

Workloads at Montana Tech are designed to insure that the faculty are able to provide "a strong undergraduate education augmented by research" as stated in the institution's mission. The general increases in faculty participation in undergraduate research, in grant writing activity, and publication, as detailed in Standard 4.B, suggest that the current workload model provides sufficient time and resources for professional growth and renewal. The following provides the best single description of how

workloads are established for faculty teaching in four year programs. Workloads for faculty in the four year programs are based on a 15 credits of workload per semester model which guides assignment of effort. For faculty for whom advising and service to the college are expected, 3 credits of this workload are automatically awarded for effort in these areas. Faculty members that are active in research and scholarship are normally able to claim 3 credits of workload for their efforts with the approval of their department head. New and recent faculty hires for whom demonstrated research and scholarship are requirements for promotion and tenure are generally accorded 3 credits of workload to allow for effort in this area. For a faculty member who is advising students, serving on college committees, and pursuing research/scholarship; this typically leaves 9 credits of workload to be devoted to instruction per semester. One credit of lecture (1 hour per week) counts as one credit of instructional load and one credit of laboratory (3 hours per week) counts as two credits of instructional load. The two credits of workload for a one credit laboratory has been negotiated into the most recent MTFB Collective Bargaining Agreement and is therefore contractual for faculty in the Collective Bargaining Unit. Of course, while the unexpected and varying needs of the institution make strict compliance with these guidelines unrealistic, nevertheless, the workload model described above provides a benchmark that the institution strives to achieve. General discussion and guidance on establishing faculty workload is provided in Exhibit 4.A.IX, [MTFA-CBA, Article 21, Workload](#). Workloads for faculty in Montana Tech's two-year programs are higher at up to 16 credits of workload per semester, recognizing the lessened expectations and demands of scholarship for the faculty members in two-year programs. The workload for faculty teaching in two-year programs is normally all in instruction with faculty in these programs teaching, for example, up to 5 three credit courses per semester. General discussion and guidance on establishing faculty workload is provided in Exhibit 4.A.X, [VTEM-CBA, Appendix C - Memorandum of Understanding Faculty Workload](#). The instructional workload of any faculty member in any semester can be examined by consulting Exhibit 4.A.XI, [Montana Tech Course Schedules](#).

CLOSING THE LOOP

The allowance of 3 credits or one course per semester reduction in workload for faculty in four year programs that are actively pursuing scholarship or where there are expectations for scholarship, as is the case for new faculty, resulted from an institutional recognition that faculty needed time to effectively pursue scholarship. This institutional investment in faculty scholarship has resulted in an almost 4 fold increase in funded research over the past decade and is necessary if the institution is to fulfill its mission of providing "a strong undergraduate education augmented by research."

SELF-STUDY 2010

4.A.4 Faculty salaries and benefits are adequate to attract and retain a competent faculty and are consistent with the mission and goals of the institution. Policies on salaries and benefits are clearly stated, widely available, and equitably administered.

Exhibit 4.A.II, Table 1, *Institutional Faculty Profile*; and Standard 4, Exhibit 4.A.XII *Faculty Salary Data* lists faculty salaries. The latter table has had names and programmatic affiliation removed to prevent identifying the salaries of individual faculty. Policies on salary are kept in the Montana Tech Personnel Office. A comparison of state salaries for tenure track instructional faculty (research faculty are not included) with *College and University Professional Association (CUPA) National Faculty Salary Survey* salaries in Table 4.A.IV shows that as an institution, with the exception of the rank of instructors, we lag behind our CUPA comparators.

TABLE 4.A.IV: COMPARISON OF MONTANA TECH SALARIES WITH CUPA

RANK	AVERAGE MONTANA TECH SALARY	AVERAGE MONTANA CUPA SALARY	PERCENT OF CUPA SALARY
All Ranks	\$60,308	\$72,889	83%
Professor	\$73,042	\$96,316	76%
Associate Professor	\$61,423	\$72,851	84%
Assistant Professor	\$55,091	\$66,764	83%
Instructor	\$47,506	\$46,957	101%

The total salary compensation listed above does not include administrative stipends, extra compensation, and grant derived salary that is not supplanting state salary. Of course, in making these comparisons regional differences in cost of living need to be kept in mind.

Salary increases at Montana Tech begin with the State of Montana pay plan which biennially establishes the average increases for all state employees. For the 2007-2009 biennial budget this increase was 3.6%. All raises and adjustments for promotions, inversions, and inequities are to come from this increase. Merit increases, when a Merit Plan is in place, will be funded outside of the state pay plan increase. For the 2007-2008 academic year the average increase for faculty teaching in four year programs was 3.42%. In the 2008-2009 academic year, the average increase (exclusive of promotion, inversion, and inequity adjustments) for faculty teaching in four year programs was 3.42%; and for faculty covered by the Vocational-Technical Educators of Montana (VTEM) bargaining agreement it was 3.00%. In the climate of the current economic downturn, the only pay raise approved for state employees for the 2009-2011 biennium is a \$450 cost of living increase for state employees earning less than \$45,000.

The normal increase to base salary for promotion or academic achievement is outlined in the Table 4.A.V:

TABLE 4.A.V: SALARY INCREASES FOR PROMOTION AND ACADEMIC ACHIEVEMENT

PROMOTION	INCREASE TO BASE SALARY
Promotion to Full Professor	\$6,000
Promotion to Associate Professor	\$4,000
Promotion to Instructor III	\$6,000
Promotion to Instructor II	\$4,000
Obtaining Doctorate Degree	\$3,000
Obtaining Masters Degree	\$1,000
Obtaining Professional Engineering License	\$1,000

As an example of how the salary of a typical faculty member would increase with time under Montana Tech’s current salary structure, consider a hypothetical faculty member with a doctorate hired at a starting salary of \$50,000. After 20 years, assuming on-schedule promotions to associate and full professor, an average annual raise of 3%, and no merit increases, this faculty member would attain a salary of \$102,841.

Faculty once they reach the rank of full professor, approximately nine years into their academic career at Montana Tech, are essentially subject to only state pay plan salary increases. This is the fundamental reason why salaries of full professors at Montana Tech are on average only 76% of CUPA, which generally increases at a faster rate than the state pay plan increases.

The Montana State University Board of Regents consulting policy, see Exhibit 4.A. XV, [Montana State University Board of Regents Policy 404.1, Consulting Services – Faculty](#), also allows faculty to consult for up to 40 days per academic year. This consulting not only benefits the state and the faculty member (and ultimately students) through knowledge transfer, but also provides another mechanism by which faculty can augment their salary. Between May 2007 and May 2008, 15 Montana Tech faculty had active consulting forms on file indicating their intention to engage in consulting.



SELF-STUDY 2010

Over the previous five years, faculty retention - defined as full-time tenure stream faculty who neither resigned nor were terminated - averaged 94% across the institution. Faculty retention data by department or program is shown in the Table 4.A.VI below:

TABLE 4.A.VI: FACULTY RETAINED FROM THE PREVIOUS FALL

	FALL 2009	FALL 2008	FALL 2007	FALL 2006	FALL 2005	5 YR AVG.
Montana Tech as a whole	94%	96%	96%	96%	87%	94%
Biological Sciences	100%	100%	100%	100%	100%	100%
Business & Information Technology	100%	80%	80%	80%	80%	84%
Business Technology	100%	100%	100%	100%	100%	100%
Chemistry & Geochemistry	80%	100%	100%	100%	100%	96%
Computer Science	100%	100%	100%	83%	50%	87%
Electrical Engineering	100%					100%
Environmental Engineering	100%	100%	100%	100%	100%	100%
General Engineering	100%	89%	89%	100%	89%	93%
Geological Engineering	75%	100%	100%	100%	100%	95%
Geophysical Engineering	100%	100%	100%	100%	80%	96%
Health Care Informatics	100%	100%	100%	100%	0%	80%
Health Programs	67%	100%	100%	100%	50%	83%
Information Technology & Design	100%	100%	100%	67%	33%	80%
Liberal Studies	100%	100%	100%	100%	100%	100%
Lineman Program	50%	100%	100%			83%
Mathematical Sciences	100%	100%	100%	100%	100%	100%
Metallurgical Engineering	80%	100%	100%	100%	100%	96%
Mining Engineering	100%	100%	100%	100%	75%	95%
Nursing	100%	100%	100%	100%	90%	98%
Occupational Safety & Health	100%	100%	100%	100%	100%	100%
Petroleum Engineering	100%	88%	86%	100%	80%	91%
Professional & Technical Communication	100%	83%	83%	83%	83%	86%
Trades & Technology	80%	75%	75%	80%	80%	78%

CLOSING THE LOOP

To best maintain competitive salaries, Montana Tech has:

- » Distributed \$202,061 among the base salaries of 40 full professors who were the furthest from CUPA, over the past three years. These adjustments have brought the full professors, as a group, closer to their CUPA average.
- » Formed a Merit Committee composed of three faculty from the collective bargaining unit, three faculty outside the collective bargaining unit, and three administrators. This committee developed a procedure to identify meritorious faculty in four year programs and to distribute merit pay. A copy of the merit plan can be found in Exhibit 4.A.IX [MTFA-CBA](#), *Article 24, Merit Awards*, and is also included in Exhibit 4.A.XXIII, Merit Plan. This plan has been ratified by the Montana Tech Faculty Association, but has yet to be approved by four year faculty outside the bargaining unit.
- » Put in place a procedure so that faculty who have budgeted for academic year buyouts and/or summer salary at their current CUPA rate in externally funded grants are able to pay a portion of their salaries at the higher CUPA rate from these grants. This approach not only provides a mechanism to increase faculty salaries, but it also encourages faculty to seek external funding to support of their research and scholarship. Exhibit 4.A.XIV, [Research Salary Policy](#), governs salaries paid for by sponsored research. During the 2008-2009 academic year, 14 Montana Tech full-time instructional faculty were paying some portion of their academic year salary from external grants. Please see Standard 4.B.5 for a more in depth discussion of how this policy works.

SELF-STUDY 2010

4.A.5 The institution provides for regular and systematic evaluation of faculty performance in order to ensure teaching effectiveness and the fulfillment of instructional and other faculty responsibilities. The institution's policies, regulations, and procedures provide for the evaluation of all faculty on a continuing basis consistent with Policy 4.1 Faculty Evaluation.

All faculty are evaluated annually at the departmental level. However, full professors are only evaluated every three years, on a rotating basis, with approximately one-third of all the full professors being evaluated in any given year. These evaluations are based on a review by departmental members of a portfolio prepared by the faculty member who is under review. For review of part-time faculty, both the portfolio and the review only address the area of instruction.

Procedures and expectations for evaluation, tenure, and promotion of faculty in four year B.S. and M.S. granting programs at Montana Tech are covered in:

- » Exhibit 4.A. XVI, *Faculty Staff Handbook, Section 206, Evaluation, Promotion, and Tenure – North Campus Faculty* for all faculty in four year B.S. and M.S. granting programs;
- » Exhibit 4.A.IX, *MTFA-CBA, Article 14, Faculty Evaluation*, for faculty in four year B.S. and M.S. granting programs, who are part of the MTFA Collective Bargaining Unit (where The Faculty Staff Handbook and the MTFA-CBA differ, the MTFA-CBA takes precedence);
- » Exhibit 4.A. XVI, *Faculty Staff Handbook, Section 207, Evaluation, Promotion, and Tenure – COT Faculty* for faculty in the certificate and two year programs in the College of Technology (COT);
- » Exhibit 4.A.X, *VTEM-CBA, Article 7, Faculty Evaluation*, for faculty in the certificate and two year programs in the College of Technology (COT), who are part of the VTEM Collective Bargaining Unit (where The Faculty Staff Handbook and the VTEM-CBA differ, the VTEM-CBA takes precedence);
- » Exhibit 4.A. XVI, *Faculty Staff Handbook, Section 208, Classification and Promotion-Montana Bureau of Mines and Geology Professional Faculty and Staff* for faculty and staff in the Montana Bureau of Mines and Geology (MBMG), a department of Montana Tech and a Montana State service agency; and
- » Exhibit 4.A. XVI, *Faculty Staff Handbook, Section 206.4* for part-time faculty who are expected to prepare an evaluation portfolio that only addresses instruction and that follows the same guidelines as full-time faculty.

On June 1, 2005 the Montana Board of Personnel Appeals certified the Montana Tech Faculty Association (MTFA), which is affiliated with the Montana Education Association - Montana Federation of Teachers (MEA-MFT). Thus the MFTA became the exclusive representative for the bargaining unit, which is comprised of all teaching faculty in four year programs on academic appointment, department head(s) and/or department chairpersons, and lab director(s) with faculty status at Montana Tech. This bargaining unit excludes library faculty, nursing faculty, faculty represented by the Vocational-Technical Educators of Montana (VTEM) bargaining agreement, part-time

academic appointments of less than .5 (one-half) FTE, all employees of the Bureau of Mines and Geology, and faculty who are professional engineers (PE) or engineers in training (EIT). Also excluded are coaching staff, museum staff, deans, non-teaching management personnel, visiting faculty, research assistants, post-doctoral fellows, and researchers with academic rank who would teach less than .5 (one-half) FTE. The latest MTFA Collective Bargaining Agreement (CBA), which was ratified in October of 2009 and subsequently approved by the Montana Board of Regents, addresses issues and policies related to wages, benefits, and working conditions for faculty who are members of this bargaining unit. Those faculty in the bargaining unit who teach in four year programs offering B.S. and M.S. degrees are largely concentrated in the College of Letters, Sciences, and Professional Studies. However, there are faculty in the College of Letters, Sciences, and Professional Studies who are not in the bargaining unit, notably nursing faculty. Also a number of faculty in the School of Mines and Engineering are in the bargaining unit. Because of this, when the MTFA-CBA was first developed, care was taken to keep in agreement with policies and procedures set forth in the Faculty Staff Handbook. In any instance where the MTFA-CBA and the Faculty Staff Handbook are not in agreement, the MTFA-CBA, as a contract, will take precedent over the Faculty Staff Handbook. Faculty evaluation for faculty teaching in four year programs is addressed in Exhibit 4.A.IX, [*MTFA-CBA, Article 14, Faculty Evaluation*](#).



Faculty in two year programs are represented by the Vocational-Technical Educators of Montana (VTEM). Faculty evaluation for faculty teaching in two-year programs is addressed in Exhibit 4.A.X, [*VTEM-CBA, Article 7, Faculty Evaluation*](#).

As required by the Faculty Staff Handbook Section 206.4, the MTFA-CBA Section 22.311, and by the VTEM-CBA; faculty instruction in all courses is evaluated by students each time the course is taught. Students use a uniform campus-wide evaluation form that can be viewed in Exhibit 4.A.XVII, [*Montana Tech Course Instruction Evaluation Form*](#). This form was developed by a faculty committee and agreed to by a vote of the general faculty. This student evaluation form solicits Likert scale responses to 25 questions that address instructional behaviors, and it also allows for free response to three general questions:

- » What aspects of this course contributed to your learning?
- » What aspects of this course did not contribute to your learning?
- » Suggestions--What would you change to improve the course?

Finally the form allows departmental-specific questions to be added.

Required Exhibit 4.A.XVIII, [*Sample Real Course Evaluation*](#) (with the professor's name and course identifying remarks removed) is a sample of an actual student evaluation.

SELF-STUDY 2010

Faculty have on-line access to these evaluations, as do department heads for the faculty in their departments, deans for the faculty in their colleges, and the Vice Chancellor for Academic Affairs and Research (VCAA&R) for all faculty. If the evaluation has been filled out on-line, then the free responses are included in the on-line evaluation. On the other hand, if the evaluation was completed on paper, then the free responses are typed by departmental assistants and provided to the faculty and department head separately. In either case, academic administrators have appropriate access to the raw student evaluation data. Faculty members use these evaluations, every semester, to assess and improve the instruction in their courses. Moreover, these same evaluations are used by department heads, deans, the VCAA&R, and others in the evaluation cycle to help make decisions on promotion and tenure. Access to student evaluations for faculty and administrators is available at [On-Line Access to Student Evaluations](#). Examples of student evaluations of instruction can be found in Required Exhibit 4.A.XIX, *Example Student Evaluations*.

To give a flavor for faculty evaluation, the evaluation process for a tenure track assistant professor teaching in a four year program and undergoing mid-tenure review will be described. Since faculty are eligible to apply for tenure in their sixth year, for a tenure track faculty, who was given no time toward tenure at the time of initial appointment, mid-tenure review would occur during the faculty member's third year at Montana Tech. The process would begin with faculty members preparing a portfolio addressing their accomplishments in the areas of instruction, research/scholarship, and service during their first three years at Montana Tech. The portfolio would contain a cover letter, letters of support from colleagues, copies of the faculty member's three annual departmental evaluations, an up-to-date vita, summaries of courses taught and student evaluations from these courses, evidence of research and/or scholarly activity, and details of service to the department, college, profession, and community. The entire portfolio is due to the department head by October 1st. Based on the portfolio, the department head first solicits input from the tenured departmental faculty (although other faculty and staff may be asked to comment) and then writes a letter of support or non-support for the faculty member under review. The portfolio, the department head's letter, and any additional evidence marshaled either by the department head or by the faculty member under review are forwarded to the dean of the respective college by November 1st. The dean reviews the portfolio, the department head's letter, and any other relevant evidence. The dean then writes a letter of support or non-support and submits the entire package to the Collegiate Evaluation Committee by December 1st. Voting members of the Collegiate Evaluation Committee consist of two full-time, tenured, full professors. Two are elected from the College of Letters, Sciences, and Professional Studies; and two are elected from the School of Mines and Engineering. A fifth voting faculty representative is selected by the faculty member under review. The Collegiate Evaluation Committee reviews the candidate's materials, soliciting other information or seeking clarification as needed, and writes a positive, negative, or qualified recommendation before passing the review to the VCAA&R by February 21st. The VCAA&R, in turn, evaluates all of the aforementioned

materials and recommendations and then forwards a written recommendation on to the Chancellor by March 15th. By April 1st the Chancellor ultimately affirms or denies previous assessments of the faculty member's progress toward tenure, noting any areas of concern in a written reply to the faculty member. An example of a complete portfolio including letters from those reviewing the portfolio is included in Exhibit 4.A.XX, *Faculty Promotion and Tenure Portfolio*. At every stage of this process, faculty members may add to or modify their portfolio. Within seven calendar days of the completion of any stage of the process, faculty members under review are to be notified of the recommendations made at that stage. The process for applying for tenure or for promotion for instructors to Level II or III or for faculty to associate or full professor is essentially the same as that described above for mid-tenure review with the exception that the Chancellor's recommendation is forwarded to the President of The University of Montana and then ultimately to the State of Montana Board of Regents. Please see Figure 4.A.1, Portfolio Flow Sheet, on the following page. It was developed by the Vice Chancellor of Academic Affairs and Research and is used to summarize the promotion and tenure process for faculty applicants and new hires.

CLOSING THE LOOP

In order to bring discipline-specific considerations into the evaluation process and to help insure uniformity in the application of standards as promotion and tenure portfolios move through the evaluation chain, departments at Montana Tech are currently developing Departmental Standards which, when finalized, will spell out the details by which faculty members applying for tenure or promotion from within a specific department will be judged. These evolving departmental standards are available as an appendix to Exhibit 2.A.I, *Program Reviews*.

4.A.6 The institution defines an orderly process for the recruitment and appointment of full-time faculty. Institutional personnel policies and procedures are published and made available to faculty.

Personnel policies and procedures are available in the Montana Tech Personnel Office and on the Human Services page of the Montana Tech website, <http://www.mtech.edu/hr/>. A binder containing some of the more relevant of these policies and procedures, including those addressing recruitment, has been provided as part of Required Exhibit 4.A.XXII, *Personnel Policies and Procedures*. Policies and procedures governing recruitment of faculty and staff are addressed in Exhibit 4.A.XVI, *Faculty Staff Handbook*, Section 204, *Recruiting and Selecting New Faculty* and Section 501, *Hiring*

SELF-STUDY 2010

Procedures; in Exhibit 4.A.IX, *MTFA-CBA, Article 10, Recruiting and Selecting of New Faculty*; in Exhibit 4.A.X, *VTEM-CBA, Article 9.5, Extended Postings and Hiring Between Colleges*; and documents available in the Montana Tech Personnel Office and on the Montana Tech website, <http://www.mtech.edu/hr/Recruitment.html>.

Recruitment begins when the need to hire a full-time faculty member arises at the department level and is typically in response to a retirement, resignation, leave of absence, termination, or sometimes a sabbatical. With advice from the dean of the college, the department prepares a formal Personnel Request Application (PRA) for the position. An example of a blank PRA is presented in Exhibit 4.A.XXIII, *PRA Form*. The PRA is then brought to the Dean’s Council, where the discussion centers on balancing departmental needs with those of the institution.

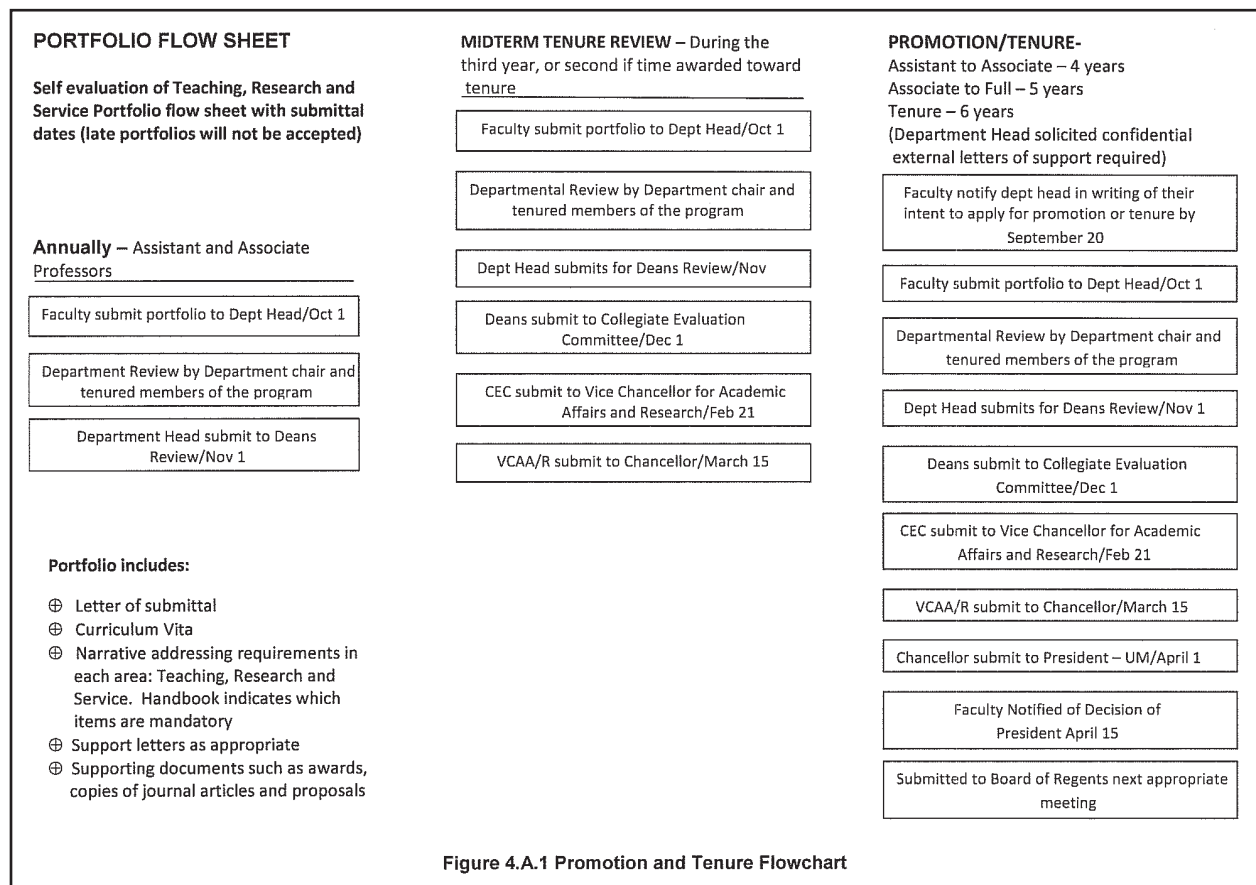


Figure 4.A.1 Promotion and Tenure Flowchart

If the PRA is approved by the Dean’s Council, the request for a faculty hire results in the PRA being forwarded to the Executive Budget Committee, where the impact of the hire on the institution’s finances is considered. Montana Tech’s Personnel Office is actively involved in this process to insure compliance with Affirmative Action and Equal Opportunity rules and regulations.

An active PRA requires signatures by the Department Head, Dean, Vice Chancellor

for Academic Affairs and Research, by the Affirmative Action/EEO Officer, Vice Chancellor for Fiscal Administration, and, ultimately, by the Chancellor. An example of a recent PRA is included as part of Exhibit 4.A.XXIV, [Example PRA](#).

Once fully approved, the requested position is posted on the Montana Tech website under employment and advertised locally, regionally, and/or nationally as appropriate. A snapshot of the Montana Tech employment web site is provided in Exhibit 4.A.XXV, [Montana Tech Employment Web Site](#). The text of the advertisement is part of the PRA and is largely written by the affected department with oversight from the Dean, from the Vice Chancellor for Academic Affairs and Research, and from the AA/EEO Officer. Appropriate venues for advertising the position are suggested by the department. In recent years, as advertising costs and time to publication have increased, Montana Tech has made greater use of electronic job postings.

Concurrent with advertising for the position a search committee is formed. The committee consists of at least three faculty members representing the academic department and one faculty member from outside the department. Student involvement is encouraged and may include a student member appointed by the Department Head to the search committee. The search committee and the chair of the committee, who is usually the affected department head, develop an applicant screening matrix of required and preferred criteria to help with the review of candidates. Just prior to the advertised date for reviewing applications, the search committee meets with the Equal Opportunity Officer to familiarize the search committee with the rules and regulations governing the search process.

The search committee then reviews applications and typically classifies these applications as Tier I, two to four candidates to be invited in for an interview; Tier II, potential candidates, if a hire doesn't materialize from Tier I; and Tier III, candidates who are not to be considered further. At this point references are checked on Tier I candidates, interview arrangements are made for Tier I candidates, and Tier III candidates are notified that they are no longer being considered. Interviews typically require one to two days, during which the candidate meets with the department and other interested faculty, with students in the affected majors, with a representative of the Personnel Office, and with the Dean of the College. The candidate also meets with the Associate Vice Chancellor for Research and Graduate Studies, the Vice Chancellor for Academic Affairs and Research, and, of course, with the search committee. Normally, the candidates will present a seminar in their field of scholarly interest to interested faculty and students. This seminar is effective in judging the candidate's ability to teach.

After the search committee makes its recommendation, the Department Head, Dean, and Vice Chancellor for Academic Affairs and Research construct an offer of employment. The offer details salary, credit toward promotion and tenure, moving expenses, and any other conditions of the initial hire. Guidelines on allocation of moving expenses can be found in Exhibit 4.A.XVI, [Faculty Staff Handbook, Section 501, Relocation Expenses](#). Montana Tech may offer one to two years toward promotion to

SELF-STUDY 2010

associate professor and one to two years (rarely) toward tenure for prior experience that the candidate has in a tenure track position at an accredited college or university. When circumstances require us to hire a candidate with a master's degree (where the doctorate is the normal terminal degree), we may in the letter of appointment require the new hire to complete an appropriate doctorate as a condition of promotion or tenure. Upon the Chancellor's approval, the candidate is notified of the offer. If the candidate accepts the offer, the remaining candidates are notified that the position has been filled. Meanwhile, the new hire's completed search file is forwarded to the Montana Tech Personnel Office for archiving.

4.A.7 The institution fosters and protects academic freedom for faculty. **Eligibility Requirement 11 and Policy A- Practices Regarding Institutional Mission and Goals, Policies and Administration.**

The institutional setting for academic freedom at Montana Tech is described well in the introduction to Section 203, Faculty Code of Conduct in the Faculty Staff Handbook, (see Exhibit 4.A. XVI, Faculty Staff Handbook, Section 203, Faculty Code of Conduct).



“The Institution is devoted to the pursuit of learning in the broadest sense. Its public responsibilities include the transmission of learning, the creation of knowledge, and the performance of services in related endeavors. Traditionally, colleges have served not only as transmitters of learning and repositories of knowledge, but also as institutions for the development of that innovation and criticism without which civilization cannot progress.

In the fulfillment of these traditional obligations, the Institution and its members are occasionally put in a position of apparent conflict among themselves and society. It is sometimes inevitable that new knowledge should find itself at odds with the old. Experimentation with new ideas and criticism of society is the inevitable and desirable result of a properly functioning institution.”

“These conflicts between the Institution and the community, and within the Institution itself, must not be allowed to interfere with the effective operation of the Institution. It is essential that the membership of the Institution be guaranteed freedom of expression, inquiry, association, criticism, and dissent without fear of reprisal, bodily harm, or physical disorder. The responsibility of maintaining academic freedom is shared by the Institution and through the persons of its students, its faculty, its administrators and its regents and by society.”

Montana Tech's policies on academic freedom are based on the Montana Board of Regents Policy 302, which can be found in Exhibit 4.A.XXVI, Montana Board of Regents

Policy 302. This policy, in turn, is based on the 1940 Statement of Principles on Academic Freedom and Tenure of the American Association of University Professors that can be found both in Exhibit 4.A.XXVII, AAUP 1940 Statement of Principles on Academic Freedom and Tenure and in subsequent revisions of this statement. Montana Tech's policies on academic freedom are specifically addressed in:

- » Exhibit 4.A. XVI, Faculty Staff Handbook, Section 202, Academic Freedom and Section 203, Faculty Code of Conduct;
- » Exhibit 4.A.IX, MTEA-CBA, Article 9, Academic Freedom and Responsibility; and
- » Exhibit 4.A.X, VTEM-CBA, Article 4.15, Academic Freedom.

Faculty members may appeal to the Academic Freedom and Tenure Committee in situations where they feel that their academic freedom has been impaired or threatened. This committee consists of only tenured non-administrative faculty members, who have been elected by the faculty. Moreover, this committee rarely has cause to meet.

4.A.8 Part-time and adjunct faculty are qualified by academic background, degree(s), and/or professional experience to carry out their teaching assignment and/or other prescribed duties and responsibilities in accord with the mission and goals of the institution.

Where possible, Montana Tech uses full-time faculty to provide instruction, thereby minimizing the use of part-time and adjunct faculty. In spite of this goal, the institution still finds it necessary to use part-time faculty for some instruction. The recruitment and selection of part-time faculty in four-year programs is explicitly addressed in the Exhibit 4.A. XVI, Faculty Staff Handbook, Section 204, Recruiting and Selecting Part-Time Faculty. In the fall of 2009, 91 part-time faculty provided 324 credit hours of instruction in 128 courses. The majority of part-time and adjunct faculty teach in the College of Letters, Sciences, and Professional Studies and in the College of Technology. Of the part-time faculty teaching in the fall 2008 semester, 8% held a terminal degree, usually a Ph.D., 56% held a Master's degree, and 27% held a Bachelor's degree. Please refer back to Table 4.A.I, and also, please see the following exhibits:

- » Exhibit 4.A.II, Table 1 - Institutional Faculty Profile;
- » Exhibit 4.A.III, Table 2 - Number and Source of Terminal Degrees of Faculty
- » Exhibit 4.A.V, Standardized Résumés of Part-Time Faculty.

4.A.9 Employment practices for part-time and adjunct faculty include dissemination of information regarding the institution, the work assignment, rights and responsibilities, and conditions of employment.

Part-time and adjunct faculty play an important role at Montana Tech, not only giving the institution flexibility in meeting curricular demands, but also in providing the kind of expertise not in the full-time faculty, e.g., a nutrition course taught by a registered nutritionist. In general Montana Tech's part-time faculty members enrich the full-time faculty. Adjunct faculty are those faculty who are not tenure track and include part-time faculty paid on a per course basis, visiting faculty, coaches (who may also teach as part of their duties) and research faculty, who may either be part-time or full-time.

SELF-STUDY 2010

New part-time and adjunct faculty participate in an orientation process and are provided an orientation packet which includes a copy of the *Faculty Staff Handbook*. The part-time faculty orientation packet is provided in Exhibit 4.A.XXVIII, *Part-Time Faculty Orientation Packet*. Part-time and adjunct faculty are subject to the same appropriate policies, as are full-time faculty. For example, the evaluation of part-time faculty who teach in four year programs is addressed in the Exhibit 4.A.XVI, *Faculty Staff Handbook, Section 206.4, Evaluation of Part-Time Faculty*. For both part-time and adjunct faculty, this evaluation is done each semester they teach, is based only on instructional performance, and is governed by the same requirements that apply to full-time faculty in the area of instruction.

Two categories of part-time faculty are not eligible for benefits: 1) those who teach less than 15 credits per year and 2) those who teach less than 18 credits per year and are members of the VTEM bargaining unit. Currently, part-time instruction is paid at \$832 per credit hour for lecture courses and \$1,664 per credit hour for laboratory courses. The higher rate for laboratory courses reflects the increased contact time (typically 3 hours) required per credit.

Part-time faculty are generally not expected to serve on institutional committees or pursue scholarly research; however, they are welcome to participate in both, if they wish.

CLOSING THE LOOP

In order to insure that part-time and adjunct faculty are informed with respect to the institution, to work assignment, to rights and responsibilities, and to conditions of employment, Montana Tech created a Part-Time Faculty Orientation Packet that is currently given to new faculty during a new faculty orientation conducted by the Vice Chancellor for Academic Affairs and Research (see Exhibit 4.A.XXVIII, *Part-Time Faculty Orientation Packet*.)

4.A.10 The institution demonstrates that it periodically assesses institutional policies concerning the use of part-time and adjunct faculty in light of the mission and goals of the institution.

While there are no formal procedures for assessing institutional policies as they affect part-time faculty, discussion concerning these policies can be initiated at any time by a variety of groups, including, for example, the Faculty Senate, the Dean's Council, the Chancellor's Cabinet, etc.

CLOSING THE LOOP

To give a voice to part-time faculty and to recognize and reward their contributions:

- » The Faculty Senate was expanded to include an elected representative from the part-time faculty; and
- » One of the six annual Rose and Anna Busch Faculty Achievement Awards is designated for a part-time faculty member.

STANDARD 4.B - SCHOLARSHIP, RESEARCH, AND ARTISTIC CREATION

Scholarship, including research and artistic creation, is inherent in the work of faculty and students and is integrated in mutually supportive ways with instructional activities, regardless of the size or nature of the institution.

- » Scholarship is systematic study of a chosen subject characterized by a high level of expertise, originality, critical analysis, significance, and demonstrability. Through scholarship, which may entail creation, application, synthesis, or transmission of knowledge, faculty acquire and sustain their expertise, thereby contributing to the validity and vitality of their teaching. Faculty scholarship is necessary to maintain effective instruction in all institutions of higher education. It also provides students the opportunity to observe and develop an understanding of scholarly activity.
- » Research is scholarly activity directed toward constructing and/or revising theories, and creating or applying knowledge. Although not limited to graduate/research institutions, research is an essential and integral part of graduate education where it serves two principal functions: (1) it advances the frontiers of knowledge which, when disseminated, contributes to the welfare of society and ensures the viability of content in an academic discipline; and (2) it educates students in the methods of inquiry and prepares them for careers as scholars, researchers, or practitioners.

4.B.1 Consistent with institutional mission and goals, faculty are engaged in scholarship, research, and artistic creation.

Montana Tech faculty members work with both undergraduate and graduate students by pursuing both funded and unfunded research. For many of the faculty, research is funded by extramural funding sources that include state, federal and private sources. In an average year, over 100 proposals are written with a total value in the range of \$20,000,000. Typically, over 60% of these proposals are funded. Research volume has constantly grown over the last two decades and has increased from less than \$1,000,000 annually to the current value which approaches \$9,000,000.

Figure 4.B.1 shows the total awards for fiscal years 2004 – 2008.

Figure 4.B.2 shows research expenditures for fiscal years 2004 – 2008.

Figure 4.B.3 illustrates the amount of campus grant writing for fiscal years 2004-2008.

Figure 4.B.4 provides a view of the level of engagement of the campus faculty in the research enterprise.

Moreover, Exhibits 4.B.I through 4.B.IV, contain the detailed *Research Annual Reports* for [FY 2006 & 2007](#), [FY 2005](#), [FY 2004](#), and [FY 2003](#) for the last five years.

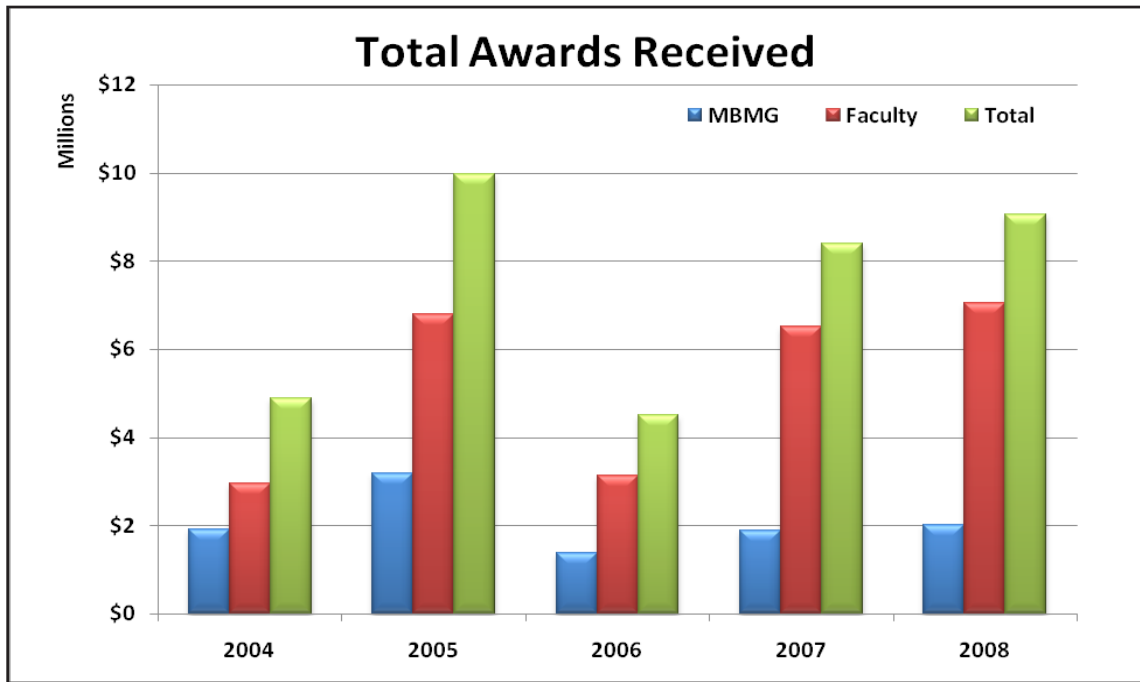


FIGURE 4.B.1: TOTAL AWARDS RECEIVED FY2004 - FY2008

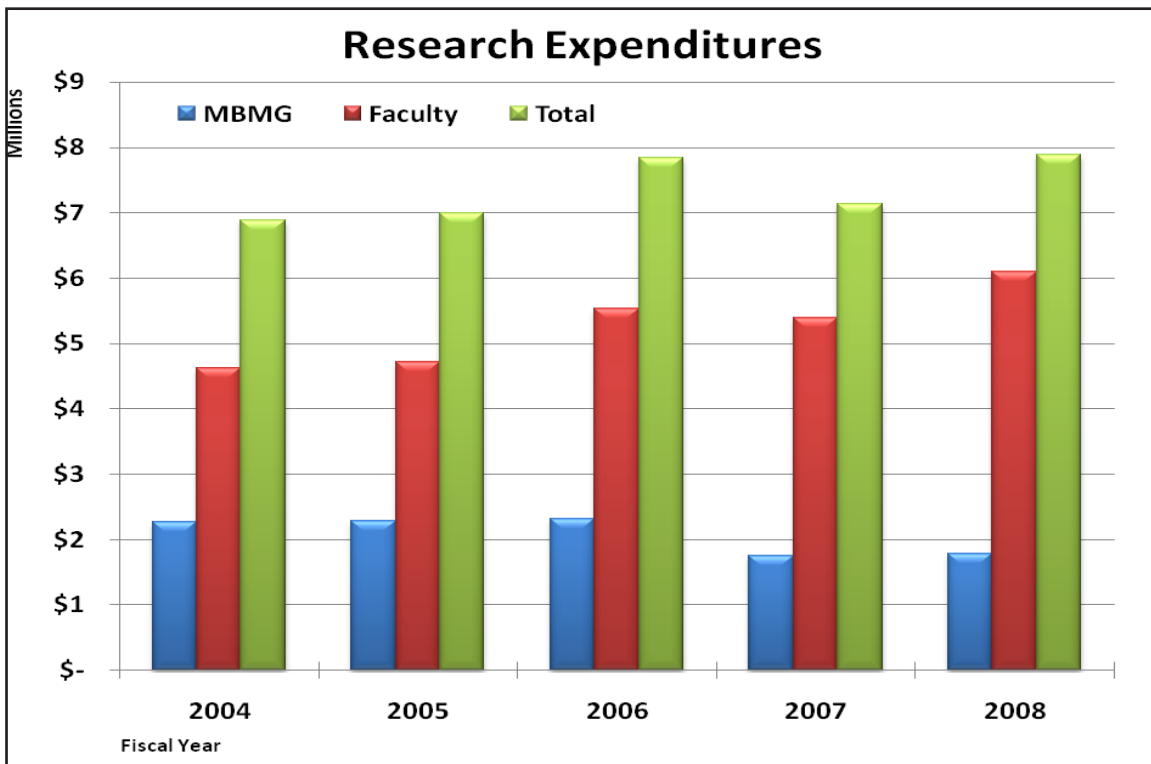


FIGURE 4.B.2: RESEARCH EXPENDITURES FY2004 - FY2008

SELF-STUDY 2010

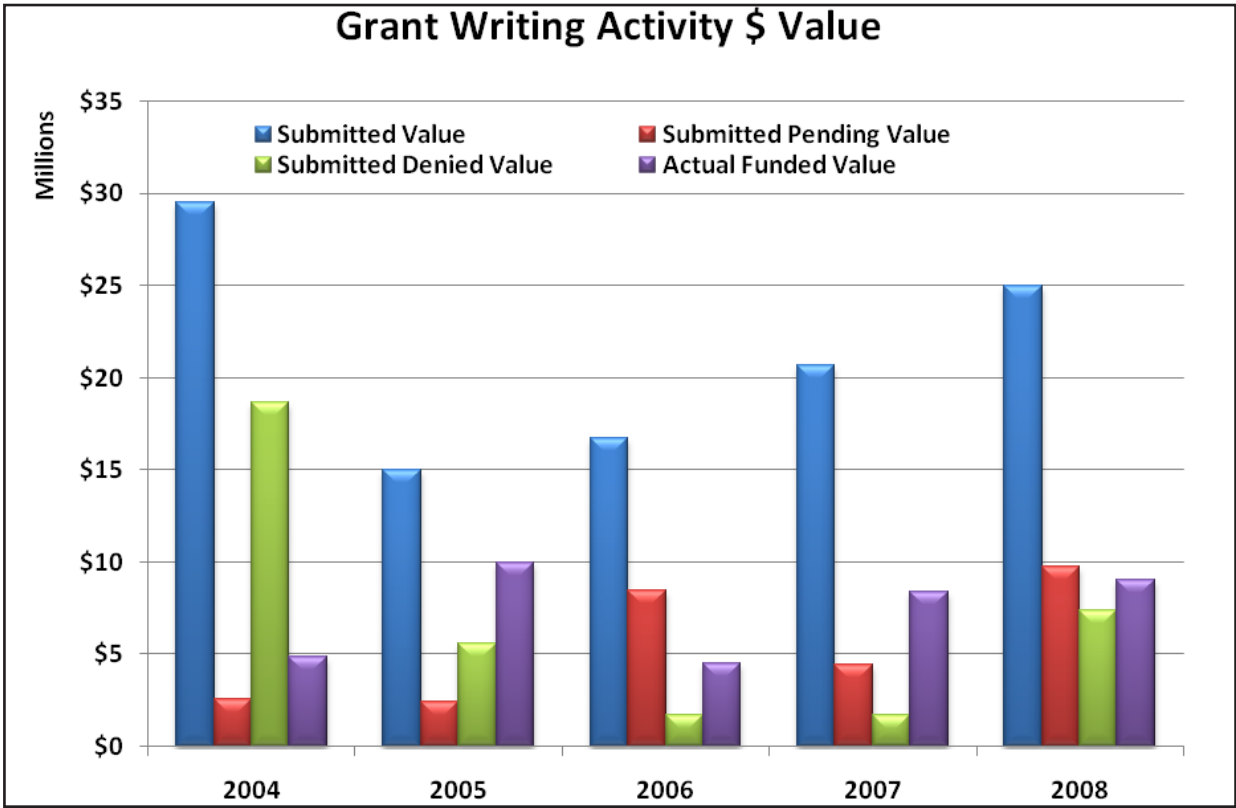


FIGURE 4.B.3: GRANT WRITING ACTIVITY FOR FISCAL YEARS 2004 TO 2008

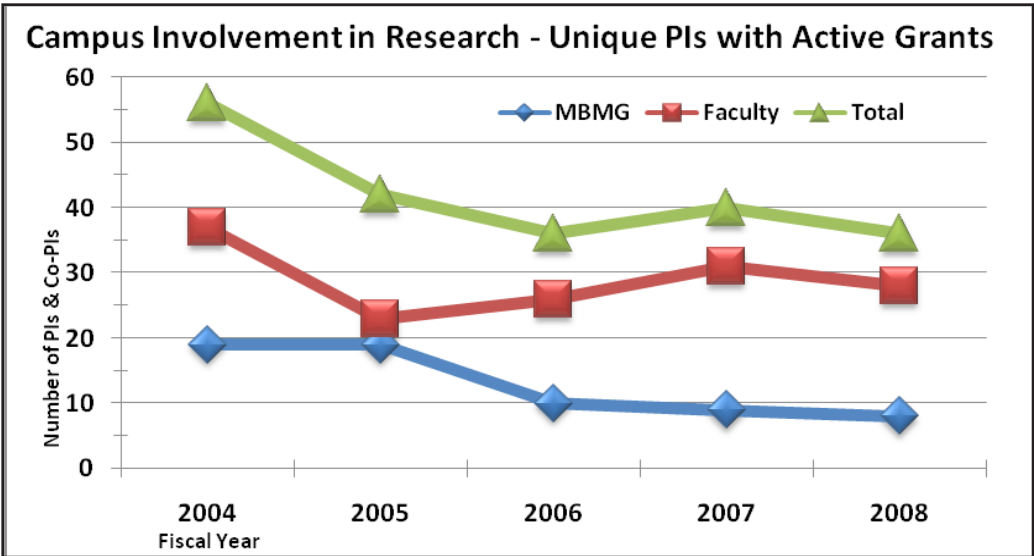


FIGURE 4.B.4: CAMPUS INVOLVEMENT IN RESEARCH

A metric related to the receipt of funding is the number of publications that result from that funding. In a typical year, we have over 100 authors (39 individual faculty) in print. Figure 4.B.5 shows the last five years of publishing activity by tracking abstracts and presentations, publications in press, and works published. Note that “in press works” become “published works” in the following years. Exhibit 4.B.V, [List of Published Scholarly Work \(1999-2008\)](#) gives the complete list of faculty scholarly works for the last ten years.

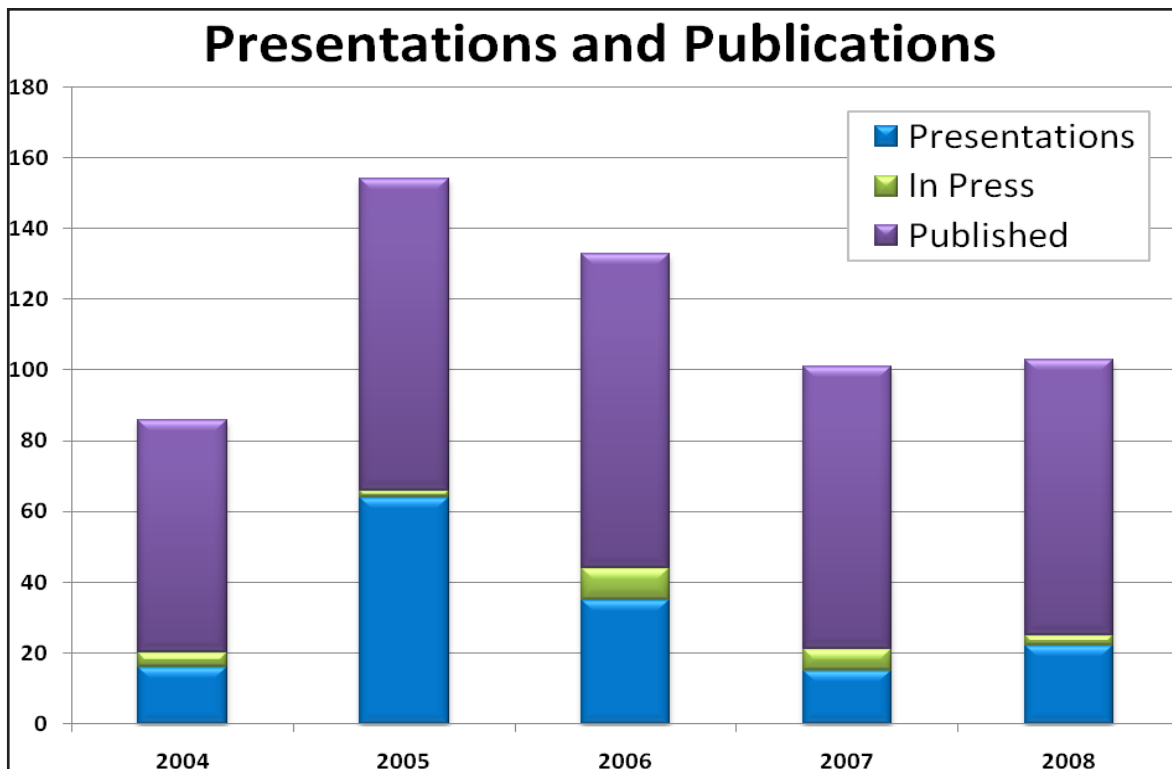


FIGURE 4.B.5: PUBLISHING ACTIVITY

4.B.2 Institutional policies and procedures, including ethical considerations, concerning scholarship, research, and artistic creation, are clearly communicated.

Research and creative activities are governed by a set of standards and principles. Some originate from Montana Board of Regents Policy, some from Federal granting Agencies, and some from Montana Tech itself. In general, these policies govern the ethical conduct of research, conflict of interest, intellectual property, and the efficient and proper expenditure of funds. The relevant policies are referenced in Required Exhibits (Part 10) toward the end of this standard. In the past Montana Tech has oriented all new faculty on these topics. Because of a recent (2007) change in BOR policy, all faculty engaged in research now attend a mandatory 3 hour Principal Investigator (PI) training orientation on these topics. Exhibit 4.B.VI, *PI Training Info Packet* contains full Power Point presentations on the [Pre-Award Process](#), the [Post-](#)

SELF-STUDY 2010

Award Process, Intellectual Property and Technology Transfer, and Conflict of Interest. This PI orientation is typically offered at the start of the faculty contract period in the fall semester and is then repeated several times during the academic year.

In addition to the required PI training, all faculty are required to read, understand, and acknowledge the Montana Tech Conflict of Interest Policy. They are also required to fill out an annual declaration regarding potential conflicts of interest. If they have no conflicts of interest, they are also required to attest to this condition. The COI policy and forms are found in Exhibit 4.B.VII, Conflict of Interest Policy, Forms, and Definitions.

4.B.3 Consistent with institutional mission and goals, faculty have a substantive role in the development and administration of research policies and practices.

Montana Tech maintains two standing faculty committees that directly affect research and scholarship - the Graduate Council and the Research Advisory Committee which meet at least once a semester. The Statement of Purpose for both of these committees can be found in Exhibit 4.B.VIII, Graduate Council Mission Statement and Exhibit 4.B.IX, Research Advisory Council Mission Statement. Minutes for both of these committees for the last two years can be found in Exhibit 4.B.X, Graduate Council Minutes; Fall 2005, Fall 2006, Spring 2007, Fall 2007 and Exhibit 4.B.XI, Research Advisory Council Minutes; Fall 2005, Fall 2006, Fall 2007, Spring 2008. Departmental representatives to each committee are nominated by the Department Head. The current membership of both committees can be found in Exhibit 4.B.XII, Graduate Council and Research Advisory Council Members.

4.B.4 Consistent with its mission and goals, the institution provides appropriate financial, physical, administrative, and information resources for scholarship, research, and artistic creation.

The Office of Research consists of two full-time employees and one half time position, which is sometimes filled by a student intern. This Office handles pre-award functions for the campus and works with the Office of Sponsored Projects to develop proposed budgets. In addition, the Office of Research provides initial management to new Centers, although the recent trend has been to assign successful Centers to a particular College for management purposes. The office organization is shown in Exhibit 4.B.XIII, Office of Research Organization Structure. The Office of Sponsored Projects handles all post-award activity for the campus. The office consists of three full-time employees. The office organization is shown in Exhibit 4.B.XIV, Office of Contracts and Grants Organization Structure. The Office of Research and the Office of Sponsored Projects posts all information relevant to pre-award and post-award information on the WEB at http://www.mtech.edu/research/policies/Policies_and_Procedures.html.

Faculty direct the Montana Tech Seed Grant program, which provides modest start-up monies to new faculty who are within two years of the date of their initial hire. In recent years, the typical grant maximum has been \$5,000. Membership, policies, and recent activities of the Montana Tech Seed Grant program can be found in Exhibit

4.B.XV – *Seed Grants Program Mandate*; Exhibit 4.B.XVI – *Seed Grants Committee Members*; and Exhibit 4.B.XVII – *Recent Seed Grant Awards*.

The campus research infrastructure remains a challenge. The fast growth in research volume continues to put pressure both on good research space and adequate research office space. Major renovations in 1999 to the Chemistry and Biology Building, additions of research laboratories to the ELC in 1998 and the new Natural Resources Building begun in 2008 all help alleviate this problem, but issues still remain at the departmental level. Research equipment also remains a challenge. The MUS provides no support for research equipment so faculty must depend on the Federal Agencies or private investment to provide funds for equipment purchases. The campus still struggles to pay for O&M costs for this equipment.

The Office of Research has worked with departments, bureaus and Centers to identify focused investments of Montana Tech IDC generated funds to improve campus infrastructure. These investments typically range from \$125,000 to \$275,000 per year and have been used to upgrade existing laboratories or to purchase needed research equipment.

The Office of Research maintains a subscription email listing for all faculty engaged in research. This is used to send out notices of opportunities, Agency Call for Proposals and Broad Agency Announcements of upcoming grant opportunities. Information on meetings, seminars, and training of interest are also sent out by email to our research faculty.

The Research Office maintains an ongoing enterprise fund for proposal development. Typical uses include a faculty trip to meet with a program sponsor and discuss a potential proposal, a trip to meet co-investigators to prepare a joint proposal in response to a call for proposals, or a trip to attend a briefing by a specific agency.

4.B.5 The nature of the institution's research mission and goals and its commitment to faculty scholarship, research, and artistic creation are reflected in the assignment of faculty responsibilities, the expectation and reward of faculty performance, and opportunities for faculty renewal through sabbatical leaves or other similar programs.

While not chiseled in any stone, Montana Tech's workload policy for faculty in four-year programs is based on 15 credits of load per semester. For full-time tenure track faculty 3 credits of load are automatically assigned to account for advising and institutional service. For probationary faculty, who are expected to develop an active/productive research/scholarship program in order to meet the standards for promotion and tenure, 3 credits of load may, with the Department Head's approval, be assigned for this effort. This same criterion applies to research-active faculty. The remaining 9 to 12 credits of load are assigned to instruction. In the area of instruction one lecture credit equals one credit of load, and one laboratory credit equals two credits of load. The assignment of load for laboratory instruction reflects the increased contact hours involved in laboratory instruction and is consistent with Montana Tech's policy of

SELF-STUDY 2010

paying twice as much per credit for laboratory instruction, as for lecture instruction. Faculty who do not advise, who are not active in institutional service, and/or who are not active in scholarship and research are expected to assume higher instructional loads.

Faculty who have budgeted part of their time for work on funded research grants may buy out of the appropriate portion of their instructional duties. Faculty may choose to use their "research salary," i.e., the appropriate College and University and Professional Association (CUPA) salary average for their rank and discipline, in preparing their grant applications, for they are competing nationally for funding against faculty who make up these CUPA salary averages. As an example of how this works, consider a research-active faculty. Let us assume this person normally teaches 9 credits per semester, performs 3 credits per semester of research (total of 12 credits per semester), and earns a state salary is \$60,000 per nine month year. Let's further assume they have a funded grant in which they have budgeted for one-third release of their teaching duties for the year at their CUPA or research salary of \$90,000 per nine month year. With this 3 credit release time, the faculty member's teaching load would drop to 6 credits per semester. Since one quarter of this faculty member's salary (3/12) would be paid at a rate of \$90,000 per year and three quarters (9/12) would be paid at \$60,000 per year, this faculty member would be paid a salary of \$72,500 per nine month year. This increase in 9 month salary from \$60,000 to \$72,500 for faculty who are able to secure funded research grants provides an incentive for faculty to pursue research at this level.

CLOSING THE LOOP

Since Montana Tech has adopted a nationally based compensation model for faculty engaged in research, the participation in the campus research enterprise by faculty has continually increased - over the last five years, the number of research active faculty has nearly doubled.

In order to recognize and reward faculty scholarship, the Research Advisory Council in 2002 established the Distinguished Researcher award. This award recognizes outstanding faculty contributions in building a dynamic research enterprise on the campus. Montana Tech also developed a Distinguished Researcher Lifetime Award to recognize those senior faculty who had made notable and continuous contributions to our research efforts. Exhibit 4.B.XVIII, Distinguished Researcher Award *Policy, Process, and Winners* contains the operating guidelines for the process, the annual call for nominations, and a list of all of the awardees since the programs inception in 2002.

4.B.6 Sponsored research and programs funded by grants, contracts, and gifts are consistent with the institution’s mission and goals.

The campus places a major emphasis on learning by doing, as encoded in our tag line “Get Into It” and our vision to be “a leader ... for undergraduate and graduate education and research.” Undergraduate and graduate research is an extremely visible and viable manifestation of this core value of the institution. Currently faculty are engaged in a wide variety of research and scholarly activities that reflect their own particular expertise. Students are drawn to these endeavors and the net result not only enhances the students’ education, but it also deepens the faculty members’ knowledge of his or her area of specialty. Montana Tech is primarily an undergraduate institution where faculty research involves significant participation by undergraduates. Nowhere is this more evident than in our Undergraduate Research Program (URP). The URP was established in 1995 to give undergraduate students the opportunity to participate in research at Montana Tech. This program receives major Federal support from the National Science Foundation, the National Institutes of Health, and the National Aeronautics and Space Administration. Additional support is provided industry and Montana Tech. The cyclical nature of the funding, particularly NSF grants, is reflected in the participation as shown in Figure 4.B.6.

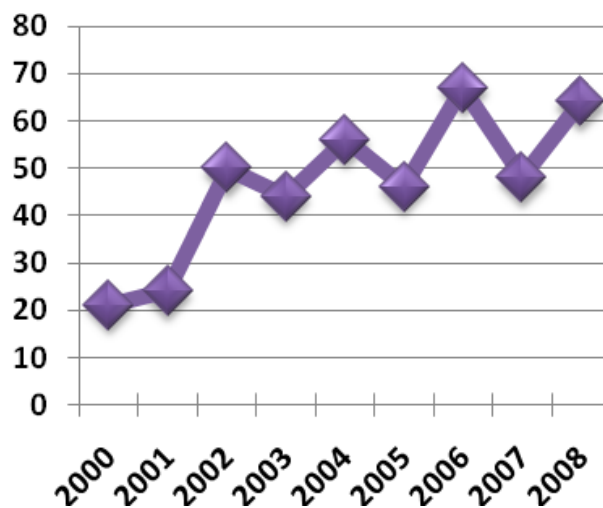


FIGURE 4.B.6: UNDERGRADUATE RESEARCH PARTICIPANTS

SELF-STUDY 2010

URP's goal is to incorporate reality and excitement into the learning process by offering motivated students a hands-on-research experience which is guided by a faculty mentor. Here students gain valuable skills that enhance classroom learning and, at the same time, broaden their interaction with peers. In the URP, research is loosely defined and may include investigations of a cultural or historical question, documentary or production arts, or laboratory or field research typically associated with science or engineering disciplines.

The URP uses a proposal review process to select participants for the program. Each student is required to submit a proposal describing his or her research project. Proposals are reviewed by a faculty committee and the review process is loosely modeled after the National Science Foundation. However, it is greatly compressed in time so that unsuccessful applicants can respond to comments, make corrections or changes, and resubmit proposals for continued consideration in the current round of awards. The goal is to eventually make all proposals acceptable and, in some cases, has taken as many as four rounds of review. Selected students receive a \$1,500 stipend and may be provided a research project. A research supervisor, such as a faculty or Montana Bureau of Mines and Geology member, sponsors and mentors each applicant and receives a stipend of \$300. All URP students enroll in MT 4506, a one credit course that identifies successful recipients on their transcripts. In addition, all grant recipients are required to make an oral presentation of their work at the Undergraduate Research Fair held on the campus each April. Overall, the URP enhances the student learning experience through value-added skills in writing, in analyzing, in organizing, and in presenting research projects.

CLOSING THE LOOP

The URP is now in its 14th year of operation, and the impact on student choices is becoming clear – many more deciding to pursue advanced degrees. Since 1997 400 students have participated in the program. A major outcome of the program has been a tripling of the number of students going on for MS and PhD degrees. The campus wide average is 9%; the URP average is 25%.

Student participation in the URP has tripled over the years, and attendance at national conferences has increased to 10% of the participating students. We have also been successful in broadening participation beyond our science and engineering students so that we now have students from health sciences, professional and technical communications, and liberal studies. The URP Statement of Purpose, URP Guidelines, URP Charter, and recent URP awards can be found in Exhibit 4.B.XIX – [URP Statement of Purpose](#); Exhibit 4.B.XX – [URP Guidelines](#); Exhibit 4.B.XXI – [URP Charter](#); and Exhibit 4.B.XXII – [URP Recent Awards List \(2007-08, 2006-07, 2005-06\)](#). Finally, the URP website is http://www.mtech.edu/research/undergrad/undergraduate_research.html.

In order to track the diverse research activity of faculty; the Research Office maintains a data base of all submitted, denied, and awarded grants and contacts. Exhibit 4.B.XXIII; *List of Research Proposals Submitted and Funded; 2004, 2005, 2006, 2007, 2008* summaries of all grants submitted in the last five years, sorted by academic department. Noted also is the outcome of that submittal. During this period, 520 grants have been submitted with a total value in excess of \$107,000,000

CLOSING THE LOOP

Extra support provided to faculty members for grant preparation and for travel support to discuss their ideas with potential sponsors is having a positive effect. The number of submitted proposals has increased over the last five years, and the success rate is well over 50%.

During the past year (2008-2009), the College of Technology (COT) has developed an organizational structure and program to permit COT faculty to participate in modest, student-driven research. This trend is significant because COT faculty are not expected to conduct research. The program is entitled the Research, Creative & Scholarly Activity Grant program (RCSA). In its first year, RCSA has sponsored two student-faculty research collaborations.

In addition to the broad range of research performed by individual faculty, Montana Tech supports several “Centers of Excellence” whose research agendas are more focused than a typical academic department. These Centers are authorized by the Montana Board of Regents, as per the BOR policies noted in Exhibit 4.B.XIV, [Board of Regents Policy on Research Centers and Programs](#). Currently, Montana Tech has three Centers approved under these guidelines: the Center for Advanced Mineral and Metallurgical Processing (CAMP), the Center for Environmental Remediation and Assessment (CERA), and the Center for Advanced Supramolecular and Nano Systems

SELF-STUDY 2010

(CASANS). Mission statements of these three Centers are included in Exhibit 4.B.XXV, *Research Centers Mission Statements*. The Research Office provides administrative oversight to CAMP and CASANS. The Dean of the School of Mines and Engineering provides management oversight to the CERA. CAMP maintains a WEB presence at <http://www.mtech.edu/camp/>.

Please see Standard 4, Required Documentation 4.5, for several examples of the institutional and public impact of faculty scholarship and Standard 4, Required Documentation 4.6 for a list of publications representing the most significant artistic creation, scholarly activity, and research by faculty during the past five years.

4.B.7 Faculty are accorded academic freedom to pursue scholarship, research, and artistic creation consistent with the institution's mission and goals.

The institutional setting for academic freedom at Montana Tech is described well in the introduction to Section 203, Faculty Code of Conduct in the Faculty Staff Handbook. (See Exhibit 4.A. XVI, *Faculty Staff Handbook, Section 203, Faculty Code of Conduct*.) Section 203 reads as follows:

"The Institution is devoted to the pursuit of learning in the broadest sense. Its public responsibilities include the transmission of learning, the creation of knowledge, and the performance of services in related endeavors. Traditionally, colleges have served not only as transmitters of learning and repositories of knowledge, but also as institutions for the development of that innovation and criticism without which civilization cannot progress. In the fulfillment of these traditional obligations, the Institution and its members are occasionally put in a position of apparent conflict among themselves and society. It is sometimes inevitable that new knowledge should find itself at odds with the old. Experimentation with new ideas and criticism of society is the inevitable and desirable result of a properly functioning institution."

"These conflicts between the Institution and the community, and within the Institution itself, must not be allowed to interfere with the effective operation of the Institution. It is essential that the membership of the Institution be guaranteed freedom of expression, inquiry, association, criticism, and dissent without fear of reprisal, bodily harm, or physical disorder. The responsibility of maintaining academic freedom is shared by the Institution and through the persons of its students, its faculty, its administrators and its regents and by society."

(Please see Standard 4.A.7 for a more complete discussion of the protection of academic freedom at Montana Tech.)

CLOSING THE LOOP

In summary, Montana Tech has not only identified both strengths and opportunities for its faculty, but it has also identified areas in which it intends to move forward in faculty development.

Strengths

The growth in research and scholarly activity by instructional faculty over the past decade is clearly a strength of the Montana Tech faculty. During this period, the instructional faculty experienced a fourfold increase in annual funding and a threefold increase in the annual number of publications. A faculty, which is both research and scholarly active, synergistically compliments, informs, and stimulates teaching in concordance with our mission to *“supply... a strong undergraduate curriculum augmented by research”* and to *“provide a quality education that blends theory with practice.”* That this goal has been accomplished in the face of high teaching loads is a testimony to the dedication and hard work of our research-active faculty.

Opportunities

While Montana Tech has made several efforts to increase faculty salaries--including providing equity raises to full professors and pinning research salaries to peer averages--faculty salaries still lag behind national averages. Although the ability to raise faculty salaries is tied to external forces largely beyond the institution's control (e.g., state budgets and the economy in general), Montana Tech needs to be ever vigilant in bringing faculty salaries closer to national averages. In addition, further continued growth in research and scholarly activity will require systematic and selective reduction in teaching loads.

Moving Forward

Moving forward, Montana Tech will:

- » strive to recruit faculty who desire to excel both in the classroom and in research and scholarly activity;
- » broaden the base of faculty who successfully pursue scholarship and research;
- » seek funds to support merit increases in salary; and
- » attempt to reduce teaching loads for research-active faculty who are supported by external grants.

Moving forward in this direction will enable Montana Tech to continue to fulfill a guiding principle of its mission, *“To recruit, encourage, and enable faculty to develop regional and national reputations in teaching and research.”*

SELF-STUDY 2010

POLICY 4.1 FACULTY EVALUATION

As stated in Standard Four, the effectiveness and quality of an institution's total educational program depend upon the presence of a competent faculty. Further, it is the institution's obligation, in consultation with the faculty, to evaluate the performance of its faculty members and to provide for their development on a continuing basis.

Standard Four also calls for faculty members to be safeguarded in their exercise of academic freedom. The protection of academic freedom does not lessen the need for performance evaluation of temporary or permanent members of the faculty to ensure, on a continuing basis, the effectiveness and quality of those individuals responsible for the academic program. This ongoing evaluation may take several forms, in accordance with the size, complexity, and mission of the institution, including, for example, annual merit salary evaluations of a significant nature, promotions, and/or tenure reviews, periodic post-tenure reviews, or reviews conducted in response to some institutional need. The requirement of this policy is that the accredited institution shall conduct a comprehensive evaluation of each faculty member in a regular and systematic manner at least once within each five-year period of service. The institution's faculty evaluation process shall contain a provision to address concerns that may emerge between regularly scheduled evaluation activities.

In establishing a program of continuing faculty evaluation and in supporting a program of faculty development, institutions shall meet the following requirements:

a. Institutions develop collegially and implement internal plans and procedures that specify the process and criteria by which faculty members are evaluated on a continuing basis.

All Montana Tech faculty are evaluated annually, with the exception of full professors, approximately one-third of whom are evaluated every 3 years. Part-time faculty are evaluated at the end of each semester in which they teach, but are only evaluated on instruction. Detailed policies and procedures governing the evaluation of faculty are described in:

- » Exhibit 4.A. XVI, *Faculty Staff Handbook, Section 206, Evaluation, Promotion, and Tenure – North Campus Faculty* for all faculty in four year B.S. and M.S. granting programs;
- » Exhibit 4.A.IX, *MTFA-CBA, Article 14, Faculty Evaluation*, for faculty in four year B.S. and M.S. granting programs, who are part of the MTFA Collective Bargaining Unit (where The Faculty Staff Handbook and the MTFA-CBA differ, the MTFA-CBA takes precedence);
- » Exhibit 4.A. XVI, *Faculty Staff Handbook, Section 207, Evaluation, Promotion, and Tenure –COT Faculty* for faculty in the certificate and two year programs in the College of Technology (COT);
- » Exhibit 4.A.X, *VTEM-CBA, Article 7, Faculty Evaluation*, for faculty in the certificate and two year programs in the College of Technology (COT), who are part of the VTEM Collective Bargaining Unit (where The Faculty Staff Handbook

- and the VTEM-CBA differ, the VTEM-CBA takes precedence);
- » Exhibit 4.A. XVI, *Faculty Staff Handbook*, Section 208, Classification and Promotion - Montana Bureau of Mines and Geology Professional Faculty and Staff for faculty and staff in the Montana Bureau of Mines and Geology (MBMG), which is a department of Montana Tech and a Montana State service agency; and
 - » Exhibit 4.A. XVI, *Faculty Staff Handbook*, Section 206.4 for part-time faculty who are expected to prepare an evaluation portfolio, which addresses instruction only and follows the same guidelines as full-time faculty.

All of the above documents had significant faculty involvement in their development and require appropriate faculty approval for their modification. (Please see Section 4.A.5 of this Standard for a more detailed discussion of faculty evaluation.)

b. Collegial participation in faculty performance evaluation is critical in order to bring subject matter and pedagogical knowledge substantively into the assessment process. Nonetheless, it is the obligation of the administration to ensure quality and effectiveness of the educational program through the evaluation of faculty performance. At a minimum, an institution's evaluation plans must include administrative access to all primary or raw evaluation data.

Department Heads are encouraged to solicit written input from departmental colleagues on all evaluations of faculty and are required to solicit this input from tenured members of the department for annual probationary, promotion, and tenure evaluations. Examples of forms that can be used in soliciting this input are contained in Exhibit 4.A. XVI, *Faculty Staff Handbook*, Appendix B – Tenure Progress Report (Dept Faculty) and in Appendix C – Tenure Progress Report (Dept Head). Input from colleagues is based on a review of the faculty member's evaluation portfolio. In addition to input from departmental and other colleagues, confidential external letters addressing the potential and accomplishments of the faculty member are required for promotion and tenure evaluations. Both the annual evaluations and the every 3rd year evaluations for full professors are carried out at the department level and administered by the Department Head (except in the case where the Department Head is being evaluated, when the Dean would administer the evaluation), with the final evaluation documents copied to the appropriate College Dean. Mid-tenure, tenure, and all promotion evaluations begin at the department level and progress to the Dean, Collegiate Evaluation Committee, Vice Chancellor for Academic Affairs and Research, and to the Chancellor. Within seven calendar days of forwarding the evaluation to the next stage, the affected faculty member is apprised of the positive or negative recommendation resulting from the evaluation at the previous stage. All promotion and tenure evaluations - except mid-tenure - are reviewed by the President of The University of Montana with which Montana Tech is affiliated. Ultimately promotion and tenure are granted by the Board of Regents that governs the Montana University System.

In all of these evaluations, the evaluation portfolio that was originally prepared by the affected faculty member and which contains much of the primary data on which the evaluation is based, is available for review by all faculty and administrators involved

SELF-STUDY 2010

in the review process. In addition, the raw student course evaluation data are available to the faculty member and to appropriate administrators at the web-based course evaluation archive [On-Line Access to Student Evaluations](#).

c. Multiple indices are utilized by the administration and faculty in the continuing evaluation of faculty performance. Each of these data sources is to be related to the role of the faculty member in carrying out the mission of the institution.

Montana Tech's mission requires that all faculty members demonstrate effectiveness in instruction, in scholarship and research, and in service. The evaluation of faculty in these broad areas is described in detail in Standard 4.A.5. Faculty members at the associate professor level or lower are evaluated annually, while full professors are evaluated every three years. Each of these evaluations begins with the affected faculty preparing a self-evaluation portfolio describing achievements and containing critical self-analysis of performance over the relevant time period. When the faculty member is undergoing review for promotion or for tenure, these self-evaluations may extend over a time period longer than the previous year. These portfolios, which contain summaries of the faculty member's standardized student evaluations as well as an analysis of the faculty member's contributions in research/scholarship and service, form the basis for peer review by the faculty member's departmental colleagues and by others in the evaluative chain. These individual peer reviews are collected by the department head who provides a summary to the affected faculty member. In instances where the faculty member is under review for promotion or tenure additional review is solicited from faculty peers or others external to the department or college, who are in a position to comment meaningfully on the faculty member's performance. An example portfolio with evaluations at all administrative levels for a faculty member who successfully applied for tenure is provided in Exhibit 4.A.XX, *Faculty Promotion and Tenure Portfolio*.

Some examples include:

1) The evaluation of teaching through student, peer, and administrative assessment.

- » As required by the [Faculty Staff Handbook](#), Section 206.4, the MTFA-CBA, Section 22.311, and by the VTEM-CBA faculty instruction in all courses is evaluated by students in each course each time the course is taught. Students are required to use the standardized student evaluation form, which can be viewed in Exhibit 4.A.XVII, [Montana Tech Course Instruction Evaluation Form](#) and which was developed by a faculty committee and agreed to by a vote of the general faculty.
- » In addition faculty may opt to use Small Group Instructional Diagnosis (SGID). Faculty subject to MTFA-CBA are required to obtain peer review of their instruction through classroom observation to assess their instruction. Faculty are free to include the results of these approaches in summative evaluations of their teaching effectiveness.

- » Input on instructional effectiveness, which is based on close examination of data provided in the faculty member's self-evaluation portfolio, is solicited from departmental faculty peers annually for all full-time faculty at the associate professor level or lower and every third year for full professors.
- » Based on a review of the student and peer evaluations noted above and the faculty member's self-evaluation portfolio, department heads provide a written summary of instructional effectiveness annually for all full-time faculty at the associate professor level or lower and every third year for full professors. Whenever the faculty member under review happens to be a department head, this summary is written by the appropriate College Dean.

2) The evaluation of the quality of scholarly performance and/or research productivity as reflected in peer judgments about publication and success in securing external funding.

- » A faculty member's effectiveness in scholarship and research is judged on the following:
 - the number (mostly) and quality of publications;
 - the number and venue of presentations;
 - the involvement and mentoring of students in research;
 - the number and dollar amount of funded research projects; and
 - the number of grant applications,as reflected in the faculty member's self-evaluation portfolio and resume.
- » Input on effectiveness in research/scholarship, based on an examination of the faculty member's self-evaluation portfolio, is solicited from departmental faculty peers. This process is carried out annually for all full-time faculty at the associate professor level or lower and every third year for full professors.
- » For faculty undergoing review for tenure and promotion, input on a faculty member's effectiveness in scholarship and research is solicited from faculty peers external to the department and/or the College involved.
- » Based on a review of the peer evaluations noted above and the faculty member's self-evaluation portfolio, department heads provide a written summary of the faculty member's effectiveness in scholarship and research annually for all full-time faculty at the associate professor level or lower and every third year for full professors. Whenever the faculty member under review happens to be a department head, this summary is written by the appropriate College Dean.

3) The evaluation of service to the profession, school, and community.

- » A faculty member's effectiveness in service to the profession, institution, department, and to the community is judged on activities noted in the faculty member's self-evaluation portfolio and resume.
- » Input on a faculty member's effectiveness in service, which is based on close examination of information found in the faculty member's self-evaluation

SELF-STUDY 2010

portfolio, is solicited from departmental faculty peers. This process is used annually for all full-time faculty at the associate professor level or lower and every third year for full professors.

- » Input on a faculty member's effectiveness in service may be provided by or solicited from faculty peers, staff, or administration, who are external to the department and/or from others who are external to Montana Tech.
- » Based on a review of the peer and other evaluations noted above and the faculty member's self-evaluation portfolio, department heads write a summary of a faculty member's effectiveness in service. This is done annually for all full-time faculty at the associate professor level or lower and every third year for full professors. Whenever the faculty member under review happens to be a department head, this summary is written by the appropriate College Dean.

d. Where areas for improvement in a faculty member's performance are identified, the institution works with the faculty member to develop and implement a plan to address identified areas of concern.

Montana Tech relies heavily on the various levels of administrative summaries noted above, especially if the faculty member's performance is of concern. These written administrative summaries can extend all the way to the Chancellor and beyond for faculty undergoing review for tenure and promotion. The administrative summaries usually contain guidance on what a faculty member needs to do and/or how a faculty member can improve in areas where a faculty member's performance has been noted as being of concern or deficient. In some instances, written plans for improvement are developed and agreed to by the parties involved. Typically, the faculty member's response to these suggestions and plans is monitored and commented on at the time of the next administrative review.

To conclude, the requirement for the continuing evaluation of faculty performance is to be accomplished through the joint efforts of faculty and administration. The retention of a competent faculty helps ensure that the mission of an institution of higher education is being accomplished in a manner consistent with its accredited status.

SUPPORTING DOCUMENTATION FOR STANDARD FOUR

REQUIRED DOCUMENTATION

1. **Statistics available concerning faculty and administration characteristics, such as numbers of males and females, minorities, full-time and part-time faculty, years of service with the institution, degrees or levels of education, and years of other significant service.**

Exhibit 4.A.I – *Summary of Faculty Characteristics* provides a summary of a number of defining characteristics of the current Montana Tech full-time faculty by rank. These characteristics include - the number of faculty, the number of faculty holding particular degrees, the percent females, the number of faculty with 4-year and 2-year program affiliation, and the percent faculty who are Caucasian. These characteristics also include the percent faculty who are tenured, the average years at Montana Tech, and an average over the last five years of the number of publications and funded grants.

2. **Completed Table 1, *Institutional Faculty Profile* and Table 2, *Number and Source Terminal Degrees of Faculty*.**

Exhibit 4.A.II, Table 1 – *Institutional Faculty Profile*; follows this page in this document and provides by rank the number of full-time and part-time faculty. This exhibit also gives for full-time faculty by rank the number of faculty holding particular degrees and the minimum, median, and maximum; salaries. The profile also includes years of experience at the institution, total years of teaching experience, and the credit load in the previous term.

Exhibit 4.A.III, Table 2 – *Number and Source of Terminal Degrees of Faculty* follows this page in this document and provides the number and type of terminal degree held by full-time faculty at Montana Tech.

3. **Salary data for faculty, including compensation for special or extra responsibilities.**

Salary data for full-time faculty are contained in Exhibit 4.A.XII, *Faculty Salary Data*. These data contain rank, *College and University Professional Association (CUPA) National Faculty Salary Survey* salaries, total salary, state salary, extra compensation, stipends, and grant-derived salary. Minimum, median, and maximum salaries by rank are also included in Standard 4, Exhibit 4.A.II, Table 1, *Institutional Faculty Profile*.

4. **Policy and procedures on the evaluation of faculty, both full-time and part-time.**

Procedures and expectations for evaluation, tenure, and promotion of faculty at Montana Tech can be found in the following exhibits:

- » Exhibit 4.A. XVI, *Faculty Staff Handbook, Section 206, Evaluation, Promotion, and Tenure – North Campus Faculty* for all faculty in four year B.S. and M.S. granting programs;
- » Exhibit 4.A.IX, *MTFA-CBA, Article 14, Faculty Evaluation*, for faculty in 4-year B.S. and M.S. granting programs, who are part of the MTFA Collective Bargaining

SELF-STUDY 2010

- Unit (where The Faculty Staff Handbook and the MTFA-CBA differ, the MTFA-CBA takes precedence);
- » Exhibit 4.A. XVI, *Faculty Staff Handbook, Section 207, Evaluation, Promotion, and Tenure –COT Faculty* for faculty in the certificate and 2-year programs in the College of Technology (COT);
 - » Exhibit 4.A.X, *VTEM-CBA, Article 7, Faculty Evaluation*, for faculty in the certificate and 2-year programs in the College of Technology (COT), who are part of the VTEM Collective Bargaining Unit (where The Faculty Staff Handbook and the VTEM-CBA differ, the VTEM-CBA takes precedence);
 - » Exhibit 4.A. XVI, *Faculty Staff Handbook, Section 208, Classification and Promotion - Montana Bureau of Mines and Geology Professional Faculty and Staff*, for faculty and staff in the Montana Bureau of Mines and Geology (MBMG), a department of Montana Tech and a Montana State service agency; and
 - » Exhibit 4.A. XVI, *Faculty Staff Handbook, Section 206.4*, for part-time faculty who are expected to prepare an evaluation portfolio addressing instruction only, but who are expected to follow the same guidelines as full-time faculty.

EXHIBIT 4.A.I, SUMMARY OF FULL-TIME FACULTY CHARACTERISTICS

RANK OR CLASS	FULL-TIME FACULTY													
	#	NUMBER OF TERMINAL DEGREES					GEN	PROG		ETHN	TEN-URED	YRS @ TECH	# PUBS	# FUNDED GRANTS
	FULL TIME	DR	M	B	PRO LIC	LESS THAN BAC	% FE-MALE	4 YR	2 YR	% WHITE	%	MED-IAN	AVG OVER LAST 5 YRS	AVG OVER LAST 5 YRS
Professor	40	40	0	0	11	0	15	40	0	95	98	19	5	3
Associate Professor	24	14	10	0	5	0	42	24	0	100	62	14	3	2
Assistant Professor	41	22	19	0	8	0	37	41	0	95	5	5	4	1
Adjunct	12	1	9	1	1	0	25	11	1	100	0	10	<0.5	0
Instructor I	6	1	2	1	1	2	20	3	2	100	0	2.5	1	<0.5
Instructor II	10	0	3	7	1	0	70	4	6	100	30	11	<0.5	<0.5
Instructor III	7	0	6	1	0	0	71	1	6	100	100	16	<0.5	2
Research	30	8	20	2	1	0	27			97	7	17.5	7	3
Visiting Faculty	6	1	3	1	1	1	33	4	2	100	0	2.5	1	0

TABLE 1: INSTITUTIONAL FACULTY PROFILE

RANK OR CLASS	N		FULL-TIME FACULTY																	
			# TERMINAL DEGREES					SALARY, 9 MO			YRS EXP @ INSTITUTION			TOTAL YRS TEACH EXP			PREV FALL TERM CR H LOAD			
	F-T	P-T	Dr	M	B	Pro Lic	< Bac	Min \$K	Med \$K	Max \$K	Min	Med	Max	Min	Med	Max	Min	Med	Max	
Professor	40	0	40	0	0	11	0	45.3	74.1	92.0	7	19	36	8	21	41	0	10	19	
Associate Professor	24	0	14	10	0	5	0	51.9	60.4	78.3	4	9.5	40	0	13	44	0	10	25	
Assistant Professor	41	0	22	19	0	8	0	44.0	54.5	77.5	1	3	19	0	5	19	0	9	16	
Adjunct	12	90	1	9	2	1	0	38.1	43.3	48.9	2	6.5	23	0	12	20	2	3.5	12	
Instruct I	6	0	1	2	1	1	2	36.6	47.9	61.9	1	2.5	3	1	2.5	20	3	12	24	
Instruct II	10	0	0	3	7	1	0	39.9	43.8	56.5	4	11	32	4	15.5	32	0	16	32	
Instruct III	7	0	0	6	1	0	0	46.3	47.2	59.0	9	16	38	9	27	39	6	15	24	
Research	30	1	8	20	2	1	0	46.6	62.9	96.8	1	17.5	44	0	0	21	0	0	4	
Graduate Assistant	0	39																		
Research Assistant	0	25																		
Visiting Faculty	6	0	1	3	1	1	1	44.0	44.3	51.5	1	2.5	3	1	4	28	7	9	12	

TABLE 2: NUMBER AND SOURCE OF TERMINAL DEGREES OF FACULTY

INSTITUTION GRANTING TERMINAL DEGREE	NUMBER OF DEGREES		
	DOCTOR	MASTER	BACHELOR
Bryn Mawr College	1		
Carroll College			1
Colorado School of Mines	3		
Cornell University	3		
Dalhousie University	1		
Indian Institute of Science, Bangalore	1		
Indiana University		1	
Iowa State	1		
Lesley University		3	
Loyola University	1		
Massachusetts Institute of Technology	1		
Miami University		1	
Michigan State University	1		
Michigan Technology University		1	
Missouri S&T	1		
Montana College of Mineral Science & Technology		2	

SELF-STUDY 2010

TABLE 2: NUMBER AND SOURCE OF TERMINAL DEGREES OF FACULTY (CONTINUED)

INSTITUTION GRANTING TERMINAL DEGREE	NUMBER OF DEGREES		
	DOCTOR	MASTER	BACHELOR
Montana State University Northern		1	2
Montana State University	8	9	
Montana Tech The University of Montana	1	16	3
Nanyang Technological University	1		
New Mexico Tech	1		
Ohio State University	1		
Ohio University			1
Oregon State University	2	1	
Penn State University	1		
Purdue University	1		
Seattle Pacific University			1
Southern Methodist University	1		
Stanford University	1		
State University of New York	1		
Syracuse University	1		
Tulane University		1	
University of Alaska, Fairbanks	1	1	
University of Albany		1	
University of Arizona	3		
University of California	2		
University of California, Berkeley	1		
University of California, Davis		1	
University of California, Riverside	1	2	
University of Colorado	1	1	
University of Denver	1	1	
University of Florida, Gainesville	1		
University of Glasgow, UK	1		
University of Houston	1		
University of Idaho	2		
University of Illinois		1	
University of Kansas	2		
University of Kentucky	1		
University of Minnesota	1	1	

**TABLE 2: NUMBER AND SOURCE OF TERMINAL DEGREES
OF FACULTY (CONTINUED)**

INSTITUTION GRANTING TERMINAL DEGREE	NUMBER OF DEGREES		
	DOCTOR	MASTER	BACHELOR
University of Montana	10	12	
University of New Brunswick	1		
University of New Mexico	4		1
University of North Carolina	1		
University of North Dakota		1	
University of Phoenix	1	1	
University of Pittsburg	1		
University of Rhode Island	1		
University of Southern California, Los Angeles	1		
University of Tennessee	2		
University of Texas, Austin	1	1	
University of Texas, Dallas	1		
University of Utah	2	1	
University of Washington	1	2	
University of Wisconsin, Madison	1		
University of Wyoming	4		
Utah State University	1		
Virginia Tech		1	
Washington State University	2	1	
Wayne State University		1	
Western Virginia University	2		
Western Montana College			2
Wright State University		2	

SELF-STUDY 2010

5. Representative examples of the institutional and public impact of faculty scholarship.

Global Warming

Montana Tech researchers have participated in two recent research expeditions to Antarctica, and plans are nearly complete for two additional trips to the Earth's coldest continent. During the austral spring-summer, 2005, approximately 28 km of over-sea-ice seismic reflection data were recorded over Southern McMurdo Sound (SMS), Antarctica, in support of the *Antarctic Geological Drilling Program (ANDRILL)*. ANDRILL is a consortium of four nations whose goal is to recover sediment cores from the Antarctic continental margin. These sediment cores will help earth scientists better understand Antarctica's glacial, climate, and tectonic history for the past 50 million years.



Montana Tech professor Marvin Speece and Montana Tech graduate student Seth Betterly helped plan this survey and collect these data. The 2005 ANDRILL Southern McMurdo Sound (SMS) seismic survey incorporated techniques that improved the quality of over-sea-ice seismic data (Speece et al., 2007; Betterly et al., 2007).

Advanced Electric Grid Control

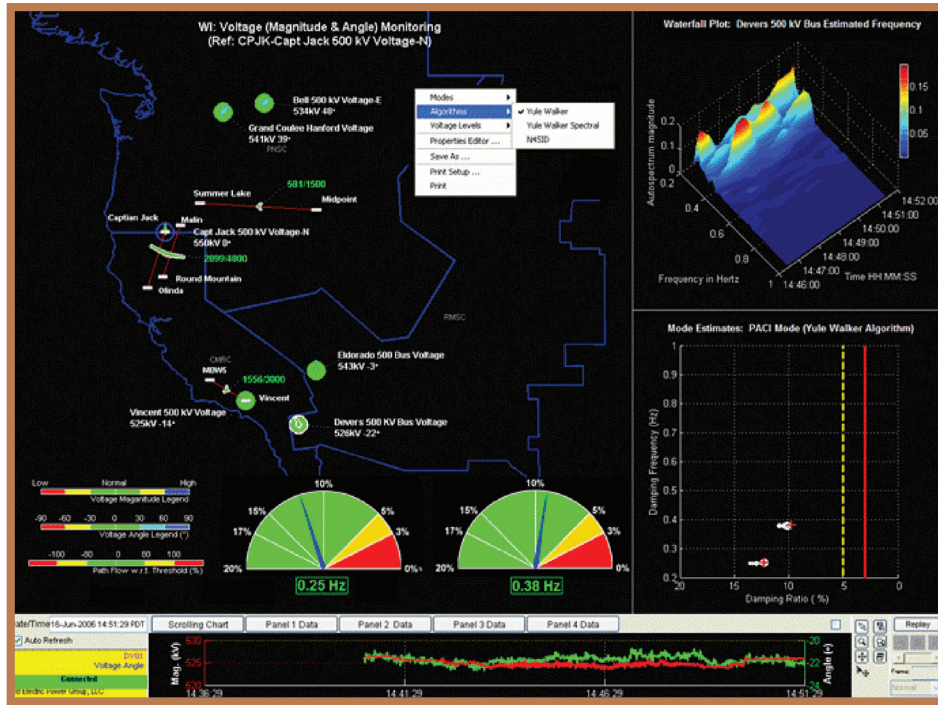
An efficient, reliable, and affordable electric-power grid continues to be critical to the economic and social health of the United States. Growing demand, lack of investment, and new national security requirements all point to the need for significant investment in upgrading the US power grid. Recent indicators of this include the significant increase in power outages over the last decade; these include the massive outages experienced by the western North American power system in August and July 1996, and the August 2003 east-coast power outage. These massive outages are the first since the northeast coast outage in 1965. Advanced control and new operating paradigms offer considerable benefits in terms of cost savings, reliability, and national security for the grid of the future.

The pictures show two manifestations of the future electric grid. The first illustration depicts a smart dryer that senses the condition of the grid and can reduce or eliminate its load to help stabilize a faulty grid. The second graphic illustrates a simulation of the northwest grid which tracks power flow and the frequency oscillations that are predictors of impending collapse.



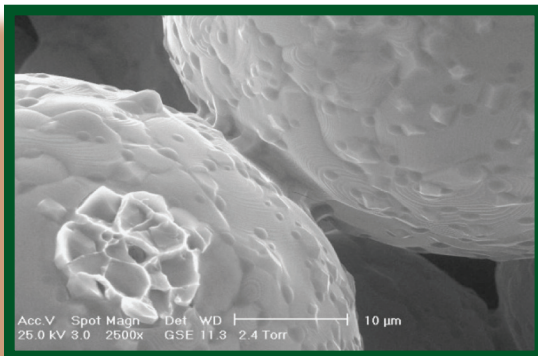
Recognizing this potential, the USDOE has provided funding to Montana Tech to develop key technologies for applying real-time advanced control to improve grid reliability and efficiency. Our program is developing advanced control

technologies for improving grid reliability and efficiency, facilitating deployment of these technologies to the industry, and educating the next generation of engineers in intelligent utilization and operation of electrical energy systems.



Titanium Fabrication

Military systems of the future will require improvements in transportability, maneuverability, stealth, and in durability. Free-form fabrication using titanium-based alloys shows promise to meet these objectives. However, current high costs associated with fabricating titanium-based alloys remain the main obstacle for widespread use as a material of construction.

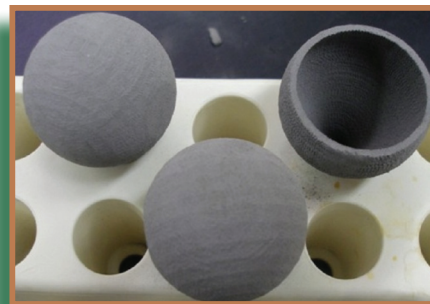


Montana Tech is exploring the use of free-form fabrication technology based on fabrication with a three-dimensional printing machine. This system uses metal powders and layer-by-layer deposition. The resultant assembly is then sintered at high temperatures giving the resultant micro structure shown. This method is a more economical titanium fabrication technique when it is compared to current casting

methods and may be suitable for making titanium and titanium alloys as inexpensive commodity metals for general use, rather than as exotic materials to be used only when their high performance is required despite their present high cost.

SELF-STUDY 2010

The US Navy is currently sponsoring a program to fabricate components for a low thermal and acoustic signature fuel cell power supply. Montana Tech is fabricating a novel H₂ filter using free form technology to produce these light-bulb sized components shown at the right.



6. Summary of the most significant artistic creation, scholarly activity, and research by faculty during the past five years.

Biology

Kasinath, R.K. —K.H. Prakash, L. Grøndahl, R. Kumar, D. Martin and M. Trau, An Organic Matrix-Mediated Processing Methodology to Fabricate Hydroxyapatite based Nanostructured Biocomposites, *Nanoscale*, 2009, DOI: 10.1039/B9NR00062C, published online 8/12/2009.

Pedulla, M.L. —Pope, W.H.; Weigle, P.R.; Chang, J.; **Pedulla, M.L.**; Ford, M.E.; Houtz, J.M.; Jiang, W.; Chiu, W.; Hatfull, G.F.; Hendrix, R.W.; and King, J.; "Genomic and structural analysis of Syn9, a cyanophage infecting marine *Prochlorococcus* and *Synechococcus*," *Environmental Microbiology*: In press.

Apple, M. — D. Olszyk, **M. Apple**, B. Gartner, R. Spicer, C. Wise, E. Buckner, A. Benson-Scott and D. Tingey. 2005. Xeromorphy increases in shoots of *Pseudotsuga menziesii* (Mirb.) Franco seedlings with exposure to elevated temperature but not elevated CO₂. *Trees* 19:552-563.

Liberal Studies

Ziegler, Robert. *The Nothing Machine: The Fiction of Octave Mirbeau*, Amsterdam: Presses Rodopi, 2007.

Ziegler, Robert. "Necrophilia and Authorship in Rachilde's 'La Tour d'amour.'" *Nineteenth-Century French Studies* Vols. 3-4. Nos. 1-2 (Winter 2006-6): 134-145.

Ziegler, B. *The Mirror of Divinity: The World and Creation in J.-K. Huysmans*, Newark, DE: The University of Delaware Press, 2004 (book).

Engineering

Trudnowski, D., J. Pierre, N. Zhou, J. Hauer, and M. Parashar, "Performance of Three Mode-Meter Block-Processing Algorithms for Automated Dynamic Stability Assessment," *IEEE Transactions on Power Systems*, vol. 23, no. 2, pp. 680-690, May 2008.

Trudnowski, D., **M. Donnelly**, and E. Lightner, "Power-System Frequency and Stability Control using Decentralized Intelligent Loads," Proceedings of the 2005/2006 IEEE PES T&D Conference and Exposition, Dallas, TX, May 2006.

MacLaughlin, M. M. and D. M. Doolin (2006). Review of Validation of the Discontinuous Deformation Analysis (DDA) Method, *International Journal for Numerical and Analytical Methods in Geomechanics*, 30/4 (April 2006): pp 271-305

Global Warming

Speece, M. A. — Betterly, S. J., **Speece, M. A.**, Levy, R. H., Harwood, D. M., and Henrys, S. A., A novel over-sea-ice seismic reflection survey in McMurdo Sound, Antarctica, *Terra Antarctica*, 14(2), 97-106 (2007).

Speece, M. A. — Pekar, S. F., **Speece, M. A.**, Harwood, D. M., Florindo, F., and Wilson, G., 2007. Using new tools to explore undiscovered country: understanding the stratigraphic and tectonic history of greenhouse to icehouse worlds of offshore New Harbor, Ross Sea, Antarctica: in Cooper, A. K. and Raymond, C. R. et al (eds.), *A Keystone to a Changing World—Online Proceedings of the 10th ISAES, USGS Open-File Report 2007-1047*, Extended Abstract 169, 4 pp.

Zhou, X., N.-B. Chang, and S. Li, “Detection of Coastal Region Sea Ice Decay from Orthorectified RADARSAT-1 ScanSAR Imagery: A Case Study of Bering Strait and Norton Sound, Alaska,” *Journal of Environmental Informatics*, 10(1), 37-46, 2007.

Emerging Infectious Diseases

Kuenzi, A.J.—Calisher, C. H., K. D. Wagoner, B. R. Amman, J. J. Root, **R. J. Douglass, A. J. Kuenzi,** K. D. Abbott, C. Parmenter, T. L. Yates, T. G. Ksiazik, B. J. Beaty, and J. N. Mills. 2007. Demographic factors associated with prevalence of antibody to Sin Nombre virus in deer mice in the western United States. *Journal of Wildlife Diseases* 43:1-11.

Douglass, R.J.—Lonner, B, **RJ Douglass, AJ Kuenzi** and **K. Huges.** Seroprevalence Against Sin Nombre virus in Resident and Dispersing Deer Mice. *Vector Borne and Zoonotic Diseases* (In Press)

Large River Ecosystems

Gammons C.H.—**Parker S. R., Gammons C. H.,** Poulson S. R., and DeGrandpre M. D. (2007) Diel changes in pH, dissolved oxygen, nutrients, trace elements, and the isotopic composition of dissolved inorganic carbon in the upper Clark Fork River, Montana, USA. *Applied Geochemistry* 22, 1329-1343

Weight, W. D. — **Gammons, C.H.,** Slotten, D.G., **Gerbrandt, B., Weight, W.D., Young, C.A., McNearny, R.L.,** Camac, E., Calderon, R., and Tapia, H. (2005). Mercury concentrations of fish, river water, and sediment in the Rio ramis-lake titicaca watershed, Peru. Online at www.sciencedirect.com, *Science of The Total Environment*, Volume 368, Issues 2-3, 15 September 2006, Pages 637-648.

Zhou, X. — Makkeasorn, A., N. B. Chang, and **X. Zhou,** “Stream flow forecasting with the aid of NEXRAD, sea surface temperatures, and meteorological characteristics using genetic programming,” *Journal of Hydrology*, in press

SELF-STUDY 2010

Medicinal Chemistry

Stierle, A., D.B. Stierle and K.Kelly. Berkelic acid, A Novel Spiroketal with Selective Anticancer Activity from an Acid Mine Waste Fungal Extremophile, 2006, *Journal of Organic Chemistry*, 71:5357-5360

Stierle, D.B., Stierle, A.A.; Stierle, D.B.; Patacini, B.J. "The Berkeleyamides: Four Amides From the Acid Lake Fungus *Penicillium rubrum*." *J.Nat.Prod.*, in press.

REQUIRED EXHIBITS

1. Faculty handbook, including personnel policies and procedures.

The [*Faculty Staff Handbook*](#) and Montana Tech Faculty Association (MTFA) and Vocational-Technical Educators of Montana (VTEM) Collective Bargaining Agreements (CBAs) can be found in the following exhibits:

- » Exhibit 4.A.IX – [*MTFA-CBA, Montana Tech Faculty Association Collective Bargaining Agreement*](#);
- » Exhibit 4.A.X – [*VTEM-CBA, Vocational-Technical Educators of Montana Collective Bargaining Agreement*](#); and
- » Exhibit 4.A. XVI – [*Faculty Staff Handbook*](#).

Personnel policies and procedures can be found in:

- » Exhibit 4.A.XXII – [*Personnel Policies and Procedures*](#).

2. Policy on Academic Freedom.

Montana Tech's policies on academic freedom can be found in the following exhibits:

- » Exhibit 4.A. XVI – [*Faculty Staff Handbook; Section 202, Academic Freedom and Section 203, Faculty Code of Conduct*](#)
- » Exhibit 4.A.IX – [*MTFA-CBA, Article 9, Academic Freedom and Responsibility*](#); and
- » Exhibit 4.A.X – [*VTEM-CBA, Article 4.15, Academic Freedom*](#).

These policies on academic freedom are based on the Montana Board of Regents Policy 302 (see Exhibit 4.A.XXVI – [*Montana Board of Regents Policy 302*](#)), which in turn is based on the 1940 Statement of Principles on Academic Freedom and Tenure of the American Association of University Professors and subsequent revisions (Exhibit 4.A.XXVII – [*AAUP 1940 Statement of Principles on Academic Freedom and Tenure*](#)).

3. Faculty Committees and Membership

Faculty participate actively on a large number of campus committees. Please see Exhibit 4.A.VI - [*2009-2010 Committee Rosters*](#).

4. Evaluation forms and summary reports of student evaluations of faculty and courses.

A copy of Montana Tech's standardized student instructional evaluation form and a completed example of this evaluation form for a particular course are included in the following exhibits:

- » Exhibit 4.A.XVII – [*Montana Tech Course Instruction Evaluation Form*](#); and
- » Exhibit 4.A.XVIII – [*Sample Real Course Evaluation*](#).

Access has also been provided for the Northwest Evaluation Team to examples of individual course evaluations for faculty in Exhibit 4.A.XIX – *Example of Student Evaluations*.

5. Access to personnel files and current professional vitae.

Personnel files and current standardized professional vitae are available in the exhibits:

- » Exhibit 4.A. IV – *Standardized Résumés of Full-Time Faculty*; and
- » Exhibit 4.A.V – *Standardized Résumés of Part-Time Faculty*.

6. Criteria and procedures for employing, evaluating, and compensating faculty in special programs such as off-campus, study abroad, travel/study, non-credit, or extension credit programs.

Montana Tech has had little to no involvement of faculty in study abroad, travel/study, non-credit, or extension credit programs. As a result, Montana Tech has developed no policies concerning faculty in these areas. However, the campus does teach some off-campus courses, notably the Business and Information Technology (BIT) program in Helena and several Jump-Start courses in Montana high schools. Faculty teaching in these courses are generally part-time faculty and are governed by the policies set forth for part-time faculty in the in [*The Faculty Staff Handbook*](#) (see Exhibit 4.A.XVI – [*Faculty Staff Handbook, Section 206.4, Evaluation of Part-Time Faculty*](#).) Faculty teaching in the Jump-Start program are usually high school teachers who have a Master's degree, who have their credentials and syllabus vetted by the appropriate Montana Tech department head, and who are only compensated if they teach outside of their normal school district contract hours.

7. Copies of any doctrinal statements required for employment, promotion, and tenure.

There are no doctrinal statements or loyalty oaths required for employment, promotion, or for tenure at Montana Tech.

SELF-STUDY 2010

8. Policies governing the employment, orientation, and evaluation of part-time faculty and teaching fellows, if applicable.

Procedures and expectations for recruitment, orientation, and evaluation of part-time faculty at Montana Tech are contained in the following exhibits:

- » Exhibit 4.A.XXVIII – *Part-Time Faculty Orientation Packet*; and
- » Exhibit 4.A.XVI – *Faculty Staff Handbook, Section 206.4, Evaluation of Part-Time Faculty*.

9. Summary reports of faculty involvement with public services/community services.

Faculty involvement in public/community service is detailed in each of the individual faculty resumes that can be found in exhibits:

- » Exhibit 4.A.IV – *Standardized Résumés of Full-Time Faculty*; and
- » Exhibit 4.A.V – *Standardized Résumés of Part-Time Faculty*.

Some of the more notable examples of public and community service by faculty are highlighted below:

- » **Dr. Jack Crowley**, Associate Professor of Liberal Studies, is a Board member of Butte AIDS Support Services, an organization that provides the local community with information about AIDS prevention and offers testing for AIDS. He also volunteers for Butte Special Riders, an organization that provides a horseback riding program for handicapped children and teenagers.
- » **Dr. Suzan Gazioglu**, Associate Professor of Mathematical Sciences, serves as a computer instructor for local senior citizens as part of Montana School District #1's Retired and Senior Volunteer Program (RSVP) program.
- » **Richard Johnson**, Associate Professor in General Engineering, is a search and rescue coordinator and licensed pilot.
- » **Steve Luft**, instructor III, in Trades and Technical, is on the Board of Directors of the Southwest Montana Affiliate of Habitat for Humanity.
- » **Allison McIntosh**, Associate Professor of Nursing, established and oversees a weekly Montana Tech Nursing Clinic at the Belmont Senior Center and at several public housing units in Butte. For this work, Allison was a finalist in 2004 for the Jimmy and Rosalyn Carter Partnership Award for Campus Community Collaboration in Montana.

10. Institutional policies regarding scholarship and artistic creation by faculty and students.

The Research Office has developed procedures and policies governing scholarship and artistic creation. These policies can be found in the following exhibits:

- » Exhibit 4.B.VI – *PI Training Info Packet*;
 - *Pre-Award Process*
 - *Post-Award Process*
 - *Intellectual Property and Technology Transfer*
 - *Conflict of Interest*

- » Exhibit 4.B.VII – *Conflict of Interest Policy, Forms, and Definitions*;
- » Exhibit 4.B.XXVI – *Research and Scholarly Activity Integrity Policy*;
- » Exhibit 4.B.XXVII – *BOR Policy 401 – Research and Technology Transfer*;
- » Exhibit 4.B.XXVIII – *BOR Policy 401.2 – Inventions and Patents*;
- » Exhibit 4.B.XXIX – *Invention and Patent Policy*;
- » Exhibit 4.B.XXX – *Invention and Patent Policy Disclosure Forms*;
- » Exhibit 4.B.XXXI – *Student Patent Rights MOU*;
- » Exhibit 4.B.XXXII – *Proposal Certification Form (PCF)*;
- » Exhibit 4.B.XXXIII – *PCF Form Instructions*;
- » Exhibit 4.B.XXXIV – *Indirect Costs and Benefits*;
- » Exhibit 4.B.XXXV – *IDC Policy*;
- » Exhibit 4.B.XXXVI – *IDC Rate Agreement*; and
- » Exhibit 4.B.XXXVII – *PI Handbook* and *Inserts*.

11. Institutional policies regarding research activity, including sponsored research by faculty and students.

In addition to the exhibits detailing policies and procedures listed above under Standard 4 Required Exhibits, 4.10, several policies have been developed to guide student research. These policies can be found in the following exhibits:

- » Exhibit 4.B.XIX – *URP Statement of Purpose*;
- » Exhibit 4.B.XX – *URP Guidelines*; and
- » Exhibit 4.B.XXI – *URP Charter*.

SELF-STUDY 2010

12. Summary of the faculty role in developing and monitoring policies and practices scholarship, artistic creation, and research.

Faculty involvement in developing and modifying policies that govern scholarship, artistic creation, and research occurs primarily through the activities of the Graduate Council and the Research Advisory Committee. The membership, mission statements, and meeting minutes for the last two years for these committees can be found in the following exhibits:

- » Exhibit 4.B.XII – *Graduate Council and Research Advisory Council Members*;
- » Exhibit 4.B.VIII – *Graduate Council Mission Statement*;
- » Exhibit 4.B.X – *Graduate Council Minutes*;
 - *Fall 2005, Fall 2006, Spring 2007, Fall 2007*
- » Exhibit 4.B. IX – *Research Advisory Council Mission Statement*; and
- » Exhibit 4.B. XI – *Research Advisory Council Minutes*.
 - *Fall 2005, Fall 2006, Fall 2007, Spring 2008*

Faculty also direct the Montana Tech Seed Grant program, which provides a very modest amount of start up monies to faculty who are within two years of the date of their initial hire. The membership, policies, and recent activities of the Montana Tech Seed Grant program can be found in the following exhibits:

- » Exhibit 4.B.XVI – *Seed Grants Committee Members*;
- » Exhibit 4.B.XV – *Seed Grants Program Mandate*; and
- » Exhibit 4.B.XVII – *Recent Seed Grant Awards*.

SUGGESTED MATERIALS

Statistics on faculty retention and turnover.

Table 4.A.VI in Section 4.A.4 of this self study presents retention data for the past four years by department and for Montana Tech as a whole. The data in this table show that Montana Tech has retained 94% of its faculty, averaged over a five-year period.

LIST OF EXHIBITS

4.A.1

Exhibit 4.A.I – *Summary of Faculty Characteristics*

Exhibit 4.A.II, Table 1 – *Institutional Faculty Profile*;

Exhibit 4.A.III, Table 2 – *Number and Source of Terminal Degrees of Faculty*

Exhibit 4.A. IV – *Standardized Résumés of Full-Time Faculty*

Exhibit 4.A.V – *Standardized Résumés of Part-Time Faculty*

4.A.2

Exhibit 4.A.VI – 2009-2010 Committee Roster

Exhibit 4.A.VII, *Committee Minutes*

Exhibit 4.A.VIII – Example Curriculum Review Request

Exhibit 4.A.IX – MTFA-CBA, *Montana Tech Faculty Association Collective Bargaining Agreement*

Exhibit 4.A.X – VTEM-CBA, *Vocational-Technical Educators of Montana Collective Bargaining Agreement*

4.A.3

Exhibit 4.A.IX – MTFA-CBA, *Article 21, Workload*

Exhibit 4.A.X, VTEM-CBA, *Appendix C - Memorandum of Understanding Faculty Workload*

Exhibit 4.A.XI – Montana Tech Course Schedules

4.A.4

Exhibit 4.A.II, Table 1 – Institutional Faculty Profile

Exhibit 4.A.XII – Faculty Salary Data

Exhibit 4.A.XIII – *Merit Plan*

Exhibit 4.A.XIV – Research Salary Policy

Exhibit 4.A.XV – Montana State University Board of Regents Policy 404.1, Consulting Services - Faculty

4.A.5

Exhibit 4.A. XVI – Faculty Staff Handbook

Section 206, Evaluation, Promotion, and Tenure – North Campus Faculty

Section 207, Evaluation, Promotion, and Tenure –COT Faculty

Section 208, Classification and Promotion - Montana Bureau of Mines and Geology Professional Faculty and Staff

Section 206.4, Evaluation of Part-Time Faculty

Exhibit 4.A.IX – MTFA-CBA, *Article 14, Faculty Evaluation*

Exhibit 4.A.X – VTEM-CBA, *Article 7, Faculty Evaluation*

Exhibit 4.A.XVII – Montana Tech Course Instruction Evaluation Form

Exhibit 4.A.XVIII – Sample Real Course Evaluation

SELF-STUDY 2010

Exhibit 4.A.XIX – Example Student Evaluations

Exhibit 4.A.XX – Faculty Promotion and Tenure Portfolio

*Exhibit 4.A.XXI – The Departmental Standards are an appendix to Exhibit 2.A.I,
Program Reviews*

4.A.6

Exhibit 4.A.XXII – Personnel Policies and Procedures

*Exhibit 4.A. XVI – Faculty Staff Handbook, Section 204, Recruiting and Selecting
New Faculty; Section 501, Hiring Procedures*

Exhibit 4.A.IX – MTFA-CBA, Article 10, Recruiting and Selecting of New Faculty

*Exhibit 4.A.X – VTEM-CBA, Article 9.5, Extended Postings and Hiring Between
Colleges*

Exhibit 4.A.XXIII – PRA Form

Exhibit 4.A.XXIV – Example PRA

Exhibit 4.A.XXV – Montana Tech Employment Web Site

Exhibit 4.A.XVI – Faculty Staff Handbook, Section 501, Relocation Expenses

4.A.7

Exhibit 4.A. XVI – Faculty Staff Handbook,

Section 202, Academic Freedom

Section 203, Faculty Code of Conduct

Exhibit 4.A.XXVI – Montana Board of Regents Policy 302

*Exhibit 4.A.XXVII – AAUP 1940 Statement of Principles on Academic Freedom and
Tenure*

Exhibit 4.A.IX – MTFA-CBA, Article 9, Academic Freedom and Responsibility

Exhibit 4.A.X – VTEM-CBA, Article 4.15, Academic Freedom

4.A.8

*Exhibit 4.A. XVI – Faculty Staff Handbook, Section 204, Recruiting and Selecting
Part-Time Faculty*

Exhibit 4.A.II, Table 1 – Institutional Faculty Profile

Exhibit 4.A.III, Table 2 – Number and Source of Terminal Degrees of Faculty

Exhibit 4.A.V – Standardized Résumés of Part-Time Faculty

4.A.9

Exhibit 4.A.XXVIII – Part-Time Faculty Orientation Packet

*Exhibit 4.A.XVI – Faculty Staff Handbook, Section 206.4, evaluation of part-time
faculty*

4.A.10

Exhibit 4.A.XXVIII – *Part-Time Faculty Orientation Packet*

4.B.1

Exhibit 4.B.I – *Research Annual Progress Report FY2006 and FY 2007*

Exhibit 4.B.II – *Research Annual Progress Report FY2005*

Exhibit 4.B.III – *Research Annual Progress Report FY2004*

Exhibit 4.B.IV – *Research Annual Progress Report FY2003*

Exhibit 4.B.V – *List of Published Scholarly Work (1999-2008)*

4.B.2

Exhibit 4.B.VI – *PI Training Info Packet*

Pre-Award Process

Post-Award Process

Intellectual Property and Technology Transfer

Conflict of Interest

Exhibit 4.B.VII – *Conflict of Interest Policy, Forms, and Definitions*

4.B.3

Exhibit 4.B.VIII – *Graduate Council Mission Statement*

Exhibit 4.B.IX – *Research Advisory Council Mission Statement*

Exhibit 4.B.X – *Graduate Council Minutes;*
Fall 2005, Fall 2006, Spring 2007, Fall 2007

Exhibit 4.B. XI – *Research Advisory Council Minutes;*
Fall 2005, Fall 2006, Fall 2007, Spring 2008

Exhibit 4.B.XII – *Graduate Council and Research Advisory Council Members*

4.B.4

Exhibit 4.B.XIII – *Office of Research Organization Structure*

Exhibit 4.B.XIV – *Office of Contracts and Grants Organization Structure*

Exhibit 4.B.XV – *Seed Grants Program Mandate*

Exhibit 4.B.XVI – *Seed Grants Committee Members*

Exhibit 4.B.XVII – *Recent Seed Grant Awards*

4.B.5

Exhibit 4.B.XVIII – *Distinguished Researcher Award* *Policy, Process, and Winners*

SELF-STUDY 2010

4.B.6

Exhibit 4.B.XIX – URP Statement of Purpose

Exhibit 4.B.XX – URP Guidelines

Exhibit 4.B.XXI – URP Charter

Exhibit 4.B.XXII – URP Recent Awards List (2007-08, 2006-07, 2005-06)

Exhibit 4.B.XXIII – List of Research Proposals Submitted and Funded;
2004, 2005, 2006, 2007, 2008

Exhibit 4.B.XXIV – Board of Regents Policy on Research Centers and Programs

Exhibit 4.B.XXV – Research Centers Mission Statements

Other Exhibits Include:

- » Exhibit 4.B.XXVI – Research and Scholarly Activity Integrity Policy
- » Exhibit 4.B.XXVII – BOR Policy 401 – Research and Technology Transfer
- » Exhibit 4.B.XXVIII – BOR Policy 401.2 – Inventions and Patents
- » Exhibit 4.B.XXIX – Invention and Patent Policy
- » Exhibit 4.B.XXX – Invention and Patent Policy Disclosure Forms
- » Exhibit 4.B.XXXI – Student Patent Rights MOU
- » Exhibit 4.B.XXXII – Proposal Certification Form (PCF) and
- » Exhibit 4.B.XXXIII – PCF Form Instructions
- » Exhibit 4.B.XXXIV – Indirect Costs and Benefits
- » Exhibit 4.B.XXXV – IDC Policy
- » Exhibit 4.B.XXXVI – IDC Rate Agreement
- » Exhibit 4.B.XXXVII – PI Handbook and Inserts

Policy 4.1

Exhibit 4.A. XVI – Faculty Staff Handbook,

Section 206, Evaluation, Promotion, and Tenure – North Campus Faculty;

Section 207, Evaluation, Promotion, and Tenure –COT Faculty

*Section 208, Classification and Promotion - Montana Bureau of Mines and
Geology Professional Faculty and Staff*

Section 206.4, Evaluation of Part-Time Faculty

Appendix B – Tenure Progress Report (Dept Faculty)

Appendix C – Tenure Progress Report (Dept Head)

Exhibit 4.A.IX – MTFA-CBA, Article 14, Faculty Evaluation

Exhibit 4.A.X – VTEM-CBA, Article 7, Faculty Evaluation

Exhibit 4.A.XX – Faculty Promotion and Tenure Portfolio

Exhibit 4.A.XVII – Montana Tech Course Instruction Evaluation Form

LIST OF TABLES AND FIGURES

4.A

Table 4.A.I – Qualifications and Commitment of the Faculty

Table 4.A.II – Degrees of Tenure Track Instructional Faculty by Department

Table 1, *Institutional Faculty Profile*

Table 2, *Number and Source of Terminal Degrees of Faculty*

Table 4.A.III – Faculty Participation in Standing Committees

Table 4.A.IV – Comparison of Montana Tech Salaries with CUPA

Table 4.A.V – Salary Increases for Promotion and Academic Achievement

Table 4.A.VI – Faculty Retained from the Previous Fall

Figure 4.A.1 – Portfolio Flow Sheet

4.B

Figure 4.B.1 – Total Grant Awards Received FY2004-2008

Figure 4.B.2 – Research Expenditures FY2004-2008

Figure 4.B.3 – Grant Writing Activity for Fiscal Years 2004 to 2008

Figure 4.B.4 – Campus Involvement in Research

Figure 4.B.5 – Publishing Activity

STANDARD 5 - LIBRARY AND
INFORMATION TECHNOLOGY



STANDARD 5.A - PURPOSE AND SCOPE

The primary purpose of the library and information resources is to support teaching, learning, and, if applicable, research in ways consistent with, and supportive of, the institution's mission and goals. Adequate library and information resources and services, at the appropriate level for degrees offered, are available to support the intellectual, cultural, and technical development of students enrolled in courses and programs wherever located and however delivered.

5.A.1 The institution's information resources and services include sufficient holdings, equipment, and personnel in all of its libraries, instructional media and production centers, computer centers, networks, telecommunication facilities, and other repositories of information to accomplish the institution's mission and goals.

Montana Tech's Information Technology Department is a critical component of Information Resources. The Montana Tech Library and the Information Technology Department are two separate entities. Therefore, Standard 5 is addressed in two separate self studies: 1) Standard 5 – Library; and 2) Standard 5 – Information Technology. What follows is the Library section.

STANDARD 5.A.1 – LIBRARY

Mission and Goals

The Montana Tech Library on the North Campus has supported the institution's overall mission and goals for over a century. The library was established in 1900 when the original institution opened as the Montana State School of Mines. The First Annual Catalog (1900-1901) notes that the School of Mines was founded in response to the post Civil War growth of the mining industry which led to the "need of a special education in the sciences that stand related to the occurrence of ores, and their extraction and proper treatment."

Over the last century, the school grew and the curriculum diversified, and the library along with it. Currently, Tech's engineering programs continue to be the corner stone of the university, with more than half the student body enrolled in engineering and geosciences programs. These enrollments are followed by business and nursing. In addition, academic programs in the sciences, healthcare, and liberal studies have been established and continue to grow. Joe Janes, a nationally recognized librarian, noted in the December 2008 issue of *American Libraries* that "modern libraries have to be both somewhere and everywhere." Montana Tech Library is committed to providing a building (somewhere) which fosters learning and preserves its historical core print collections while enabling online access (everywhere) to scholarly resources and technologies that meet the needs of today's library users.

In addition to the North Campus faculty, students, and staff, the library supports researchers and staff at the Montana Bureau of Mines and Geology (MBMG). The Bureau is the principal source of earth science information for the entire State of

SELF-STUDY 2010

Montana; it is part of the university with offices on the North Campus and a field office in Billings, Montana. The library also serves students, faculty, and staff on the South Campus at the College of Technology (COT) where there is a small library within the Learning Center.

The library's primary goal is to provide resources, education, and services that support all academics at what is now called Montana Tech of The University of Montana. As declared in the Library Mission Statement, "Montana Tech Library is an integral part of Montana Tech, and its knowledgeable staff supports the university's mission by providing resources, education and services in a user-centered environment."

The library's mission is consistent with, and supportive of, the Montana Tech Mission "to meet the changing needs of society by supplying knowledge and education through a strong undergraduate curriculum augmented by research, graduate education and service."

The library provides services, resources, and education that are consistent with, and supportive of, the goals of the institution's Strategic Plan (see General Exhibit G.VII, [*Montana Tech Strategic Plan*](#)) including Goal 1 – "To Sustain and Enhance the Quality of All Academic Programs" and Goal 3 – "Enhance Research and Scholarly Activity. "

The library also supports institutional Goal 6 – "To Increase Enrollment" through its recruitment and retention efforts. The staff supports recruitment by welcoming potential students and their parents during campus library tours, by talking to them about specific library resources, and by providing them with informative handouts that describe library services for students. Librarians also play a unique retention role by providing students with positive, "outside-the-classroom" learning experiences and by establishing supportive one-on-one relationships that keep students engaged in their academic life and persisting in their studies. The Noel-Levitz Student Satisfaction Inventory indicates that their satisfaction with the helpfulness and approachability of library staff is significantly higher than the national average and has, moreover, increased steadily since 1997 (Figure 5.A.1-Lib).



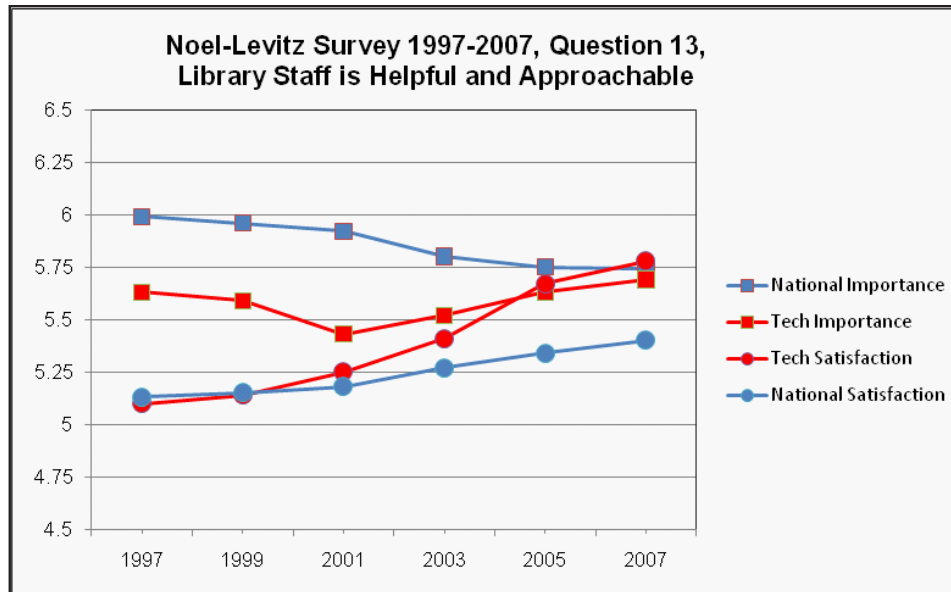


FIGURE 5.A.1-LIB, STUDENT SATISFACTION WITH LIBRARY STAFF

HOLDINGS

The library has sufficient print and electronic holdings to support students, faculty, and researchers. To maintain sufficient holdings, librarians are responsible for developing collections in assigned subject areas. They make informed purchase decisions by regularly examining professional literature and resource lists required for specific disciplines. They also consult with faculty and serve on campus curriculum committees to keep up to date on any evolving program proposals that might affect library purchases.

Collections are provided in various formats including electronic, print, microform, and both CD and DVD. Most collections are held at the North Campus library, the only exception being a very small print collection at the COT. Most importantly, both North Campus and South Campus students have full access to all collections.

Print Collections

The library print holdings include 55,000 books, more than 400 current journal titles, and more than 1900 non-current journal titles (Required Exhibit 5.A.I-Lib, *Title Count-Cataloged*). The library also subscribes to 12 print newspapers (Required Exhibit 5.A.II-Lib, *Print Newspaper Collection*). Print resources also include 56,000 Federal Government documents, 20,000 State documents, 29,000 foreign documents (Required Exhibit 5.A.III-Lib, *Government Documents*), and U.S. Patent and Trademark publications from 1872-2004. The library's online catalog provides access to information for the print collections.

Unique collection features include extensive resources in Geology and Mining, with some historical journal titles dating back to the 1800s. The library has a collection

SELF-STUDY 2010

of 67,000 maps (Required Exhibit 5.A.IV-Lib, [Map Holding Counts](#)) some of which also date to the 1800s. Montana Tech is the only library in the State that catalogs MBMG publications. Another distinctive feature of the library is its Special Collections Room of rare books related to Butte, the State of Montana, mining history, and other related topics.

Electronic Collections

The electronic collections include 32,800 online journals (Required Exhibit 5.A.V-Lib, [Electronic Journals](#)), 58,000 e-books (Required Exhibit 5.A.VI-Lib, [Electronic Books](#)), and 2700 newspapers and news sources online (Required Exhibit 5.A.VII-Lib, [Newsbank® Access World News](#)). These extensive resources are accessible anytime, anyplace to the North and South Campuses and to the MBMG. Access to the e-collections is provided through the library's 150 subscription databases (Required Exhibit 5.A.VIII-Lib, [Database Subscriptions by Name](#)). These databases provide full-text access to most journals. Any items not available in full-text or not owned by the library are provided through the electronic ordering system for interlibrary loan called ILLiad®. The library catalog contains records not only for print book holdings, but also for e-book titles. The e-journals subscription titles are indexed in the [Journal Name List](#) link on the library's homepage.

Other Collections

In addition to the print and electronic collections, the library holds 109,000 microforms, 3700 CDs, and a new, growing collection of more than 100 DVDs. There are also 20 different software programs loaded on designated library computers. These change each semester, depending on courses (Required Exhibit 5.A.IX-Lib, [Software Loaded on Thin Clients](#)).

For details about the core collections held in the North Campus Library, see section 5.A.2.

The South Campus COT Learning Center's print collection includes 1300 books and 24 journal titles. It has full access to all North Campus electronic collections, and the Learning Center also has numerous software programs loaded on its computers. These resources support the COT vocational and certificate programs in business technology, trades & technical, health, and information technology.

EQUIPMENT

Sufficient equipment is available in Tech's library to meet all student needs. Computer usage statistics indicate there are sufficient workstations because all of them have never been in use simultaneously (Required Exhibit 5.A.X-Lib, [Average Total PC and Thin Client Use](#)). Computing equipment includes 15 PC workstations and 19 networked Thin Clients. (Thin Clients are computers without hard drives which operate on client-server architecture with a central server performing processing activities.) The combined 34 computers and Thin Clients provide unrestricted internet access, with

wireless access also available throughout the library.

To ensure that the library computers are regularly upgraded, a reference librarian serves on the Computer and Telecommunications Committee. Thus, all students benefit by having access to high quality technology in the library.

Another unique feature of Tech's library is that the first floor is designated for group study. The Information Commons (IC) is an open area where teaching, research, discourse, and collaborative learning are encouraged and fostered. The IC is comprised of the Thin Client Lab which is equipped with an overhead projector and dropdown screen. The IC also contains three printers, a copier, and a student scanner connected to a computer loaded with both PhotoShop® and Acrobat Professional®. It also includes a work area with miscellaneous office equipment (e.g. paper cutter, three-hole-punch, etc.) for student use. By design, it is adjacent to the Information Desk where librarians and library staff are immediately available to provide personal service.

CLOSING THE LOOP

In Fall 2007, the PCs in the Information Commons needed to be replaced. Rather than invest in new PCs, the Manager of Network Services and the Library Computer Support Specialist collaborated and installed a test lab with Thin Clients to determine whether or not this type of computing would lower the costs of long-term hardware maintenance and software support. A library student satisfaction survey (Required Exhibit 5.A.XI-Lib, *Library Student Satisfaction Survey 2008*) conducted later in the term identified students' concerns with the lab. Analysis of these survey results led to a careful study of the lab by the Library Computer Support Specialist and the Network Services Manager. Problems were identified and corrected.

The Thin Client Lab continues to provide learning experiences as new technologies are introduced. For example, in Fall 2009, testing was conducted in the lab on software called Wimba®, to give students audio access to recorded BlackBoard® lectures. It was discovered that Wimba® is not supported in the Thin Client environment by the vendor, so the library and IT staff continue to work on creating a solution. Meanwhile, audio access is available on the library's PCs.

Also a PC Computer Lab is located along the West wall of the first floor and computer workstations along the middle section. Because the floor is designated for group work, there are open areas with 22 study tables (many newly refinished) and a recently remodeled area near the windows where students frequently use their laptops. There are also 18 upholstered chairs, five couches, and four study carrels.

SELF-STUDY 2010

The second floor is the designated quiet floor with five study rooms that can be reserved for group study. Each one is equipped with a white board, study tables, and wireless access. Also, a portable TV/DVD player is available for use in the study rooms. The second floor provides areas for solitary study with 16 study tables, 27 study carrels, and ten upholstered chairs and six couches. It is also equipped with two computer workstations and a printer.

The library has never turned students away for lack of seating or study carrels, but every day during finals week, students compete for study room space. The library would greatly benefit by expanding this area. To close that loop, the library will work with the Vice-chancellor of Academic Affairs and the Space Planning Committee to have a vacated room on the second floor of the library designated as a multi-use/study room.

Equipment at the COT Learning Center includes 20 networked computers, three printers, and one scanner. Wireless access is also provided. For students with disabilities, there is one laptop, two voice-activated recorders, a reader for the visually impaired, and two microphone systems for the hearing impaired. The COT Learning Center also has a disability station to accommodate students in wheel chairs. For specific COT Learning Center software see Required Exhibit 5.A.XII.Lib, COT Learning Center Software.

PERSONNEL

The library has sufficient personnel to meet the institution's mission and goals. A comparison of the student to library staff ratios with six peer institutions shows that Montana Tech ranks fourth (Table 5.A.I-Lib).

TABLE 5.A.I-LIB: PEER COMPARISON STUDENT TO LIBRARY STAFF RATIO

PEER INSTITUTION COMPARISON			
ACADEMIC LIBRARY	FTE*	STAFF**	RATIO
New Mexico Institute of Min & Tech	1451	11.00	132:1
South Dakota School of Mines & Tech	1738	10.00	174:1
Colorado School of Mines	4009	22.00	182:1
Montana Tech of UM	1666	8.11	205:1
Michigan Tech. University	6209	24.00	259:1
New Jersey Institute of Technology	6759	25.00	270:1
Missouri University of Science and Tech	5484	20.00	274:1

*Calculated by using latest available IPEDs FTE 2007 – Fulltime Students + (1/3) Part-time Students

**Calculated by using Library Staff Head Count

This standing indicates that library staff numbers are average, and they could be improved. Using the current Montana Tech FTE enrollment of 2438 and current library staff head count of 8.11 (same as in 2007), the ratio is even higher - 301:1. To improve this ratio, the library director continues to work with Montana Tech's administration to increase the hours of part-time library staff.

The library employs nine staff members (8.11 FTE) including a director, three reference librarians, one computer support specialist, two technicians in the Public Services Department, and two in technicians in the Technical Service Department. Together, the staff develops and carries out the library's strategic plan (Required Exhibit 5.A.XIII-Lib, *Montana Tech Library Strategic Plan 2009*) which supports the mission and goals of Montana Tech.

In addition to professional and classified staff, the library employs an average of eight student workers each semester and four during the summer. Student employees are assigned to work in specific library departments, but all are cross-trained to work at the front Information Desk as needed.

The Director of the COT Learning Center provides library services (.25 FTE) on the South Campus. Student employees are also available to assist students. A detailed description of the director's qualifications, competencies, and responsibilities is provided in Section 5.D.2.

5.A.2 The institution's core collection and related information resources are sufficient to support the curriculum.

Montana Tech Library faculty members have extensive knowledge about both print and electronic resources and are responsible for the collection as a whole. Overall, they ensure that the core collection is sufficient to support the curriculum by using standards for academic libraries that include professional guidelines and reviews and the library's policy on collection development. Tech faculty are consulted throughout the year and encouraged to recommend titles for purchase. As a member of the library committee, faculty act as liaisons to their departments and solicit department faculty to make purchasing requests to the library. Also part of the collection development process are title recommendations from both students and staff.

The library's Collection Development Policy (Required Exhibit 5.A.XIV-Lib, *Draft, Collection Development Policy*) is used to develop the core collection. The policy is currently under revision using standards developed by the Research Libraries Group and by Columbia University. The policy's new, extensive assessment criteria will ensure that the collection's scope, currency, and depth are sufficient to support the curriculum. For a detailed report on the policy, see Section 5.B.3.

Librarians also analyze discipline-specific core collection standards for accreditation or program approval in programs such as nursing and chemistry. They consult the nursing standards (Exhibit 5.A.XV-Lib, *Essential Nursing Resources*) produced for the Interagency Council on Information Resources in Nursing (ICIRN). Tech's nursing collections were assessed and approved by the National League for Nursing

SELF-STUDY 2010

Accreditation Commission in 2006. In collection development for chemistry, librarians consult standards developed by the American Chemical Society (Exhibit 5.A.XVI-Lib, *American Chemical Society Guidelines for Bachelor's Degree Programs*). The American Chemical Society reviewed the chemistry program including the library's chemistry collection, and the program was certified in 2007. In addition, the librarians also use the ABET standards (Exhibit 5.A.XVII-Lib, *Criteria for Accrediting Engineering Programs*) to develop the engineering collection. ABET assessed and approved all engineering collections in 2004, and will visit campus again in Fall 2010.

Decisions on acquisition of new and forthcoming publications and electronic resources are driven both by the curriculum and by the research needs of the greater university community. Librarians keep current on new and forthcoming publications through book reviews in professional journals such as *Choice*, and they regularly consult database reviews by professionals in the field in *Library Journal* (Required Exhibit 5.A.XVIII-Lib, *Database Subscriptions Rated by Library Journal*).

Academic departments are allocated book budgets annually, and librarians make recommendations to faculty and encourage them to submit titles for purchase. Every effort is made to fill faculty requests. Through these campus-wide collaborations, the collection as a whole is strengthened and maintained.

BOOKS

Print Collections

The library's print book collection, arranged by Library of Congress Classification, includes 55,000 titles and 78,000 items (Required Exhibit 5.A.XIX-Lib, *Item Count-Cataloged*) related to the academic programs with extensive coverage in geology, engineering, and mining. The collection also contains works that support the curriculum in biology, business, chemistry, computer science, healthcare informatics, humanities and liberal arts, mathematics, metallurgy, nursing, occupational safety and health, and professional and technical communication.

In the last five years, areas of the collection with time-sensitive resources, such as nursing and computer science, have been assessed and updated. Prior to 2008, the collection as a whole had not been reviewed for decades. To meet this challenge, the library invested in collection analysis software, and in Summer 2008, ran an extensive analysis by using the WorldCat Collection Analysis[®] tool (Required Exhibit 5.A.XX-Lib, *Print Book Collection Analysis by Subject* and Required Exhibits 5.A.XXI-Lib, *Print Book Collection - Analysis by Discipline*).

This analysis indicated the number of volumes by academic program (Table 5.A.II-Lib).

TABLE 5.A.II-LIB: COLLECTION ANALYSIS

ACADEMIC PROGRAM	VOLUMES
Engineering and Technology	12,600
Earth Sciences	5,400
Business & Economics	5,600
Medicine/Health	4,400
Liberal Studies	16,000

CLOSING THE LOOP

The collection analysis revealed that the collection contained scores of titles from the 1970's and 80's. This led to the decision, in October 2008, to launch a major book assessment project. The deans, departmental faculty, and researchers from the Montana Bureau of Mines and Geology all participated in the project. They evaluated books in the call number ranges relevant to their disciplines using specific evaluation criteria. As of summer 2009, more than 2000 books were withdrawn from the collection; Liberal Studies remains the last section to be assessed (Exhibit 5.A.XXII-Lib, [*Book Assessment Project, Withdrawn Titles*](#)). Project completion is expected by the end of the Fall 2009 term. This extensive project generated a clear campus-wide understanding of not only the strengths and weaknesses of the collection, but also of the need to withdraw out-dated titles and fill in the gaps with current titles.

SELF-STUDY 2010

Electronic Books

As vendors continue to improve the functionality of electronic books (e-books), their use on campus continues to grow. Faculty show increasing interest in using e-books in the classroom, and they are starting to request specific e-book titles for purchase. For the first time as of Fall 2009, the number of e-books in the collection (58,000) has surpassed the number of print books (55,000). However, e-books are sold in packages similar to those for cable or satellite television. The buyers get more than they will ever use or care about. It is anticipated in librarianship that, just like e-journals, as e-books use expands, the content and quality of the packages will improve. Currently, these collections do fill the need in the library for academic titles that support important but non-core curriculum subjects, especially in the humanities and social sciences. The packages are beginning to contain more engineering and technology titles, particularly in electrical and construction engineering.

E-books are accessible through two subscription packages from the library's website: *Ebrary*[®] *Academic Complete*[®] (44,500 titles) and *NetLibrary*[®] (10,800 titles). In addition, more e-books are starting to appear in previously "journals-only" subscription databases (2,700 titles). All e-books have records in the library catalog, are accessible both on and off campus, and are linked on the library's website.

JOURNALS

Print Serials (Journals, Newspapers, etc.)

A dramatic shift from print to electronic journals took place in 2004-05. Faculty and librarians collaborated and identified which print titles to drop in order to fund e-journal purchases. The print journal collection now includes only 419 current journal subscriptions which are primarily in biology, engineering, geology, in geophysics, metallurgy, mining, and in nursing. There are also 1900 non-current print journal titles on the shelves. The library subscribes to 12 newspapers in print.

Electronic Serials (e-journals, e-newspapers)

As of Fall 2009, the library owns access to 32,800 e-journal titles accessible through its 125 subscription databases. The scope and content of the databases support all academic programs. Usage statistics in Table 5.A.III-Lib illustrate that the most frequently used subscription databases reflect the major academic programs at Montana Tech.

TABLE 5.A.III-LIB: MOST FREQUENTLY USED DATABASES

MOST FREQUENTLY USED SUBSCRIPTION DATABASES 2005-2009	
DATABASE	DISCIPLINE
Academic Search® Premier	Interdisciplinary
ScienceDirect®	Engineering/Science
WorldCat®	Books worldwide
InfoTrac®	Interdisciplinary
Engineering Village®	Engineering
JSTOR®	Liberal Studies
Business Source Premier®	Business
American Chemical Society	Chemistry
Springer®	Interdisciplinary
Netlibrary®	E-books, interdisciplinary
CINAHL®	Nursing
GeoRef®	Geology
CSA®	Biology

An essential part of the electronic collection includes software tools that assist users in locating and accessing online resources. The library uses Serials Solutions® software to create its electronic “Journal Name List,” which identifies and connects both to the library’s 32,800 e-journal titles and content and to the titles of 4300 scholarly, open-access (free) journals accessible through internet searching. The list is updated monthly.

In addition to e-journals, the library provides access to more than 2700 newspapers and news sources online that include extensive back-files to the New York Times (1850-2005) and to The Washington Post (1877-1992). In December 2009, access became available to digital microform for Barron’s, the Wall Street Journal, and for the Washington Post from 2008 forward.

Map Collection

The map collection includes more than 63,000 maps. Topographic maps from the U.S. Department of Interior and various types of maps from the Bureau of Land Management (BLM) are received regularly. There is also a collection of historic maps dating from the late 1800s. Only 8000 maps are cataloged, but all are accessible in flat file map cases and cabinets arranged by region, state, or map name. Although cataloging all the maps is a commendable endeavor, it is not a practical priority for the library (Required Exhibit 5.A.IV-Lib, [*Map Holding Counts*](#)).

Other Collections

Montana Bureau of Mines and Geology (MBMG) Publications

The library receives, catalogs and archives all MBMG publications. The collection includes 3600 items.

SELF-STUDY 2010

Superfund Information Resources

The library is a designated source for superfund publications and provides access to more than 260 official documents related to the cleanup and remediation of the largest Superfund site in the country - due to hazardous waste contamination from mining.

Selective Depository for the State of Montana

The library selects state documents related to environmental quality, health, and natural resources. The Montana Documents collection includes 2600 items. In addition, the library owns 17,400 geology related documents from other states.

Federal Depository Library Program (FDLP)

Since 1901, the Montana Tech Library has been a member of the FDLP. As a selective depository, the library receives 26% of all government publications each year, mostly in earth sciences and health. This collection was assessed in 2007, and scores of documents were donated to the full depository at the University of Montana Mansfield Library.

In keeping with its Collection Development Policy, the library retained its extensive and historic collection of government documents from the United States Geological Survey and the now defunct United States Bureau of Mines. Approximately 55,000 government documents are currently in these print collections. In addition, the library has approximately 73,000 U.S. Government Documents on microfiche.



Patent and Trademark Depository Library (PTDL)

In 1984, Montana Tech Library became the only PTDL in Montana. The library received print and microfilm copies of patents until 2001 and 1999 respectively, and print copies of trademarks until 2004. Currently, patents and trademarks are available online through the U. S. Patent and Trade Mark Office (USPTO) website and through its CD Rom-based computer system, CASSIS. CASSIS is available to users through a stand-alone computer in the library. In addition, a database for advanced patent searchers, PubWest, is available in the library which is unique to the entire Montana University System and to the State. Trademark searches may be conducted through the Trademark Electronic Search System (TESS) database online at the USPTO.

5.A.3 Information resources and services are determined by the nature of the institution's educational programs and the locations where programs are offered.

In addition to having sufficient collections which support the curriculum, library resources and services are based on the nature of the educational curriculum. Montana Tech librarians consistently match resources and services to educational programs by participating on committees, by communicating with faculty, and by building strong campus relationships.

The Library Director serves on the Curriculum Review Committee (CRC) to stay informed, anticipate change, and to make informed decisions on acquiring library resources to meet curricular needs. The CRC is responsible for reviewing and approving all curricular changes before bringing them to all faculty for approval. To change curriculum, faculty are required to complete the CRC Curriculum Change Request Form which contains the following library section: "I have consulted with (name of librarian subject specialist here), faculty member and librarian, and discussed the online and print resources needed to support this curriculum change, including existing resources and possible future acquisitions." The inclusion of the section on the form ensures discourse between teaching faculty and library faculty during the development of the curriculum, and fosters the use and integration of library resources into the learning process. It also helps build strong library collections determined by Tech's educational programs.

The Reference Librarians stay informed about the nature of educational programs by serving on the following campus committees: General Education Review, E-Learning, Instructional Improvement, Campus Computer and Telecommunications, Library, and Faculty Senate. As a result of these committee assignments, the librarians keep current about specific program needs as they emerge on campus.

CLOSING THE LOOP

The Reference Librarian who serves on the E-Learning Committee learned of the need to provide distance education students with online help in locating scholarly databases, books, and journals on specific topics. To meet that need, library guides were created that used LibGuides® software to develop an effective online tool that would enable students to quickly find relevant resources. Moreover, these guides were linked on the library's homepage (www.mtech.edu/library/courseguides) to provide 24/7, online access.

Librarians also stay informed about the nature of educational programs through professional relationships with the faculty in their assigned liaison areas (Required Exhibit 5.A.XXIII-Lib, Librarian Liaison Areas). They keep current on trends in higher education such as the paradigm shift from individual to group learning that led directly to the creation of the Information Commons (IC) to foster group study and learning.

Montana Tech librarians also collaborate with faculty to create and integrate formal undergraduate and graduate library instruction into the curriculum. They communicate early on with new faculty and provide services and resources relevant to their teaching and research needs. For example, in September 2009 they met with new writing and tutoring center faculty to discuss how the library can support the new campus

SELF-STUDY 2010

initiatives to improve student writing and research skills. Librarians also provide classes and training not only at the library, but also in numerous classrooms and labs on the North Campus and at the COT.

The educational programs are also supported with software on library computers. The library's Computer Support Specialist routinely works with Information Technology (IT) staff, faculty, and academic departments to update the course-related software loaded on library machines. These upgrades keep the library's resources relevant to the educational programs.

5.B – INFORMATION RESOURCES AND SERVICES

Information resources and services are sufficient in quality, depth, diversity, and currency to support the institution's curricular offerings.

5.B.1 Equipment and materials are selected, acquired, organized, and maintained to support the educational program.

Materials

The library uses several methods in the selection, acquisition, organization, and maintenance of print and electronic collections that support educational programs. Print books and journals are selected collaboratively by Montana Tech librarians and faculty. Staff and students are also welcome to make suggestions; however, librarians make the final decision on any acquisitions.

Each Fall, the deans are notified of their book budgets (part of the library's capital budget). In turn, they allocate funds to each department. Faculty then submit title requests to their respective deans or department heads for review; and, if approved, these requests are submitted to the acquisitions librarian for purchase. If departments run out of funds, faculty are encouraged to submit all requests to the acquisitions librarian who consults reference librarians about using "general library" funds to fill requests.

Books are arranged by the Library of Congress Classification System, and titles are found by using the online catalog. Circulating books are located on the second floor, and reference books are on the first floor. Faculty assessed the book collection by using evaluation criteria from the revised draft of the Collection Development Policy.

Print Journals, both current and non-current, are shelved alphabetically on the first floor. Many non-current titles are retained because of their historical value, especially those related to mining. Some current titles are retained because of agreements with vendors who allow online access only if print subscriptions are continued. For example, the SpringerLink® database, which is purchased through the ESIG consortium, requires print retention and provides online access at substantial savings to the library. This practice is becoming less common as illustrated by the American Chemical Society's

recent decision to make most of its publications available only online. Accordingly, the library is planning a major assessment of its print journals in the Summer of 2010.

Selection and acquisition of online databases containing e-books and e-journals is determined by whether the library makes direct purchases from vendors or whether it partners with other libraries for purchasing. For direct buying, selection is done by Montana Tech librarians and is based on criteria outlined in the draft of the collection development policy. Montana Tech partners with the Montana State Library Cooperative (a state-wide group, which includes university library representatives), for purchase of databases relevant to Tech's educational programs.

For joint purchases with the University of Montana, selection decisions are made primarily by UM Mansfield librarians with limited input from Montana Tech. For the most part, this process works well and enables the Tech library to access numerous relevant databases. Because the UM curricula are less focused on science and engineering than Montana Tech, these database purchasing decisions favor humanities and social sciences.

E-books are available through subscriptions to NetLibrary® and ebrary® and are added to the library catalog by Mansfield library staff. These databases are accessible through links on the Montana Tech Library website. Database usage statistics are used to evaluate relevance and merit.

Organization of e-journals is accomplished through the [*Journal Name List*](#) described in section 5.A.2. This list is linked on the library website and can be searched in several ways, including keyword or title. It is maintained by Tech reference librarians, and regular updates to the list reflect the content changes due to changes in publisher's contracts with vendors. Updates are also made when the library adds new databases. In addition to e-subscriptions, the Journal Name List also provides access to selected, scholarly, and freely available open-access e-journals from Stanford's HighWire® Press and the Directory of Open Access Journals.

Maps are received regularly from federal and state agencies. They are shelved on the second floor in flat files or four-drawer file cabinets. They are arranged by type, size, or name as appropriate. Of the 63,000 maps in the collection, only 8000 are currently cataloged. A map index is available to guide users to maps which are not yet cataloged.

Equipment

Because technological equipment is a critical component of library operations, it is included in the operations budget. The library works closely with Montana Tech's Network Services and the University of Montana's (UM) Mansfield Library Systems department to provide servers that access both the library catalog and the databases. The catalog is shared with eight other libraries in Montana and is maintained by the UM Mansfield Library Systems Department. The catalog runs on Endeavor's Voyager software, and Montana Tech pays for its share of the cost. The UM service on the system is reliable, although there are sometimes delays in obtaining system reports and usage statistics.

SELF-STUDY 2010

Two staff computers in the Public Services Department are dedicated to the interlibrary loan system called ILLiad®. The system's server is located in and maintained by the UM Mansfield Library. Although the Tech Library pays UMM \$1200 annually for ILLiad® service and support, the quality of support has been mixed and depends on the skills of UMM ILLiad® personnel. For example, when software problems arise, working with under-trained personnel causes unnecessary delays in providing resources to Montana Tech library users.

5.B.2 Library and information resources and services contribute to developing the ability of students, faculty, and staff to use the resources independently and effectively.

Montana Tech librarians contribute to independent and effective use of library resources and services through classes, individual and group instruction sessions, through seminars, training, outreach and through orientation presentations. The website also provides information which enhances the effective and independent use of resources.

Librarians and Chemistry Department faculty co-teach a two-credit, 300 level chemistry literature course which meets weekly in the library. It provides students with guided, hands-on experience in finding scientific and technical information and has produced excellent results.

Librarians also develop information competency skills through library instruction sessions which are tailored to specific classes and which usually last 50 minutes. These sessions are offered to undergraduates in writing, speech, nursing, occupational safety and health, and in other classes as needed. Currently, librarians are assessing library instruction as a whole and are developing a comprehensive information competency plan to more effectively develop the abilities of undergraduates and graduate students (Exhibit 5.B.I-Lib, *Draft, Information Competency Plan*).

As part of the competency plan, librarians are currently addressing NWCCU Standard 2.A.8, "Faculty, in partnership with library and information resources personnel, ensure that the use of library and information resources is integrated into the learning process." Thus, librarians are in the beginning stages of collaboration with the new Director of Writing from the Professional and Technical Communication Department, the new Director of the Learning Center, and with other key teaching faculty. The goal is to effectively integrate information literacy into the curriculum. They are also working through the General Ed Review Committee to generate innovative ways of making information literacy a required part of Montana Tech's overall curriculum.

Every day in the library, librarians provide one-on-one training. They introduce students to services such as interlibrary loan and train them how to find, access, and assess information for research papers. They provide in-depth consultations to graduate students and introduce them to advanced materials and resources related to thesis research. In outreach efforts, librarians also meet with faculty in their offices to help

them develop skills in searching and information retrieval.

Moreover, to aid in independent access, librarians provide links to indexes and databases through the library's homepage portal. They use LibGuides® software to create interactive finding aids for both students and faculty that aggregate numerous subject-specific resources in one place.

The website server is maintained by Network Services which is housed in an adjacent building. Montana Tech's Network Services links to the internet through the University of Montana-Missoula and has consistently provided reliable and uninterrupted service. In August of 2008, Tech's Network Services completed a major renovation and equipment upgrade in the Data Center to maintain continuing service as system demands increase.



5.B.3 Policies, regulations, and procedures for systematic development and management of information resources, in all formats, are documented, updated, and made available to the institution's constituents.

The Collection Development Policy is the principal document used for developing and managing all library resources. Currently under revision, it will contain specific procedures and criteria which govern acquisitions, withdrawals, scope, content, authority, and currency. For the draft of the revised policy, see Required Exhibit 5.A.XIV-Lib, *Draft, Collection Development Policy*.

The Public Services and Technical Services departments have current, comprehensive Policies and Procedures manuals to manage information resources in their departments. These include polices for lending and borrowing and for cataloging and shelving (Required Exhibit 5.B.II-Lib, *Public Services Policies and Procedures Manual* and Required Exhibit 5.B.III-Lib, *Technical Services Policies and Procedures Manual*).

5.B.4 Opportunities are provided for faculty, staff, and students to participate in the planning and development of the library and information resources and services.

Both faculty and students participate in library planning and development through membership on the Library Committee. This committee is comprised of 25 faculty (two from the COT), two student senators, and a representative from the Montana Bureau of Mines and Geology. They serve as direct advisors to the Library Director. Committee members are charged with informing their constituents about library resources and services. Faculty also help with library development by making regular requests for book purchases and intermittent suggestions for journal or database purchases. As mentioned in 5.A.3, the Curriculum Review Committee requires all faculty to submit library resources for both course content changes and for new courses.

SELF-STUDY 2010

5.B.5 Computing and communications services are used to extend the boundaries in obtaining information and data from other sources, including regional, national, and international networks.

Montana Tech Library staffers are quick to recognize the opportunities afforded by online access to library resources. Wherever possible, they take advantage of opportunities to make the library's resources available through websites at the local, regional, national, and international levels. Almost all of the library's electronic resources are available through the web with IP authentication and user authorization through a proxy server. Librarians monitor the constantly emerging opportunities to make the library's collections available on the open web.

The library extends its boundaries through participation in [*Open WorldCat*](#)[®], a project that makes the library's holdings more visible to Web users and that increases awareness of the library as a primary source of reliable information across the internet. Also, librarians provide a simple way for both students and faculty to search scholarly literature on the internet through [*Google Scholar*](#)[™] and [*Pubget*](#), which is a search engine for the life-sciences. Moreover, the library's boundaries will expand even further with the digitization of Montana Tech's Masters theses collection which is scheduled to begin in Fall 2009 as the result of a \$35,000 allocation from the university's Executive Budget Committee. The library staff is also developing an online collection of the university's yearbooks by using ContentDM[®] software.

Network Service staff efficiently supports all efforts to extend access beyond the library by providing quick and reliable computing and telecommunication services. The library depends on these fast and reliable connections not only to provide online access but also to obtain and disseminate interlibrary loan requests.

STANDARD 5.C – FACILITIES AND ACCESS

The institution provides adequate facilities for library and information resources, equipment, and personnel. These resources, including collections, are readily available for use by the institution's students, faculty, and staff on the primary campus and where required off-campus.

5.C.1 Facilities

The university's main information repository is the North Campus library which was built in 1978. The two-story, 33,600 sf structure has since undergone upgrades, primarily in wiring for computers.

Moreover, the library administration long-recognized the need to improve the library's pre-computer age infrastructure and in 2005 received \$20,000 from Montana Tech's administration to develop an extensive renovation and expansion plan for the North Campus library building.

The original plan called for expansion and renovation of the library, addition of parking spaces, and improvements to the street and sidewalk connecting the library to the rest of campus. The cost was almost \$9M (Required Exhibit 5.C.I-Lib, [Long Range Building Plan](#)). However, over time, the plan was modified to include only renovation of the library interior for \$3M, and that modified plan is now a permanent part of the Montana University System Long Range Building Plan.

Meanwhile, Tech's library administration continues to advocate for the library renovation project simply because the growing demand for technology increasingly puts more strain on the infrastructure. In addition, building use continues to grow each year (Required Exhibit 5.C.II-Lib, [Gate Count](#)) as does demand for study room space. Somewhere along the line, a commitment must also be made to work on the deferred maintenance which puts the building at risk for further deterioration. In the interim, the library continues to make whatever facility upgrades it can, such as the 2008 Information Commons and open student areas already mentioned in Section 5.A.1.

In the last two years, improvements have also been made to the COT Learning Center. It has been renovated with new paint, carpet, and blinds.

Access

Either librarians or Library Technicians are available during all open hours to help users access all library resources and services. During the regular semesters, the library is open seven days, 79.5 hours per week; and during final exams, hours are extended for two weeks. The library offers printing and wireless access. Interlibrary loan is free to undergraduates for resources not owned by the library. Items are ordered electronically via the ILLiad® system.

Reference service is available 24/7 through the "Ask-a-Librarian" service link on the library homepage. Off-campus access to subscription databases is available 24/7 to all students, faculty, and staff through the library website simply by using campus I.D. numbers. Library access is also provided through the BlackBoard® course management system.

Complete library services are also provided for researchers, faculty, and staff of the Montana Bureau of Mines and Geology -- both on the North Campus and at its field office in Billings. In addition, Alumni and off-campus users have access to print and online resources in the library building and to interlibrary loan at cost.

The COT Learning Center is open 8-4:30 M-F during the Fall and Spring semesters. Summer hours are 8-4:00 M-F. With handicapped access, the center and its library services include basic reference assistance, interlibrary loan, and circulation. The student computers provide the same access to online collections as does the North Campus library.

SELF-STUDY 2010

5.C.2 In cases of cooperative arrangements with other library and information resources, formal documented agreements are established. These cooperative relationships and externally provided information sources complement rather than substitute for the institution's own adequate and accessible core collection and services.

The library has twelve written agreements with state, regional, and national institutions. The library's formal, shared-purchasing agreement with the Montana State Library Cooperative significantly reduces database costs. The library is a member of BCR, a library cooperative which also provides reduced rates for resources. As a member of the ESIG Library Cooperative, the library has formal agreements with the database vendor, Springer-Science. In addition, there is a formal Memorandum of Understanding between the library and the U.S. Patent and Trademark Depository Library Program. (Required Exhibit 5.C.III-Lib, *Formal Written Agreements*).

Although the Montana Tech library has no formal acquisitions agreement with the UM Mansfield library, potential database purchases are sometimes discussed among the affiliate campuses. However, the final purchasing decision rests with UM Mansfield Library staff. Whenever possible, Mansfield librarians negotiate to include the affiliate campuses in licensing contracts. While Montana Tech is not obligated to purchase databases, sometimes there is pressure to participate. For example, occasionally a resource comes up for purchase that is beyond the library's budget and/or irrelevant to Tech's academic programs. Never the less, Montana Tech is sometimes strongly encouraged to share in the cost.

Shared access often requires additional funding, and communication is established with all campus libraries to arrive at a fair cost share if possible. Current costs of shared database purchases reflect historical agreements and take into account inflationary increases and changes in vendors. For shared purchasing data 2005-2009, see Exhibit 5.C.IV-Lib, *Cooperative Database Purchases*.

STANDARD 5.D – PERSONNEL AND MANAGEMENT

Personnel are adequate in number and in areas of expertise to provide services in the development and use of library and information services.

5.D.1 The institution employs a sufficient number of library and information resources staff to provide assistance to users of the library and to students at other learning resources sites.

See Section 5.A.1 for a detailed description of sufficiency of library personnel and Table 5.A.1 for peer institution comparison.

5.D.2 Library and information resources staff include qualified professional and technical support staff, with required specific competencies, whose responsibilities are clearly defined.

The library has qualified staff with required competencies and clearly defined responsibilities. Professional staff includes a director, two full-time reference librarians, a part-time reference librarian, and five classified personnel.

Information Desk

Library staffers are assigned specific hours at the Information Desk, the single point-of-service for users. Cross-training in basic reference or circulation procedures is required for all Information Desk staff. Frequent referrals between reference librarians and Public Services staff are the norm and ensure that user needs are met.

The librarian's primary responsibility while working at the Information Desk is to answer reference questions. Public Services personnel principally assist users with interlibrary loans, course reserves, and circulation of materials. Student employees provide basic circulation services.

Professional Staff

The Library Director has a Master of Library and Information Science degree (MLIS) and is a tenured associate professor with 13 years of academic library experience; she is responsible for all aspects of library administration including long-range planning, budget, personnel, facilities management and library promotion.

The two full-time Reference Librarians have MLIS degrees and are tenure-track assistant professors. One has applied for tenure this year; and together they have ten years of academic library experience. Overall, they provide a broad range of reference services that range from teaching freshmen how to access an online journal to consulting with faculty on in-depth research projects. Also, they collaborate with faculty on customized library instruction sessions. Every day, they deliver point-of-use instruction with hands on learning to individual students. Each Fall, librarians and chemistry faculty co-teach a 15-week course in Chemistry Literature. Throughout the year, librarians train both students and faculty to use new library resources such as RefWorks®, citation management software. In addition, they provide reference services to non-campus patrons, especially consultants and business people in engineering, mining, and in technology-related fields. Their duties also include giving library orientation sessions to new faculty and to freshmen and their parents. In addition, they must meet those research and service responsibilities which are required for tenure and promotion.

The part-time Librarian has a Master of Science in Education with certification as a Library Media Specialist and has worked in libraries for 13 years. She works 20 hours a week, mostly at the Information Desk answering reference questions.

For vitae of librarians, see Required Exhibit 5.D.I-Lib, Vitae.

SELF-STUDY 2010

Classified Staff

The library's Computer Support Specialist I has a Bachelor of Science in Information Technology and more than 22 years of academic library experience. She manages the Thin Client Lab and provides direct service to students when complex computer problems arise. The Computer Support Specialist I is also responsible for coordinating MetNet, a campus video conferencing lab located in a building adjacent to the main library.

The Public Services Department staff includes a Library Technician II with six years of academic library experience. She is responsible for interlibrary loan, circulation, and reserves. Also the department has a Library Technician I who holds a Master of Science in Computer Science and who has two years of library experience.

Included in the Technical Services Department is a Library Technician II with a Master of Science in Professional and Technical Communication. With ten years of academic library experience, she is responsible for cataloging all materials and also serves as editor for library reports and publications. The department also has a Library Technician I with more than nine years of academic library experience.



For detailed Role Descriptions of classified staff, see Required Exhibit 5.D.II-Lib, Role Description, Classified Staff.

COT

The director of the COT Learning Center devotes one quarter of her time to the small library there. She provides circulation and reference services, and teaches students how to access information from the library's website. She holds a Bachelor of Science in Microbiology and Master of Education in Curriculum and Instruction.

5.D.3 The institution provides opportunities for professional growth for library and information resources professional staff.

The library administration fully supports and funds faculty and staff attendance at conferences, seminars, workshops, webinars, webcasts, and at meetings which foster professional growth. Professional development provides the knowledge and skills necessary for the staff to stay current on the constant technological changes which are so much a part of today's academic library. Opportunities for growth encourage better performances, enhance careers, and raise morale. These growth opportunities are provided by professional organizations such as the American Library Association, the Pacific Northwest Library Association, and the Montana Library Association. For a detailed list of staff professional development opportunities see Exhibit 5.D.III-Lib, *Professional Development*.

5.D.4 Library and information resources and services are organized to support the accomplishment of institutional mission and goals. Organizational arrangements recognize the need for service linkage among complementary resource bases (e.g., libraries, computing facilities, instructional media and telecommunications centers).

The library has formal organizational arrangements with Network Services, the Library Committee, and with the COT Learning Center. These all enhance campus resources and services and maintain systematic linkages. As a result, Tech enjoys a strong, positive working relationship between the library staff and those Network Services personnel who support the library's computing infrastructure. Network Services staff do perform the initial set up of all library computers and provide back-up support for the library's software and hardware. When Network Services installed wireless in the library, they proactively collaborated with library staff to ensure good coverage. They continue to maintain the wireless service and also work closely with library staff to keep the Thin Client Lab running smoothly. When the Information Commons area was originally created, Network Services collaborated with the Library Computer Support Specialist and Library Faculty not only to design the layout, but also to select all the equipment and furniture for it. Moreover, this strong partnership carries over and is a crucial component in providing high quality online resources and services to Montana Tech students.

The Library Committee is another example of a critical service linkage. It is one of the university's important standing committees and is comprised of faculty from all academic departments and two student senators. This committee's primary mission is to promote the library resources and services to respective academic departments. The committee also advises the Library Director on formulating, revising, and upholding major library policies, including collection development.

The library also has an organizational arrangement with the COT Learning Center. The library's Technical Services Department is responsible for receiving, processing, and cataloging all new COT books and journals. After the new materials are "shelf-ready," they are then shipped to the South Campus COT. This service link eliminates costly duplication of materials processing. Finally, the COT Learning Center Director attends bi-weekly North Campus library staff meetings to maintain communication and a strong working relationship with the library.

5.D.5 The institution consults library and information resources staff in curriculum development.

The library is proactive in keeping informed on emerging curriculum development. The Library Director's membership on the Curriculum Review Committee as well as the committee's library requirement on the Curriculum Change Request Form (see Section 5.A.3) fosters consultation with library staff in curriculum development.

Librarians are proactive in keeping informed about other campus developments that may have an impact on the library. For example, in 2008, the university hired a Distance Education Coordinator, and the librarians are working with her to keep informed about

SELF-STUDY 2010

online curriculum development. Also, the General Education Review Committee has a new chair, and a librarian is now a member of that committee. Finally, the Instructional Improvement Committee includes a librarian who alerts the library staff on emerging curriculum plans that may affect the library.

5.D.6 The institution provides sufficient financial support for library and information resources and services, and for their maintenance and security.

Institutional support for the library has improved since 2001 when a short-fall in the university's budget cancelled all book budgets for that year. Since then, sound fiscal management by university administrators has resulted in some funding increases. As indicated in Figure 5.D.1-Lib, the Salaries Budget increased during the last three years – the 2005 drop was due to salary savings from a staff retirement. The Capital Budget increased slightly in the last three years – the 2005 drop was the result of a shift from print to electronic journal subscriptions. The Operations Budget also increased slightly in the last four years - the 2005 drop occurred when the maintenance payment for the Integrated Library System software was moved from the Library Budget to the Montana Tech Budget.

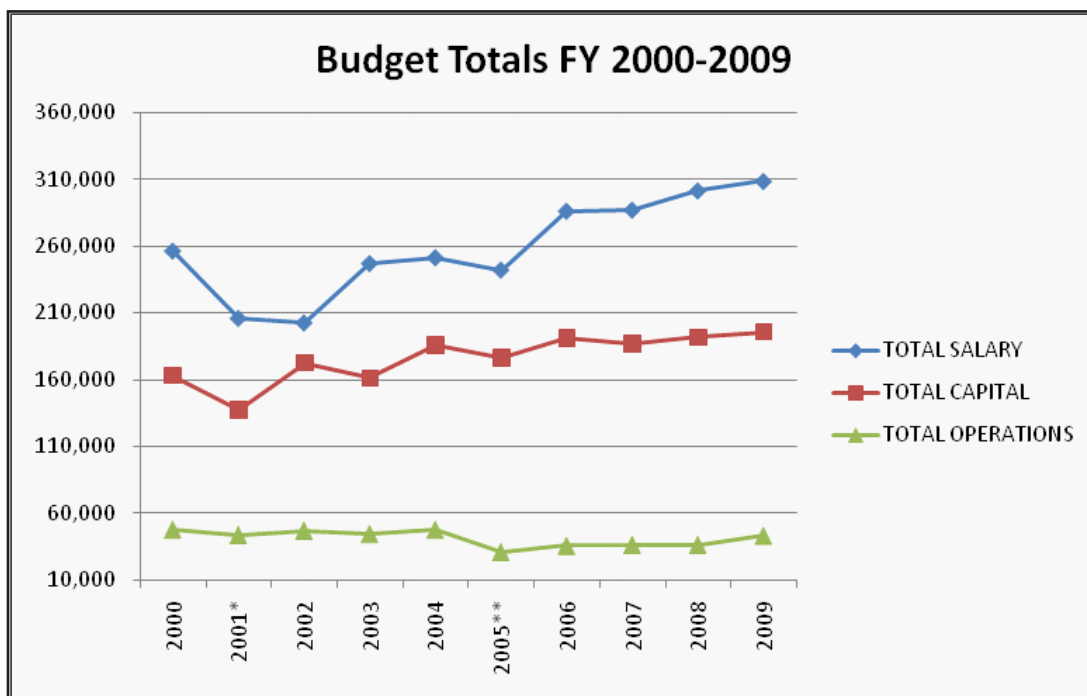


FIGURE 5.D.1-LIB, LIBRARY BUDGET TOTALS

Over the last five years, the administration also allocated \$20,000 to develop a long-range plan to expand and renovate the library. Part of the plan was \$11,000 for a new security gate and in 2008, \$52,700 was allocated to build the Library Information Commons. Included in the commons was the Thin Client Lab and a research and learning area for students. In Fall 2009, the Executive Budget Committee also allocated \$35,000 to begin a project to digitize Montana Tech Masters Theses.

The Research Office also supports the library by providing funds to purchase library resources. As research at the university continues to grow, the library resources necessary to support it also grow. To meet the increasing demand for research information, the library requested, and now receives a growing portion of the Facilities and Administration Budget (F&A) – formerly called Indirect Costs (IDCs). See Figure 5.D.2-Lib.

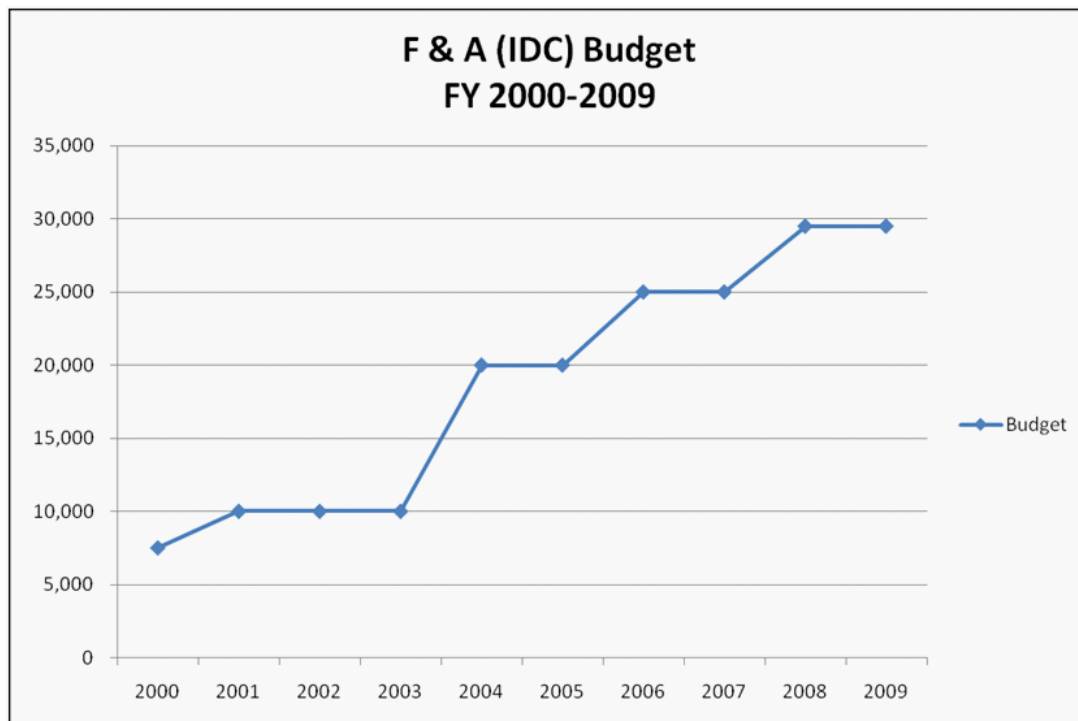


FIGURE 5.D.2-LIB, INCREASE IN LIBRARY F&A (IDC) FUNDING

SELF-STUDY 2010

Both the emergence of the internet and the shift from print to electronic format – especially in e-journals – had a profound impact on academic library funding. For example, to access and manage the library’s 32,800 electronic journal titles, software was purchased to produce the *Journal Name List* at an annual, rising cost of \$12,000 (FY 2010).

In order to meet the increasing demand for online journals and books and to provide the technology to support them, the library increased its electronic resources budget over the last six years. This was accomplished by cancelling print subscriptions and shifting to e-subscriptions and by allocating to e-purchases that part of the budget increases originally intended for inflation. Savings were also realized through shared-purchasing to e-subscriptions. In addition, the library works closely with the university’s Executive Budget Committee to dedicate the F&As for electronic resource purchasing. Here, the understanding is that if these funds decrease, so too shall library resources.

In addition to institutional financial support, the library also has a robust “Friends of the Library” group whose mission is to “enhance the resources of the library.” Reestablished in 2003, Friends have contributed more than \$10,000 to purchase white boards for study rooms, new carpet for the Information Commons, books to support the new Healthcare Informatics program, map cases, and a DVD display stand. They even funded reupholstering of arm chairs for student use and also contributed to the publication of a booklet (Required Exhibit 5.D.IV-Lib, *Montana Tech Library Expansion and Renovation*) to promote the library’s expansion and renovation project.

The COT Learning Center is autonomous and has a small budget (about \$3000) for books and journals. The Center has not received a budget increase in several years.

STANDARD 5.E – PLANNING AND EVALUATION

Library and information resources planning activities support teaching and learning functions by facilitating the research and scholarship of students and faculty. Related evaluation processes regularly assess the quality, accessibility, and use of libraries and other information resource repositories and their services to determine the level of effectiveness in support to the educational programs.

5.E.1 The institution has a planning process that involves users, library and information resource staff, faculty and administrators.

Strategic planning is an ongoing process to help the library set goals and priorities for the future and to provide a blueprint for reaching those goals. It also helps direct funding allocations. The library began formal strategic planning in 2003, and library staff, campus administrators, and students were included in the original process. The plan was updated in 2005 and 2008 with input from the library staff. For the complete Library Strategic Plan, see Required Exhibit 5.A.XIII-Lib, *Montana Tech Library Strategic Plan 2009*.

5.E.2 The institution, in its planning, recognizes the need for management and technical linkages among information resource bases (e.g., libraries, instructional computing, media production and distribution centers, and telecommunications networks).

Network Services is responsible for managing linkages among the library, instructional computing, and related information campus resource bases. The Library Computer Support Specialist works closely with Network Services to ensure good communication to meet user needs. For a detailed discussion of Network Service's role, see the IT portion of Standard 5, Section 5.E.3.

5.E.3 The institution regularly and systematically evaluates the quality, adequacy and utilization of its library and information resources and services, including those provided through cooperative agreements, and at all locations where courses, programs or degrees are offered. The institution uses the results of the evaluations to improve the effectiveness of these resources.

The library uses several methods to evaluate the quality, adequacy, and usage of library staff, resources, and services. These methods include university-required faculty and staff evaluations, surveys, usage statistics, and computerized collection analysis and assessment tools. Results of these assessments are analyzed and used to identify both strengths and weaknesses.

The Library Director reports directly to the Vice Chancellor of Academic Affairs and Research (VCAAR) for an annual evaluation according to the provisions in General Exhibit, G.IV, *Faculty and Staff Handbook*, Section 206.4, Performance Evaluation. The Director also provides library updates throughout the year to the VCAAR. Faculty Librarians report to the Library Director and are also evaluated annually according to provisions in the handbook. Classified staff report either to the Library Director or to their direct supervisor. They are evaluated annually using Montana University System Performance Reviews as required by the Human Resources Department.

Another evaluation tool used by the university is the Noel-Levitz Student Satisfaction Inventory. Questions #13 (see Figure 5.A.1) and #18 on the survey assess student satisfaction with the library staff, resources, and services. Over the last ten years, student satisfaction levels in all three areas increased steadily and are now above the national average (Required Exhibit 5.E.I-Lib, *Noel-Levitz Student Satisfaction Inventory, Questions #13 and #18*).

Faculty satisfaction with library staff, research resources, and support for student course work is indicated in the university's Faculty Senate Satisfaction Survey which was conducted in 2005 and in 2007. In both surveys, faculty satisfaction with the library staff averaged 97%, with research services 93%, and almost 70% with student course work support (Required Exhibit 5.E.II-Lib, *Faculty Senate Satisfaction Survey 2005,07*).

As noted in Section 5.A.2, an extensive analysis of the print book collection (Required Exhibit 5.A.XX-Lib, *Print Book Collection Analysis by Subject*; was conducted in 2008-09 using the WorldCat Collection Analysis® tool. Results of this analysis were used

SELF-STUDY 2010

to update the collection through a large scale weeding project. Purchasing decisions for electronic collections are based both on the expertise of the librarians and on reviews in the professional literature. Effectiveness is evaluated with usage statistics as shown in the following exhibits:

- » Required Exhibit 5.E.III-Lib, [Database Usage Statistics](#)
- » Required Exhibit 5.E.IV-Lib, [Database Hits by Year](#)
- » Required Exhibit 5.E.V-Lib, [Circulation Statistics](#)
- » Required Exhibit 5.E.VI-Lib, [Interlibrary Loan Statistics](#)
- » Required Exhibit 5.E.VII-Lib, [Reserve Statistics](#)

CLOSING THE LOOP

Strengths

The strengths of the library include the faculty and staff, collections, and services. Faculty librarians are passionate about academic librarianship and meet their numerous responsibilities in library instruction, collection development, in reference, research consultation, publication for tenure, and in service to the community with professionalism and a positive attitude. They are leaders who actively participate on committees and bring fresh ideas to the campus. The library classified staff is highly educated and has a very strong work ethic. They consistently “go the extra mile” to provide service to the campus. The library has a positive reputation on campus because of its dedicated staff.

Collections are also one of the library’s strengths. Students and researchers are enthusiastic about accessing the library’s 32,800 journals online anytime. Historical researchers, geologists, and prospectors rely on the depth of the library’s print collections for their research needs.

The campus community relies on the library’s interlibrary loan service. If the library does not own an item, the ILL staff will find and borrow it. The library is student-centered. Students appreciate being able to reserve a study room, borrow a protractor, or get help with software problems while in the library. They also savor the “food rule” which allows them to eat their lunch in the library.

CLOSING THE LOOP

Opportunities for Improvement

Areas for improvement include library instruction, faculty consultation with librarians in curriculum development, growing demand for e-books, and upgrades to the facility. Integrating library instruction into the curriculum presents a significant challenge to the library faculty. However, there is opportunity for change as new personnel are hired and as the Gen Ed committee begins assessing the Gen Ed curriculum. An impending challenge in collection development also exists in meeting the demand for more and more e-books. The library facility also needs improving, and as the scope of the renovation project is modified, the possibility of upgrades to the building also improves.

Moving Forward

Library faculty will continue to promote integration of library instruction into the curriculum. The Library Director will continue to advocate for faculty consultation with librarians on curriculum development. The Director will also stay informed on the implications of e-books and will develop strategies to meet that growing demand. The Director will keep in mind, that because of the high cost of scholarly resources, the library will be the primary means of access to resources, whether in electronic or print format. Finally, the Director will continue to collaborate with university administrators to raise funds for library renovations.

REFERENCED EXHIBITS

5.A.1

General Exhibit G.VII, *Montana Tech Strategic Plan*

Required Exhibit 5.A.I-Lib, *Title Count-Cataloged*

Required Exhibit 5.A.II-Lib, *Print Newspaper Collection*

Required Exhibit 5.A.III-Lib, *Government Documents*

Required Exhibit 5.A.IV-Lib, *Map Holding Counts*

Required Exhibit 5.A.V-Lib, *Electronic Journals*

Required Exhibit 5.A.VI-Lib, *Electronic Books*

Required Exhibit 5.A.VII-Lib, *Newsbank® Access World News*

Required Exhibit 5.A.VIII-Lib, *Database Subscriptions by Name*

Required Exhibit 5.A.IX-Lib, *Software Loaded on Thin Clients*

Required Exhibit 5.A.X-Lib, *Average Total PC and Thin Client Use*

Required Exhibit 5.A.XI-Lib, *Library Student Satisfaction Survey 2008*

Required Exhibit 5.A.XII-Lib, *COT Learning Center Software*

Required Exhibit 5.A.XIII-Lib, *Montana Tech Library Strategic Plan 2009*

5.A.2

Required Exhibit 5.A.XIV-Lib, Draft, Collection Development Policy

Exhibit 5.A.XV-Lib, *Essential Nursing Resources*

Exhibit 5.A.XVI-Lib, *American Chemical Society Guidelines for Bachelor's Degree Programs*

Exhibit 5.A.XVII-Lib, *Criteria for Accrediting Engineering Program*

Required Exhibit 5.A.XVIII-Lib, *Database Subscriptions Rated by Library Journal*

Required Exhibit 5.A.XIX-Lib, *Item Count-Cataloged*

Required Exhibit 5.A.XX-Lib, *Print Book Collection Analysis by Subject*

Required Exhibit 5.A.XXI-Lib, *Print Book Collection - Analysis by Discipline*

Exhibit 5.A.XXII-Lib, *Book Assessment Project, Withdrawn Titles*

Required Exhibit 5.A.IV-Lib, *Map Holding Counts*

5.A.3

Exhibit 5.A. XXIV-Lib, *Librarian Liaison Areas*

5.B.2

Exhibit 5.B.I-Lib, *Draft, Information Competency Plan*

5.B.3

Required Exhibit 5.A.XIV-Lib, Draft, Collection Development Policy

Required Exhibit 5.B.II-Lib, *Public Services Policies and Procedures Manual*

Required Exhibit 5.B.III-Lib, *Technical Services Policies and Procedures Manual*

5.C.1

Required Exhibit 5.C.I-Lib, *Long Range Building Plan*

Required Exhibit 5.C.II-Lib, *Gate Count*

5.C.2

Required Exhibit 5.C.III-Lib, *Formal Written Agreements*

Exhibit 5.C.IV-Lib, *Cooperative Database Purchases*

5.D.2

Required Exhibit 5.D.I-Lib, Vitae

Required Exhibit 5.D.II-Lib, Role Description, Classified Staff

5.D.3

Exhibit 5.D.III-Lib, *Professional Development*

5.D.6

Required Exhibit 5.D.IV-Lib, *Montana Tech Library Expansion and Renovation*

5.E.1

Required Exhibit 5.A.XIII-Lib, *Montana Tech Library Strategic Plan 2009*

5.E.3

General Exhibit G.IV, *Faculty and Staff Handbook*

Required Exhibit 5.E.I-Lib, *Noel-Levitz Student Satisfaction Inventory, Questions #13 and #18*

Required Exhibit 5.E.II-Lib, *Faculty Senate Satisfaction Survey 2005,07*

Required Exhibit 5.A.XX-Lib, *Print Book Collection Analysis by Subject*

Required Exhibit 5.E.III-Lib, *Database Usage Statistics*

Required Exhibit 5.E.IV-Lib, *Database Hits by Year*

Required Exhibit 5.E.V-Lib, *Circulation Statistics*

Required Exhibit 5.E.VI-Lib, *Interlibrary Loan Statistic*

Required Exhibit 5.E.VII-Lib, *Reserve Statistics*

SELF-STUDY 2010

LIST OF TABLES

TABLE 5.A.I-Lib, Peer Comparison Student to Library Staff Ratio

TABLE 5.A.II-Lib, Collection Analysis

TABLE 5.A.III-Lib, *Most Frequently Used Databases*

LIST OF FIGURES

Figure 5.A.1-Lib, Student Satisfaction with Library Staff

Figure 5.D.1-Lib, Library Budget Totals

Figure 5.D.2-Lib, Increase in Library F&A (IDC) Funding

SUPPORTING DOCUMENTATION FOR STANDARD FIVE - LIBRARY

Required Exhibits (NWCCU Accreditation Handbook, p. 71, 2003 ed.)

1. **Printed materials that describe for students the hours and services of learning resources facilities such as libraries, computer labs, and audio-visual facilities.**
 - a. *2009 Library Fact Sheet*
 - b. *Library Hours/Due Date Bookmark*
 - c. Screen Shot, North Campus Library Homepage
 - d. Screen Shot, College of Technology Learning Center Homepage
 - e. Screen Shot, Montana Bureau of Mines and Geology Homepage
 - f. Floor Plan, North Campus Library

2. **Policies, regulations, and procedures for the development and management of library and information resources, including collection development and weeding.**
 - a. 5.A.XIII-Lib, *Montana Tech Library Strategic Plan 2009*
 - b. 5.A.XIV-Lib, Draft, Collection Development Policy
 - c. 5.B.II-Lib, *Public Services Policies and Procedures Manual*
 - d. 5.B.III-Lib, *Technical Services Policies and Procedures Manual*

3. **Statistics on use of library and other learning resources.**
 - a. 5.C.II-Lib, Gate Count
 - b. 5.A.X-Lib, Average Total PC and Thin Client Use
 - c. 5.E.V-Lib, Circulation Statistics
 - d. 5.E.VI-Lib, Interlibrary Loan Statistics
 - e. 5.E.VII-Lib, Reserve Statistics

4. **Statistics on library collection and inventory of other learning resources.**
 - a. 5.A.XX-Lib, Print Book Collection Analysis by Subject
 - b. 5.A.I-Lib, Title Count-Cataloged
 - c. 5.A.XIX-Lib, Item Count-Cataloged
 - d. 5.A.VI-Lib, Electronic Books
 - e. 5.A.V-Lib, Electronic Journals
 - f. Database Subscription by Subject
 - i. 5.A.VIII-Lib, Database Subscriptions by Name
 - g. Software Loaded on Library Computers
 - i. 5.A.IX-Lib, Software Loaded on Thin Clients
 - ii. 5.A.XII-Lib, COT Learning Center Software
 - h. 5.A.II-Lib, Print Newspaper Collection
 - i. 5.A.VII-Lib, Newsbank® Access World News
 - i. 5.A.III-Lib, Government Documents
 - j. 5.A.IV-Lib, Map Holding Counts
 - k. Equipment Detail: equipment available for student use
 - l. Summary: furniture/equipment available for student use
 - i. Furniture: tables, chairs, workstations location inventory

5. **Assessment measures utilized to determine the adequacy of facilities for the goals of the library and information resources and services.**
 - a. 5.C.I-Lib, Long Range Building Plan
 - b. 5.D.IV-Lib, Montana Tech Library Expansion and Renovation

SELF-STUDY 2010

6. **Assessment measures to determine the adequacy of holdings, information resources and services to support the educational programs both on and off campus.**
 - a. 5.A.XX-Lib, *Print Book Collection Analysis by Subject*
 - i. 5.A.XXI-Lib, *Print Book Collection - Analysis by Discipline*
 - b. 5.A.XVIII-Lib, *Database Subscriptions Rated by Library Journal*
 - c. 5.E.III-Lib, *Database Usage Statistics*
 - i. 5.E.IV-Lib, *Database Hits by Year*
 - ii. *Database Usage, Alphabetic Sort*
 - d. *Headcount Enrollment by Degree, Fall 2009*
 - i. *Enrollment Comparisons, Fall 2009*
 - e. 5.E.I-Lib, *Noel-Levitz Student Satisfaction Inventory, Questions #13 and #18*
 - f. *Noel-Levitz SSI, 1997-2007, Institutional Summary*
 - g. 5.E.II- Lib, *Faculty Senate Satisfaction Survey 2005,07*
 - h. *Library Satisfaction Survey 2008 Faculty/Staff*
 - i. 5.A.XI-Lib, *Library Student Satisfaction Survey 2008*
 - j. *Bibliographic Instruction, Students and Sessions*
7. **Data regarding number and assignments of library staff.**
 - a. 5.D.II-Lib, Role Description, Classified Staff
 - b. *Library FTE, Professional, Classified and Student Staff, FY 1999-2009*
8. **Chart showing the organizational arrangements for managing libraries and other informational resources (e.g. computing facilities, instructional media, and telecommunication centers).**
 - a. *Organization Chart, Vice Chancellor Academic Affairs & Research*
 - b. *Organization Chart, Montana Tech Library*
9. **Comprehensive budget(s) for library and information resources.**
 - a. *Budget Summaries, Comparison of Salary, Operations and Capital, FY 2000-2009, Actual Expenditures*
 - b. *Salaries, FY 2000- 2009*
 - i. *Library FTE, Professional, Classified and Student Staff, FY 1999-2009*
 - c. *Operations Budgets, FY 2000-2009, Actual*
 - d. *Capital Budget Comparisons, FY 2000-2009, Actual Expenditures*

- e. F and A (ICD) Budget, FY 2000-2009
- f. Cooperative Database Purchases, FY 2005-2010
- g. Library Budgets (detail) FY 2000-2009

10. Vitae of professional library staff.

- a. 5.D.I-Lib, Vitae
- b. 5.A.XXIII-Lib, Librarian Liaison Areas

11. Formal, written agreements with other libraries.

- a. 5.C.III-Lib, Formal Written Agreements

12. Computer usage statistics related to the retrieval of library resources.

- a. 5.E.IV-Lib, Database Hits by Year
 - i. 5.E.III-Lib, Database Usage Statistics
 - ii. Database Usage, Alphabetic Sort
 - iii. Database Usage by Month
- b. TABLE 5.A.III-Lib, Most Frequently Used Databases
- c. 5.E.VII-Lib, Reserve Statistics
- d. 5.E.V-Lib, Circulation Statistics
- e. 5.E.VI-Lib, Interlibrary Loan Statistics
- f. 5.A.X-Lib, Average Total PC & Thin Client Usage
 - i. Thin Client Usage
 - ii. CPU Computer Usage

13. Printed information describing user services provided by computing facility

Documentation for this section is provided in Part Two of Standard 5 – Information Technology

14. Studies or documents describing the evaluation of library and information resources.

- a. Book Collection Assessment Project 2008-09, Summary Report
 - i. Process for Withdrawing Old Books
 - ii. Library Committee Members
 - iii. Color-coded Assessment Criteria
 - iv. Collection Depth Indicator Definitions

SELF-STUDY 2010

EXHIBITS

A.

5.A.XV-Lib, *Essential Nursing Resources*

5.A.XVI-Lib, *American Chemical Society Guidelines for Bachelor's Degree Programs*

5.A.XVII-Lib, *Criteria for Accrediting Engineering Program*

5.A.XXII-Lib, *Book Assessment Project, Withdrawn Titles*

B.

5.B.I-Lib, *Draft, Information Competency Plan*

C.

5.C.IV-Lib, *Cooperative Database Purchases*

D.

5.D.III-Lib, *Professional Development*

GENERAL EXHIBITS

General Exhibit G.VII, *Montana Tech Strategic Plan*

General Exhibit G.IV, *Faculty and Staff Handbook*



S **STANDARD 5 - LIBRARY AND INFORMATION
TECHNOLOGY - INFORMATION TECHNOLOGY**



SELF-STUDY 2010

STANDARD 5.A - PURPOSE AND SCOPE

The primary purpose of the library and information resources is to support teaching, learning, and, if applicable, research in ways consistent with, and supportive of, the institution's mission and goals. Adequate library and information resources and services, at the appropriate level for degrees offered, are available to support the intellectual, cultural, and technical development of students enrolled in courses and programs wherever located and however delivered.

5.A.1 The institution's information resources and services include sufficient holdings, equipment, and personnel in all of its libraries, instructional media and production centers, computer centers, networks, telecommunication facilities, and other repositories of information to accomplish the institution's mission and goals.

Montana Tech's Information Technology Department is a critical component of Information Resources. The Montana Tech Library and the Information Technology Department are two separate entities. Therefore, Standard 5 is addressed in two separate self studies: 1) Standard 5 – Library; and 2) Standard 5 – Information Technology. What follows is the Information Technology section.

STANDARD 5.A.1 – INFORMATION TECHNOLOGY

Montana Tech provides a multitude of campus computing resources in support of the campus mission, which is to meet the changing needs of society by supplying knowledge and education through a strong undergraduate curriculum augmented by research, graduate education, and service. The base campus desktop runs a Microsoft Operating System. This homogeneity is purposeful to afford campus faculty and students seamless use of campus desktops and the software that they contain. In addition to this base platform, specialty campus resources are available which include a new production Mac lab and Linux facilities. Additionally, many campus departments run specialized hardware and software resources for the certification needs of their respective areas. Details can be found by referring to Required Exhibit 5.A.I – IT, [Campus Computer Lab Inventory](#).

Campus desktop computing is composed of more than 1000 desktops and is supported by 55 physical servers and 52 virtual servers which supply the following campus services: Active Directory and Radius Authentication, Printing, File, Email, On-Line Course Management (Blackboard), Campus Portal (MyMtech), Campus Web Site (www.mtech.edu), Thin Clients, Blackberry Enterprise Server, Student Records, Document Workflow (Nolij), DNS, WINS, and DHCP services.

All campus core computing services are environmentally, physically, and electrically protected to assure 24x7x365 availability in order to meet for the timely information needs of the entire Tech community. This delivery was made possible by renovating the data center in the summer of 2008. The core data center and cooling system is

backed with an automatic transfer switch coupled to a 125 KVA diesel powered backup generator.

Electrically, the data center is protected with a UPS system that protects electronic equipment from utility power blackouts, brownouts, sags and from surges. The UPS filters small utility line fluctuations and isolates electronic equipment from large disturbances by internally disconnecting from the utility line power. For a complete analysis of this system, see Required Exhibit 5.A.II – IT, [Montana Tech Data Center Upgrade](#).

Three service areas comprise Campus Technology Services (CTS) and are now in place: Network Services, Information Services, and Online Services (each with well-defined work paths). The Directors/Managers from these three areas make up the Campus Technology Council which advises the administration on technical issues, developments, and direction. Campus Technology Services has a staff of nine people to cover the core services and two well trained students to operate the Help Desk. Additionally, three Computer Support Specialists (Coordinators) provide desktop support. The dedication of the 12 IT members is reflected in the longevity of key members, with a collective total number of years of service to Montana Tech IT at 193 campus years and 288 years overall. See Table 5.A.I – IT, IT Experience in Years.

TABLE 5.A.I - IT, IT EXPERIENCE IN YEARS

IT EXPERIENCE IN YEARS			
STAFF	CTS	CAMPUS	OVERALL
3	Information Services	69	79
2	Online Services	41	54
4	Network Services	78	135
SUB-TOTAL		188	268
	SUPPORT		
3	Computer Specialists	5	20
TOTAL		193	288

5.A.2 The institution’s core collection and related information resources are sufficient to support the curriculum.

Montana Tech is enrolled in the Microsoft Campus Agreement for all of its Microsoft software needs. Most desktop operating systems and core software are licensed through this Campus Agreement. As part of other core software, Montana Tech is licensed to operate 28 Adobe Concurrent Master Suite sessions which are managed under a license server listed with 300 clients. Essentially, any Montana Tech computer can be setup with the Adobe Master Suite and includes instructional labs. The license server enables prioritizing client usage by time and/or station. Montana Tech addresses pc desktop

SELF-STUDY 2010

security by licensing all desktops with the McAfee Total Protection Advanced Suite of antivirus and malware protection software.

In the Spring of 2001, the Blackboard Course Management system was implemented to support the online curriculum and online components. Originally this system was purchased with Blackboard's Community System, but the only piece that was used from the Blackboard Community System was the portal. In 2006, the Community System was discontinued, and uPortal, an open source portal system, was implemented. In the Spring of 2009, Tech implemented the latest release of uPortal, making it easier for users to access important information. Please see exhibit 5.A.III – IT, [MyMtech](#). While Blackboard is a very good system for delivering content, assessments, and assignments, its synchronous technologies are not quite mature enough and cause frustration for some users. Because of this gap in online materials, Tech purchased Wimba, the web-conferencing virtual classroom application. Wimba integrates with Blackboard, allowing the user to access the following tools without requiring special software or separate authentication credentials:

- » Video;
- » Chat;
- » Whiteboard;
- » Application Sharing; and
- » Session Archiving.

As an example of this technology, an instructor on maternity leave is using Wimba in order to teach the following courses from home:

- » Math for Bus and Social Science I 70038 (44 enrolled);
- » Calculus I Honors 72440 (11 enrolled);
- » Calculus I 73731 (27 enrolled); and
- » Calculus II 70045 (58 enrolled).

In the above courses, lectures recorded with Wimba are available to students via Blackboard and can be viewed as many times as needed. Students have given positive feedback on this process, particularly from those in which English is a second language. The whiteboard function within Wimba is used to write formulas for the students. Finally, evening online office hours are conducted from the instructor's home.

Other examples of Wimba in use are graduate level courses. Students from all over the globe participate in the Masters in Project Engineering Management (MPEM) program. Dr. Kumar Ganesan meets these students weekly, via Wimba, by using Power Point slides and having students take turns delivering lectures with their own materials from wherever they live.

5.A.3 Information resources and services are determined by the nature of the institution's educational programs and the locations where programs are offered.

Information resources and services accommodate the needs of the institution's educational programs. To this end, the Network Services Department designed, built, and integrated an audiovisual (AV) and Access Grid Node (AGN) Communications

System into a new 24-seat computer lab for the Health Care Informatics Program, making it “a classroom of the future.”

This Lab became a reality early in 2005. Health Care Informatics is an emerging specialization in the health care industry that joins the disciplines of information technology, communications, and health care. The new system enhances instruction for Health Care Informatics students and truly is a premium conferencing and presentation system. It can be used to link Montana Tech Health Care Informatics and remote students.

These innovations are possible because Montana Tech understands that learning can be enhanced and facilitated by a laboratory-classroom which is integrated with networked computers, AV conferencing, and information and communications technologies.



On another front, with the completion of the new Natural Resources Building in late 2009, Montana Tech will have another 24 seat computerized classroom equipped with expanded audio/visual presentation and video conferencing capability. Montana Tech is increasingly mindful of how video conferencing enhances classroom instruction by using experts in the field from across the country.

While AV classrooms are instrumental in bringing information to the classroom, Tech has also purchased Wimba Classroom which is a virtual classroom environment that allows students to log on from anywhere. With the use of a microphone and camera, the student can also be seen and heard. These items add to the experience, but are not required. At a minimum, the student only needs a telephone; a phone number is provided to also join the class.

The number of students in online learning is increasing at a steady pace. This increase is recognized in students that take classes with an online supplement of a face to face class and in those courses that are delivered purely online. The following Figure 5.A.1 – IT, Increasing Online Access, demonstrates year by year access is increasing. The number of course views indicates the frequency of course access. A course view is simply a web page related to a course, so the more access the more online participation. The downward trend noted in the graph is attributed to completion of courses and finals approaching. Also, the Fall semester ends in mid-December.

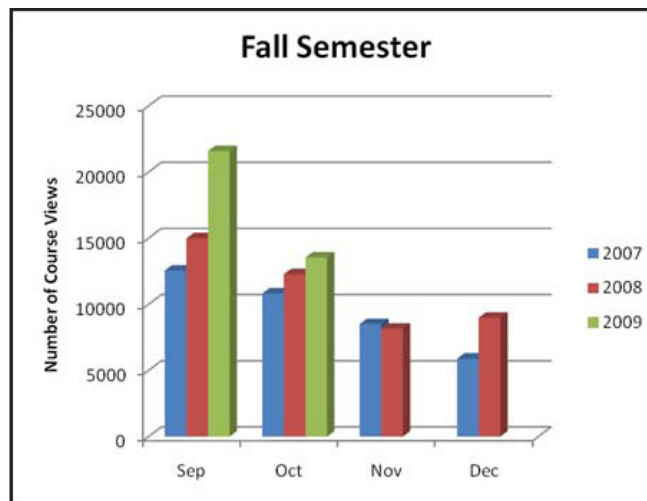


FIGURE 5.A.1 - IT, INCREASING ONLINE ACCESS

CLOSING THE LOOP

Based upon the increase, a Distance Learning Coordinator was hired. The Distance Learning Coordinator gives Tech faculty a resource person who understands all of the available technologies and pedagogical principles necessary to create high quality online courses.

Coupled with a clear plan and policies, a single point of contact reduces overall expenses to the University by providing support for a clearly defined distance learning “toolkit” (i.e., a set of common software applications) so that isolated faculty members and Departments do not purchase different software applications for web-conferencing, streaming video, and Podcast production, etc. Adopting and supporting a limited and unified set of software applications to maintain a distance learning program at the institutional level will enable Tech to take advantage of the cost savings associated with volume licensing.

Using technologies already available at Montana Tech, instructors are now able to cost-effectively encourage collaborative learning and to instill a sense of community among both distance and traditional students.

STANDARD 5.B – INFORMATION RESOURCES AND SERVICES

Information resources and services are sufficient in quality, depth, diversity, and currency to support the institution's curricular offerings.

5.B.1 Equipment and materials are selected, acquired, organized, and maintained to support the educational program.

The Campus Technology Services (CTS) Directors Council is the focus of integrating IT related systems into academic programs. Faculty, students, or deans introduce a need by first bringing it to the Computer and Telecommunications Advisory Committee whereby direction and funding are discussed. Once a plan of action is developed, a sub-committee presents to the Associated Student of Montana Tech (ASMT) where a vote is taken. Final approval comes from the Board of Regents.

CLOSING THE LOOP

As an example, most classes require multi-media to be integrated into the classroom. However, scheduling was becoming difficult because of availability problems. To alleviate this condition, Montana Tech furnished most classrooms with multi-media capability, an effort that continues as funding becomes available. Of the classrooms/computer labs that seat 24 or more student computers, 80% are now equipped with multi-media presentation equipment. Please reference Exhibit 5.B.I – IT, [*Campus Classroom Information*](#), for a detailed breakdown. Classrooms and conference rooms range from full audio/visual resources with guest computer interfaces and full conferencing capability all the way down to visual only.

5.B.2 Library and information resources and services contribute to developing the ability of students, faculty, and staff to use the resources independently and effectively.

Montana Tech prides itself on using resources independently and effectively by providing access to the following services and personnel:

- » CTS Helpdesk;
- » Computer Support Coordinators;
- » Distance Learning Coordinator; and
- » Online Services workshops.

SELF-STUDY 2010

In August, 2007, Network Services and the Library staff implemented a new Thin Client lab in the Library building to facilitate an instructional platform. The lab is used by Library personnel to conduct training classes on Library resource access. Also, the lab served as an experiment to validate the following assumptions normally associated with Thin Client computing: 1) Lower long-term hardware maintenance costs; and 2) Lower long-term software support costs. Thin clients are computers without hard drives and operate on client-server architecture with the central server performing processing activities. The idea is to ease hardware cost beyond the initial investment and to reduce computer configuration prototyping, computer setup, and maintenance. The initial investment is broken down in Required Exhibit 5.B.II – IT, [*Thin Client Lab Costs*](#). As expected, hardware costs have been low after the initial investment.

CLOSING THE LOOP

Another example of using technology independently and effectively is illustrated by the Video Remote Interpreting (VRI) Services now provided to Montana Tech's hearing-impaired students. Via an internet video link, a video interpreting service provider (SignOn) is accessed in Seattle. This eliminates the need for an in-person interpreter on site. A wireless microphone is attached to Montana Tech's instructor whose audio is received by the remote interpreter. Then the signed interpretation video is sent back to the hearing impaired student's notebook computer. Interaction with the instructor and student is through a webcam attached to the student's notebook computer. To communicate with the instructor, the student signs via video-communication to the remote interpreter. The interpreter then voices the translation back to the instructor and class.

Network Services worked to lighten the weight of the equipment by eliminating active devices and provisioning wireless connectivity through a privately secured band. This allows the hearing impaired students freedom to locate as desired in the classroom without having to plug into a wired network port.

At the beginning of each fall semester, Online Services provides a half day workshop for all faculty interested in using the online course management system (Blackboard). This workshop is reinforced by several one hour sessions throughout the academic year which are given by CTS Helpdesk staff. These sessions cover more detail and the more complex features of Blackboard. Upon request, one-on-one sessions are also available for instructors.

IT also understands that educating and assisting the faculty is only part of the process. It is also important to assist the students. Fortunately the CTS Helpdesk works with students as needed via email, phone, and in person and is particularly valuable for students who require more assistance.

5.B.3 Policies, regulations, and procedures for systematic development and management of information resources, in all formats, are documented, updated, and made available to the institution's constituents.

Montana Tech is covered with a three tiered policy structure. At the highest level are The Board of Regents IT policies covering The University of Montana (UM) and Montana State University and their affiliates. At the next level are The University of Montana IT policies governing not only the Missoula campus, but also the UM affiliates,

SELF-STUDY 2010

i.e. Montana Tech of The University of Montana, The University of Montana Western, and The University of Montana – Helena College of Technology. Finally, each respective campus has developed its own IT policies.

Please refer to the following links for full versions of these policies. Also, full versions can be found in Required Exhibit 5.B.III – [*IT, IT Policies*](#):

- » [*Montana Board of Regents Policies*](#);
- » [*The University of Montana*](#); and
- » [*MT Tech Network Policies*](#).

Computers, the internet, and our campus network are major components of learning at Montana Tech. Each of these components has policies which govern use and are beneficial to all.

5.B.4 Opportunities are provided for faculty, staff, and students to participate in the planning and development of the library and information resources and services.

Membership in both the Computer and Telecommunications Advisory Committee and the Web Guidance Committee is open to anyone interested in serving. These committees are directly involved in an advisory capacity with the planning and recommendations of IT development. The roster can be found in Exhibit 5.B.IV - IT, [*Committee Roster*](#). Please refer to section 5.B.1 for a related discussion.

5.B.5 Computing and communications services are used to extend the boundaries in obtaining information and data from other sources, including regional, national, and international networks.

University/Montana Tech Network Traffic travels regionally, nationally, and internationally via:

- » Commodity internet to non-university endpoints;
- » Subsidized/restricted Internet2 network to member university endpoints; and
- » Subsidized/restricted extreme National Lambda Rail Network between selected NLR member endpoints.

Northern Tier Network Consortium

Through the Northern Tier Network Consortium, the University of Montana is working to build an extreme network (10 Gbps) connecting the Pacific Northwest [*Gigapop*](#) in Seattle and Chicago with drop-points at the two major Montana universities and with eventual links to the other Montana campuses. Montana Tech's local area network logically is an extension of The University of Montana's enterprise network. Because of this arrangement in network architecture, benefits of network connectivity derived at The University of Montana ultimately extend to Montana Tech's campus.

The Montana implementation of the Northern Tier extreme network was completed in January 2010, and is now carrying both campuses and residence life traffic. This venture involves other State Universities, State Government, and the Gigapops working together. Please refer to exhibit 5.B.V – IT, [*Northern Tier Map*](#).

With the final implementation of the Northern Tier across the other states, The University of Montana currently provisions 1.5 of the 10 Gbps transport at UM-Missoula and allocates 500 Mbps of commodity internet service to UM-Missoula and all other affiliated campuses (200 Mbps allocated for campus traffic and 200 Mbps allocated for dormitory traffic, with 100 left in reserve). The remaining 1 Gbps is allocated to I2, the National R&E Network, and the National Lambda Rail. The Northwest Gigapop now serves both I2 and commodity internet to the University of Montana campuses. As the Northern Tier-based backup (a planned component of the transition) becomes live, the old setup and services will be decommissioned.

Rocky Mountain Super Computer

Plans are underway to execute an agreement whereby UM will provision a dedicated research and education network link available to the Rocky Mountain Super Computer (RMSC). This will allow RMSC to serve all eight Montana University System campuses and the national research and education community. Although RMSC would have access to the national research and education community, only those endeavors associated with the Montana University System would be allowed.

Both the availability of the on-campus computing cluster and its link to the supercomputing facilities of RMSC make it possible for undergraduate engineering, geosciences programs, graduate education, and faculty research programs to flourish at Montana Tech.

STANDARD 5.C – FACILITIES AND ACCESS

The institution provides adequate facilities for library and information resources, equipment, and personnel. These resources, including collections, are readily available for use by the institution’s students, faculty, and staff on the primary campus and where required off-campus.

5.C.1 Library and information resources are readily accessible to all students and faculty. These resources and services are sufficient in quality, level, breadth, quantity, and currency to meet the requirements of the educational program.

Students, faculty, and staff are given sufficient network access to the following systems they will use:

- » Student Information Services;
- » Resource Sharing;
- » Wireless Hotspots;
- » Computer Labs;
- » Multimedia Presentation;
- » Video Conferencing; and
- » Internet.

SELF-STUDY 2010

All of these resources and services are readily accessible. Campus Technology Services and the desktop computer support professionals support and maintain all of the computer resources and services. See Required Exhibit 5.C.I – IT, [CTS Organizational Chart](#). A related discussion can also be found in section 5.D.1.

Each building on the North Campus interconnects via fiber backbone to the newly renovated Data Center located in the MG Building; the infrastructure follows a dual-star topology. One star centers at the Montana Tech data center located in the Mining Geology Building, and the alternate star centers at the Engineering Building. The interconnection between the two is via a 1 Gbps link. Currently, one leg of the Engineering Building star connecting to the Chemistry Biology Building is 1 Gbps. Moreover, Network Services plans to implement 1 Gbps connections to all campus buildings. All internal links on the South Campus have been upgraded to run at 1 Gbps.

Both the South Campus and Apartment Housing interconnect to the LAN via two separate 45 Mbps licensed wireless microwave links. Additionally, there is a 54 Mbps wireless link to the Butte Airport supporting a Montana Tech Research Project. Also, we connect the Montana Bureau of Mines Pole Plant with an 11 Mbps wireless link.

Montana Tech's North Campus supports four instructional computer labs and 12 departmental or student use computer labs. The North Campus has four multi-media conference rooms located in the Student Union Building (SUB). Other conference rooms on campus have multimedia capability, such as the CBB conference room, the Dave Hill conference room (MUS 206), and ELCB 329. With two mobile video conferencing devices, video conferencing can now occur in any SUB conference room. Work is in progress to equip all classrooms of 24 seats or more with audio/video presentation capabilities, and the same is planned for several lower capacity classrooms. The South Campus supports four instructional labs with 25 computers each, a Learning Center with 22 computers, a Cad Lab, and one student access lab, (room 113) with 11 computers. Additionally, all faculty and staff are provided with a computer.



Network Services strives to maximize uptime utilization by planning upgrades, change-outs, and backups during low utilization periods such as summer, breaks, and weekends. See Exhibit 5.C.II – IT, [Systems Uptime](#), for an analysis of system downtime.

5.C.2 In cases of cooperative arrangements with other library and information resources, formal documented agreements are established. These cooperative relationships and externally provided information sources complement rather than substitute for the institution's own adequate and accessible core collection and services.

This substandard is appropriately answered in the Library's response to this standard.

STANDARD 5.D – PERSONNEL AND MANAGEMENT

Personnel are adequate in number and in areas of expertise to provide services in the development and use of library and information resources.

5.D.1 The institution employs a sufficient number of library and information resources staff to provide assistance to users of the library and to students at other learning resource sites.

Campus Technology Services (CTS) is structured to facilitate support. CTS is under the direction of the Vice Chancellor for Administration & Finance. The directors and managers from Network Services, Information Services, and Online Services comprise the Directors Council. The Directors Council advises the administration on technical issues, developments, and direction. The Directors Council can receive input from the Deans, Desktop Support Specialists, Faculty, Students, the Computer and Telecommunications Advisory Committee, or from the Web Guidance Committee. The desktop support is distributed to facilitate customized support to the College of Engineering and School of Mines, to the College of Letters, Sciences, and Professional Studies, and to the College of Technology. The Desktop Support Specialists are linked to CTS for technical direction and are managed by the Deans of each respective college.

The Campus Technology Services Helpdesk is staffed by two well trained students year round. These students take care of most problems, help the faculty and staff as necessary, and provide training workshops throughout the academic year. When an issue surpasses their knowledge, it is brought to the attention of the appropriate person. Please refer to Figure 5.D.1 – IT, [*CTS Organizational Chart*](#).

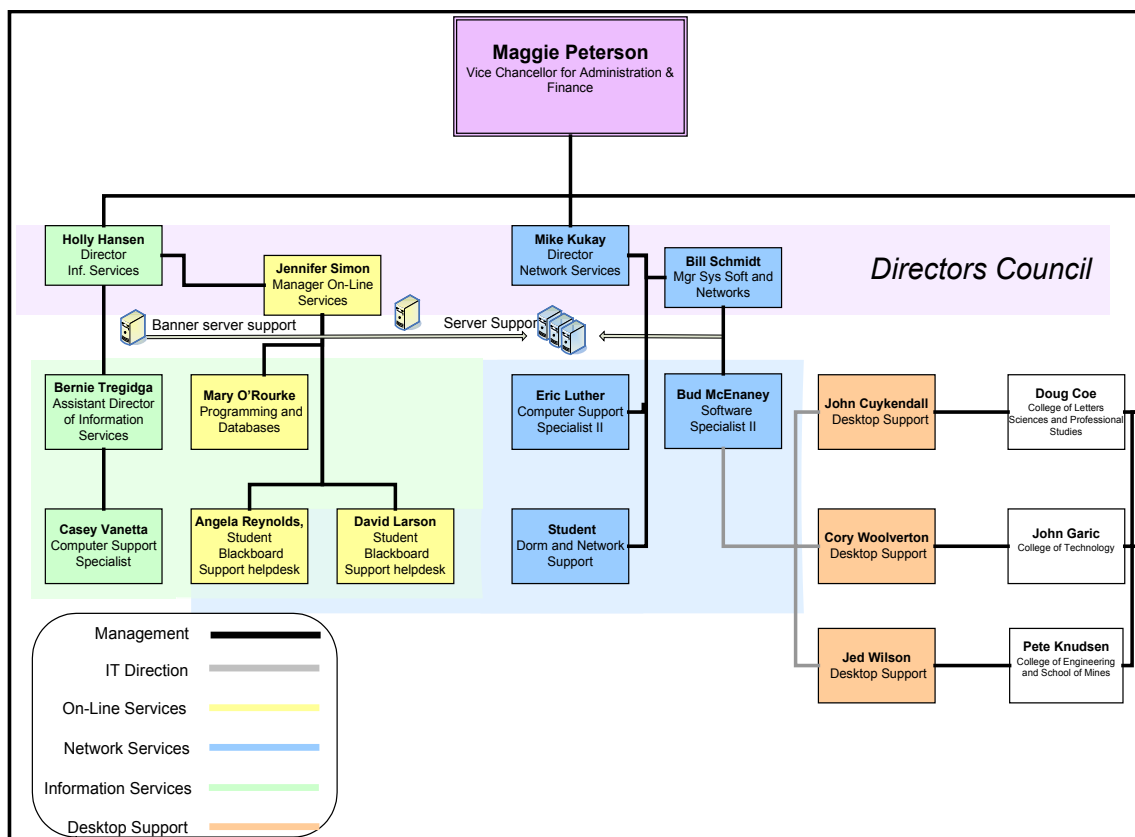


FIGURE 5.D.1 – IT, CTS ORGANIZATIONAL CHART

5.D.2 Library and information resources staff include qualified professional and technical support staff, with required specific competencies, whose responsibilities are clearly defined.

Network Services supports and delivers information technologies to the Montana Tech campus. Information technology includes World Wide Web, e-mail, student information systems, human resources, distance learning, video conferencing, and collaborative information and resource sharing. The network delivers all media and computer communication, facilitating both instructional and administrative needs. Network Services develops, monitors, secures, and maintains the entire network infrastructure. Network Services has four full-time employees with a total of over 78 years of networking and computer experience at Montana Tech.

Information Services is a unit within Campus Technology Services and is responsible for the campus administrative computing functions. Included in those functions are management/coordination/maintenance of the student information

system (Banner), reporting from the centralized human resource database, designing/reporting/developing the various college supported data warehouses, and managing Nolij (the system used to store/retrieve scanned documents). Information Services has three full-time employees with a total of 69 years of administrative computing experience specializing in higher education.

Online Services creates and maintains enterprise-level web applications, some of which include Blackboard, MyMtech (uPortal), and Online Course Evaluations. This unit is also responsible for maintaining a web server, a media server, and for managing the CTS Helpdesk. Online Services has two full-time staff employees with a total of 41 years of experience developing enterprise level applications.

The Directors/Managers from these three areas comprise the Campus Technology Council which advises the administration on technical issues, developments, and direction. The minutes of the meetings are included in Exhibit 5.D.I - IT, [*CTS Minutes*](#), and primary duties can be found in Required Exhibit 5.D.II - IT, [*CTS Principal Responsibilities*](#).

5.D.3 The institution provides opportunities for professional growth for library and information resources professional staff.

To keep up with new developments, CTS staff attends yearly conferences, especially those that pertain to projects at hand. For example, Blackboard is undergoing several major changes with the corporate merger between Blackboard and WebCT. Therefore BBWorld, 2008, was well attended by Tech staff to determine how emerging changes would affect the campus. Another example are the ongoing upgrades to Banner, which attracted a number of staff to the annual SCT Summit. Also, local yearly conferences are attended, such as the Montana State University Security Conference and the Montana Telecommunications Conference.

5.D.4 Library and information resources and services are organized to support the accomplishment of institutional mission and goals. Organizational arrangements recognize the need for service linkage among complementary resources bases (e.g., libraries, computing facilities, instructional media and telecommunication centers).

Tech's computer services have re-organized with an emphasis on both distributing computer support and on focusing on mission critical support service areas. The re-organization has brought computer service closer to the end user and, at the same time, developed and focused core networking and administrative services. (Please refer to sections 5.D.I and 5.D.II for discussions of Campus Technology Services and the linkages to complementary resources.)

Montana Tech encourages the use of computers and the network as educational and problem solving research tools. A fully integrated local area network connects more than 1000 computers and peripherals with over 500 workstations dedicated to student use. Microcomputer labs are located in most buildings on campus to support student word processing, business applications, engineering data acquisition/analysis, e-mail, and access to the World Wide Web.

SELF-STUDY 2010

5.D.5 The institution consults library and information resources staff in curriculum development.

Where appropriate, Campus Technology Services (CTS) is consulted in areas directly related to IT services. Such areas are podcasting and distance learning, with Blackboard as the primary application used for distance learning. Supporting tools, such as Wimba and iTunes U, have building blocks associated with them that allow a seamless integration from Blackboard to these supporting tools.

CTS personnel are typically consulted on technical aspects of, for example, integrating podcasting into a given curriculum; this approach involves production, publication, and delivery. Montana Tech subscribes to iTunes U from Apple and is currently working on setting up a podcasting server.

5.D.6 The institution provides sufficient financial support for library and information resources and services, and for their maintenance and security.

Designated Fee Accounts

Several designated fee accounts are dedicated to laboratory and computing equipment. The most important fee account is the Computer Use Fee which fee is used to purchase equipment, software, maintenance, or related items that will benefit the instructional program. The use of this fee is determined through annual meetings of the Computer and Telecommunications Advisory Committee. This committee meets on and approves a computer use plan that is projected out for the next five years. This plan looks at replacing all workstations in the campus computer lab at least once every four years. This plan contains allocations for workstations, network/departmental servers, for software, paper and toner, and for lab printers. There is a separate fee for the North Campus and for the South Campus. See Required Exhibits 5.D.III –IT, [Computer Fee](#), and 5.D.IV -- IT, [COT Computer Fee](#).

The college coordinators are often in the best position to recognize the educational and administrative requirements of the constituencies that they serve; therefore, they often bring recommendations to the committee for consideration. These recommendations include which workstations and servers to replace, recommendations for software and support, and any individual departmental needs to be addressed by planning. The coordinators also work closely with department heads and deans to make recommendations on workstation specifications and requirements based on the educational needs of the department.

The campus also uses a Technology Fee account to support the technology infrastructure for academic and administrative systems. On an annual basis, the



workstation needs of the faculty and staff are assessed, and replacement workstations are made from the technology fee account. Montana Tech strives to replace faculty and staff workstations at least once every four years. The Technology Fee account is also used to purchase academic software, personal electronic devices for campus use, repair and maintain network services, and utilized to support campus online services. See Required Exhibit 5.D.V – IT, [Technology Fee](#).

Major laboratory and educational equipment purchases are funded through the Equipment Fee. Both the North and the South campuses have separate equipment fees. On an annual basis, the deans contact department heads on their equipment needs for the upcoming fiscal year. The Deans Council reviews the compiled list of requests and allocates funding for the upcoming year based on projected fee revenues. The Vice Chancellor of Academic Affairs and Research oversees the process and regularly reviews the spending throughout the year. Should the requirements of the departments change through the year, the Vice Chancellor may reallocate funding in collaboration with the deans. Again, funding is based both on the merit of the request and on the educational requirements of the academic programs. See Required Exhibits 5.D.VI – IT, [Equipment Fee](#), and 5.D.VII – IT, [COT Equipment Fee](#).

An Academic Facility Fee is also assessed to students and is used primarily as a classroom improvement account. Faculty or staff members who recognize a need for classroom improvements submit a request to the Vice Chancellor of Academic Affairs and Research. Typically these requests include classroom furniture, such as tables, desks, chairs, and podiums as well as classroom fixtures, such as white boards, overhead projectors, and computer data projectors. See Required Exhibit 5.D.VIII – IT, [Academic Facility Fee](#).

Table 5.D.I – IT below summarizes funds utilized from FY 2005 through FY 2009.

TABLE 5.D.I - IT, DESIGNATED FEE ACCOUNT EQUIPMENT FUNDING

Montana Tech					
Designated Fee Account Equipment Funding					
Fee Account	FY05	FY06	FY07	FY08	FY09
Equipment Fee (BEQMTF)	\$ 207,288	\$ 238,874	\$ 294,073	\$ 264,819	\$ 272,014
Computer Fee (BCOMPU)	183,556	383,912	275,984	216,827	215,402
Academic Facilities Fee (BAFMGB)	42,590	19,908	33,029	45,196	102,981
Technology Fee (BTECFE)	184,161	161,655	157,882	227,763	307,596
COT Equipment Fee	48,251	66,554	57,485	72,160	67,664
COT Computer Fee	42,809	56,648	68,650	47,715	50,810
Total	\$ 708,655	\$ 927,551	\$ 887,103	\$ 874,480	\$ 1,016,467

SELF-STUDY 2010

STANDARD 5.E – PLANNING AND EVALUATION

Library and information resources planning activities support teaching and learning functions by facilitating the research and scholarship of students and faculty. Related evaluation processes regularly assess the quality, accessibility, and use of libraries and other information resource repositories and their services to determine the level of effectiveness in support of the educational program.

5.E.1 The institution has a planning process that involves users, library and information resource staff, faculty, and administrators.

The planning process is via the Computer and Telecommunications Advisory Committee which is made up of representatives from faculty, staff, and students. This Committee is advisory to the Administration. Decisions on computer replacement schedules, software purchases, network expansion to wireless, multi-media expansion to classrooms, and on OS platform are typically made by this committee. The Committee is the oversight for the Computer Use Fee assessed to all students each semester.

Guests are always welcomed to voice an area of concern or expertise pertinent to a particular subject or academic area/department - not directly represented by committee membership. The membership of all committees can be found in Exhibit 5.B.IV – IT, [Committee Roster](#).

Another committee involved with planning is the Web Guidance Committee which is composed of both faculty and staff. Created in 1998 with the original intent to guide the entire web site (look and feel as well as updating of content, policies, and the use of templates), the committee quickly realized that developing a web site by committee was not a good idea. Everyone has a different opinion on the way the site should look, how strict the use of templates should be, and so forth. For this reason, the Web Committee became more of a policy committee. To date, only one policy has been created, one requiring that all departments use a uniform template, or work with Tech's webmaster to create one that will still provide a similar look and feel as the standard, which was adopted in May 2006. The membership can be found in Exhibit 5.B.IV – IT, [Committee Roster](#).

5.E.2 The institution, in its planning, recognizes the need for management and technical linkages among information resource bases (e.g., libraries, instructional computing, media production and distribution centers, and telecommunication networks).

In order to foster communication among informational resources, the Campus Technology Services (CTS) Council was formed in 2005. Members of the Council include the Director of Information Services, Director of Network Services, Manager of System Software and Networks, and the Manager of Online Learning and Extended Projects. Monthly meetings are held, with notes taken and forwarded to the Vice Chancellor of Administration and Finance.

Because easy access from one software system to another is important, Montana Tech's portal (MyMtech) has been designed with portlets that provide intuitive, easy linkages to the various software systems. Thus, with one click of the mouse, users can access their Blackboard courses, view campus announcements, and manage their campus email. In 2010 and 2011, Tech plans to add several new portlets that will allow students easy access to their grades, to any holds placed on their account, and to posted jobs available on campus.

5.E.3 The institution regularly and systematically evaluates the quality, adequacy, and utilization of its library and information resources and services, including those provided through cooperative arrangements, and at all locations where courses, programs, or degrees are offered. The institution uses the results of the evaluations to improve the effectiveness of these resources.

Network Services regularly and systematically evaluates both the quality and the adequacy of its campus information technology resources. Montana Tech is more than willing to accommodate network access for those who require remote service to the campus LAN. Several examples follow with expanded discussions found in Exhibit 5.E.I - IT, *Expanded Discussions* for each.

Data Center

The data center had no substantial upgrades for at least 20 years prior to its recent renovation. The data center is always the heart of an enterprise, and this is true for Montana Tech as well. The student information system, course management system, web server, e-mail, print services, and network services are centrally supported at this core.

Renovation of Montana Tech's Data Center or computer room was completed August 18, 2008. This need was pushed by the integration of the New Media Group (currently called Online Services) into Campus Technology Services (CTS). This integration required at least 12 additional servers to be installed in the data center; as a result, a 50% added load of heat and power over (at the time) current loads was realized. The New Media server pool was housed in the Library. Short-term planning required Network Services to install additional servers and a new monitoring system in the data center. For details and a complete analysis, please see Required Exhibit 5.A.II – IT, *Montana Tech Data Center Upgrade*.

Cabling Infrastructure

Since 1999, Network Services has upgraded the cabling plant. Two network wiring projects (one in 1999 and the other in 2006) were undertaken to eliminate all shared media and both substandard unrated twisted pair cable and all non-plenum wire designated for such areas.

Early, in the spring of 1999, Network Services evaluated the campus wiring infrastructure. Please refer to Required Exhibit 5.E.II – IT, *Strategic Network Planning*. This self evaluation revealed that the campus building-wiring infrastructure ranged all the way from poor to excellent. Wiring was anything from thin-wire, to unrated twisted

pair, Category 3 or Category 5. These were typical legacy issues that still confront most businesses today. Consequently, Network Services planned an upgrade from the original shared 10-Mb backbone to a 100-Mb switched/routed facility with gigabit on designated backbone legs.

Microwave – Point to Point

In early 2003, Network Services was concerned with the wireless point-to-point circuits both to the College of Technology and to the campus Apartment Housing surviving the demise of Touchamerica. Touchamerica, a telecommunications enterprise, had provisioned both circuits. The equipment used was old, and support was expected to sunset for all units in service. To prevent this from happening, Network Services researched the feasibility of deploying a campus owned point-to-point, voice and data system.

In July, 2003, Montana Tech installed a licensed microwave (point-to-point) between the North Campus and both the College of Technology and the campus Apartment Housing. The COT is approximately 5.5 miles (line of site) to the south, and the Apartment Housing is approximately 1 mile to the north of the main campus.

The project extended Montana Tech's LAN and PBX connectivity by providing both voice and data services to these remote sites and also improved the extremely limited bandwidth (2 Mbps). This was accomplished with two, 18 GHz licensed microwaves, delivering 45 Mbps at both remote sites.

Airport

Network Services extended the campus LAN network to the Bert Mooney Airport via a 54 Mbps wireless point-to-point. A special engineering research project on airport security was being studied under the direction of Montana Tech General Engineering faculty. Bert Mooney Airport Authority (BMAA) wanted a Vehicular Identification Smart Sensor Web (VISSW) for detection, classification, and mitigation of events related to untended vehicles at the terminal curbside and public roadways adjacent to the air operations area of small regional airports. This site has since been decommissioned (spring 2009) with the end of the research project.

Pole Plant

The Montana Pole Treatment Plant Superfund site is the location of a former wood-treating facility that operated from 1946 to 1985. Contamination of soils, ground water, and Silver Bow Creek resulted from discharges of solutions used in the treating process. The Montana Bureau of Mines assisted the State of Montana in setting up an environmental monitoring network to prevent offsite migration or release of site contaminants. They currently operate the site water treatment plant and establish contaminant levels and provide all environmental sampling and monitoring during site cleanup and construction activities. Network Services extended a network to the Pole Plant via an 11 Mbps wireless point-to-point. The Pole Plant is located approximately 1 mile south of Tech's North Campus.

Montana Tech Mineral Research Center

The Mineral Research Center is a Montana Tech facility located in the Butte industrial park on South Parkmont Drive and is approximately 1 mile south of the College of Technology. This facility currently consists of five buildings located on 11.3 acres. Two of the buildings are high bay structures of 3200 sq. ft. each. In addition, there are two single story buildings (a shop and warehouse building of 3200 sq. ft.) and a Laboratory Building of 6400 sq. ft.

In the past, this facility supported campus research, but by the 1990's Montana Tech's use had ceased, and it became entirely a rental facility. In early 2000, however, three buildings were once again used by Montana Tech, two by the RAVE Technical Development Center and one by the student project clubs (human powered vehicle, bridge competition, etc.). General Engineering is currently proposing to relocate its machining capability and robotic welders to the North Campus. The student project shop would also be relocated to the North Campus. Proceeds of the MRC sale could be used to support both of these relocations.

Because Network Services accommodates any academic program requiring network access, at one time the LAN was extended to the Mineral Research Center. At that time, a 54 Mbps wireless point-to-point link was installed. However, this site has subsequently been decommissioned (spring 2009) with the end of the research project.

Wireless

Montana Tech now has a comprehensive enterprise wireless system. This system uses a central Aruba wireless controller and thin access points to provide dual band concurrent 802.11a and b/g access. The system delivers extensive integrated security and provides physical layer security, data encryption, VPNs, and a firewall to protect users on the network.

The current campus wireless system provides reliable wireless access to students, to employees, and for special events at Montana Tech. See Exhibit 5.E.III – IT, [*Wireless Interface*](#). Approximately 85 access points are currently deployed to provide wireless access in nearly every building on campus that includes the dorms, apartment housing, and the South Campus.



The 802.11a band also hosts various specialized networks for different campus uses. The computer lab in the Mill building runs completely on the private wireless network hosted by the access points in that building. This design provides a level of redundancy to all of the computers in that lab. If one of the access points fails, another access point close by will seamlessly take over the traffic management for the computers that the failed access point was handling.

The 802.11a band of the wireless network has also provided service to hearing-impaired students at Montana Tech. Before the wireless network was deployed for

SELF-STUDY 2010

the specialized laptops, each laptop had to have a special configuration for each room the student had a class in. However, with the new wireless network, the laptops can now roam from room to room and give students the required hearing services without worrying about network access.

The wireless network at Montana Tech is very versatile and will allow wireless coverage to be expanded and upgraded for several years into the future. The modular design of the Aruba equipment allows integration of new technology without changing the entire network infrastructure.

CLOSING THE LOOP

Strengths

The IT staff is service-oriented and delivers information technology in all of its forms. All the projects mentioned in this document could only be accomplished with a dedicated IT staff. Montana Tech's IT professionals have a depth of knowledge reflected in the diverse IT infrastructure that they support. Through cooperation and teamwork with Montana Tech Faculty and Staff, IT Staff provides innovative solutions that support the Mission of Montana Tech. The dedication of the 12 IT members reflects the longevity of key members, with a collective total number of years of service to Montana Tech IT at 193 years.

Opportunities for Improvement

Enhance MyMTEch (portal) experience, allowing users to view information that is most important to each student, faculty, or staff member's unique needs.

The Wide Area Network (WAN) pipe which logically interconnects Montana Tech to the University of Montana currently shows signs of saturating. A typical upgrade will most likely advance the resource from 45 Mbps to 155 Mbps.

The Local Area Network (LAN) backbone links, which interconnect all campus buildings to the data center, must eventually be upgraded from 100 Mbps multi-mode fiber to 1 Gbps single mode fiber.

Direct-attached storage is proving insufficient for some of the applications and system network services.

Multi-media capable classrooms and conference rooms are increasingly more in demand; with this growth comes the need for a dedicated support technician to inventory, maintain, and even to operate the equipment in these rooms.

CLOSING THE LOOP

Moving Forward

Enhance MyMTech (portal). Several portlets are scheduled to be added. An example is the Blackboard Community System which will be implemented in January of 2010. It allows users, or anyone, to add money to a campus DiggerCard account. This system will be integrated with MyMTech.

The Wide Area Network (WAN) pipe usually has a lesser bandwidth capacity than the LAN. To regulate this limited resource, packet shaping, firewalling, and anti-spamming devices are in place at the University of Montana. However, even with these regulators in place, at some future point Tech's WAN link will saturate.

The Local Area Network (LAN) backbone is being upgraded to single-mode fiber, where opportunity presents. For example, both the new Natural Resource Building and the ELCB now have single-mode fiber to interconnect to the data center. Moreover, where distance permits, Tech operates multimode fiber at 1 Gbps – for example, within the College of Technology. Upgrading of all building backbones to 1 Gbps is planned.

Direct-attached storage will be replaced with a Storage Array Network (SAN). A SAN will expand the following services: larger individual e-mail stores, automated enterprise backups, and alternate site availability.

Multi-media systems support and faculty expectations are eased by standardizing classroom and conference room setups. New projectors with double bulb length, consistent bulb modules, and automatic filter cleaning, will free up computer support staff and conserve monetary resources. Although Tech continues to operating smarter, the sheer size of demand points to an eventual staff increase or to a reallocation of efforts.

SELF-STUDY 2010

REFERENCED EXHIBITS

- Required Exhibit 5.A.I - IT, *Campus Computer Lab Inventory*
Required Exhibit 5.A.II – IT, *Montana Tech Data Center Upgrade*
Exhibit 5.A.III – IT, *MyMtech*
Exhibit 5.B.I – IT, *Campus Classroom Information*
Required Exhibit 5.B.II – IT, *Thin Client Lab Costs*
Required Exhibit 5.B.III – IT, *IT Policies*
Exhibit 5.B.IV – IT, *Committee Roster*
Exhibit 5.B.V – IT, *Northern Tier Map*
Required Exhibit 5.C.I – IT, *CTS Organizational Chart*
Exhibit 5.C.II – IT, *Systems Uptime*
Exhibit 5.D.I – IT, *CTS Minutes*
Required Exhibit 5.D.II – IT, *Principal Responsibilities*
Required Exhibit 5.D.III – IT, *Computer Fee*
Required Exhibit 5.D.IV – IT, *COT Computer Fee*
Required Exhibit 5.D.V – IT, *Technology Fee*
Required Exhibit 5.D.VI -- IT, *Equipment Fee*
Required Exhibit 5.D.VII – IT, *COT Equipment Fee*
Required Exhibit 5.D.VIII – IT, *Academic Facility Fee*
Exhibit 5.E.I – IT, *Expanded Discussions*
Required Exhibit 5.E.II – IT, *Strategic Network Planning*
Exhibit 5.E.III – IT, *Wireless Interface*

LIST OF TABLES

- TABLE 5.A.I – IT, Experience in Years
TABLE 5.D.I – IT, Designated Fee Account Equipment Funding

LIST OF FIGURES

- Figure 5.A.1 – IT, Health Care Informatics Classroom
Figure 5.A.2 – IT, Increasing Online Access
Figure 5.B.1 – IT, VRI Computer
Figure 5.D.1 – IT, CTS Organizational Chart

SUPPORTING DOCUMENTATION FOR STANDARD FIVE

REQUIRED EXHIBITS

1. Printed materials that describe for students the hours and services of learning resources facilities such as libraries, computer labs, and audio-visual facilities.
 - a. *Campus Computer Lab Inventory*
 - b. *Campus Classroom Information*
2. Policies, regulations, and procedures for the development and management of library and information resources, including collection development and weeding.

IT Policy Directory includes the following:

 - a. Montana Board of Regents Policies
 - b. The University of Montana
 - c. Montana Tech Network Policies
3. Statistics on use of library and other learning resources.
 - a. This required exhibit applies only to the library and is available in the library required exhibits.
4. Statistics on library collection and inventory of other learning resources.
 - a. This required exhibit applies only to the library and is available in the library required exhibits.
5. Assessment measures utilized to determine the adequacy of facilities for the goals of the library and information resources and services.
 - a. *Downtime*
 - b. *SRP*
 - c. *Wireless Monthly and Yearly Usage*
 - d. *Backbone Graphs*
 - e. *ipPulse*
 - f. *Real-time network status graph*
 - g. *Wireless Admin Interface*
 - h. *Wireless Usage Snapshots*

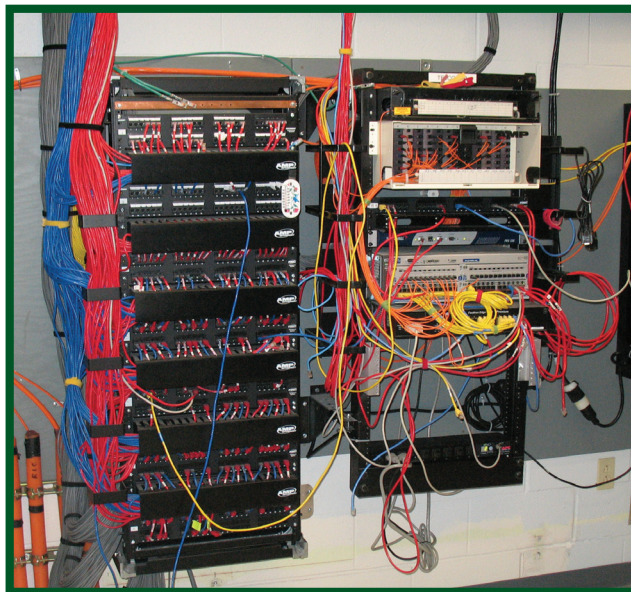
SELF-STUDY 2010

6. **Assessment measures to determine the adequacy of holdings, information resources and services to support the educational programs both on and off campus.**
 - a. *BB Training Survey Results*
 - b. *Blackboard Stats*
 - c. *Faculty Blackboard User Survey Results*
7. **Data regarding number and assignments of library staff.**
 - a. This required exhibit applies only to the library and is available in the library required exhibits.
8. **Chart showing the organizational arrangements for managing libraries and other informational resources (e.g. computing facilities, instructional media, and telecommunication centers).**
 - a. *CTS Organizational Chart*
 - b. *Principal Responsibilities*
9. **Comprehensive budget(s) for library and information resources.**
 - a. *Computer Fee*
 - b. *COT Computer Fee*
 - c. *Technology Fee*
 - d. *Equipment Fee*
 - e. *COT Equipment Fee*
 - f. *Academic Facility Fee*
10. **Vitae of professional library staff.**
 - a. This required exhibit applies only to the library and is available in the library required exhibits.
11. **Formal, written agreements with other libraries.**
 - a. This required exhibit applies only to the library and is available in the library required exhibits.
12. **Computer usage statistics related to the retrieval of library resources.**
 - a. This required exhibit applies only to the library and is available in the library required exhibits.
13. **Printed information describing user services provided by the computing facility.**
 - a. *Blackboard Faculty Training Manual*
 - b. *Blackboard Student Training Manual*

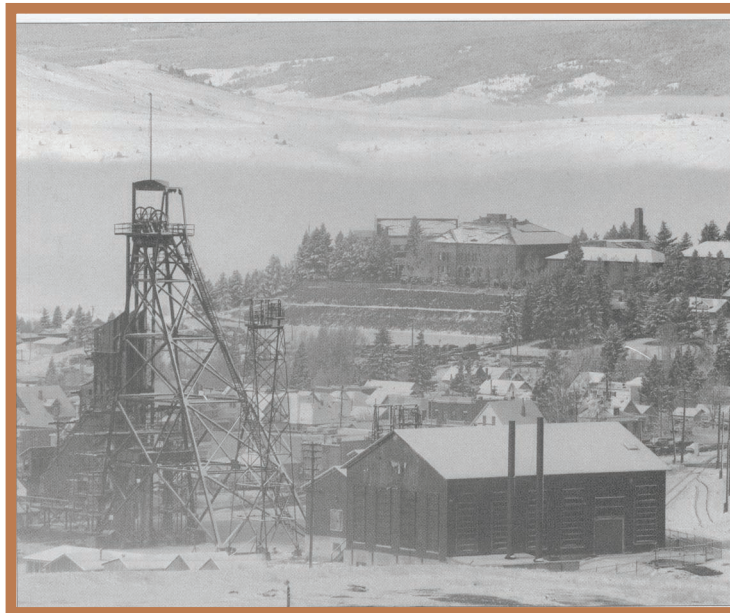
14. Studies or documents describing the evaluation of library and information resources.
 - a. *Montana Tech Data Center Upgrade*
 - b. *Strategic Network Planning*

GENERAL EXHIBITS

1. Miscellaneous
 - a. *CTS Minutes*
 - b. *Northern Tier Map*
 - c. *Committee Roster*
 - d. *Jos Nigeria*
 - e. *IT Resources*
 - f. *MyMtech*



STANDARD 6 - GOVERNANCE AND ADMINISTRATION



STANDARD 6.A - GOVERNANCE SYSTEM

Montana Tech of The University of Montana is one of four separately accredited institutions of The University of Montana:

TABLE 6.A.I: CAMPUSES OF THE UNIVERSITY OF MONTANA

FOUR YEAR INSTITUTION	LOCATION	ASSOCIATED TWO-YEAR INSTITUTION
The University of Montana-Missoula	Missoula	The University of Montana-Missoula College of Technology
	Helena	The University of Montana-Helena College of Technology
Montana Tech of The University of Montana	Butte	Montana Tech of The University of Montana College of Technology
The University of Montana-Western	Dillon	

The institutions making up The University of Montana are all part of the Montana University System (MUS). The other parts of the Montana University System are shown in Tables II and III below:

TABLE 6.A.II: CAMPUSES OF MONTANA STATE UNIVERSITY

FOUR YEAR INSTITUTION	LOCATION	ASSOCIATED TWO-YEAR INSTITUTION
Montana State University-Bozeman	Bozeman	
Montana State University-Billings	Billings	Montana State University – Billings College of Technology
Montana State University-Northern	Havre	
	Great Falls	Montana State University – Great Falls College of Technology

TABLE 6.A.III: PUBLIC COMMUNITY COLLEGES

TWO-YEAR INSTITUTION	LOCATION
Dawson Community College	Glendive
Flathead Valley Community College	Kalispell
Miles Community College	Miles City

SELF-STUDY 2010

Montana Tech traces its roots to the *enabling act* of 1889 which granted statehood to the people of Montana. In that act, the United States Congress set aside 100,000 acres to establish and maintain a school of mines. In 1900, the Montana School of Mines opened its doors. In 1965, the school underwent a name change to the Montana College of Mineral Science and Technology. On January 21, 1994, the Board of Regents adopted a plan to restructure the entire Montana University System (described in the document "*The Restructuring of the Montana University System (Phase One)*") followed by adoption of a resolution on July 6, 1995, initiating a *second phase*. This restructuring created the Montana University System described in the preceding tables and gave the college its new name, Montana Tech of The University of Montana. It also assigned to Montana Tech what had been the Butte Vocational-Technical Center and what is now the Montana Tech of The University of Montana College of Technology (COT).

6.A.1 The system of governance ensures that the authority, responsibilities, and relationships among and between the governing board, administrators, faculty, staff, and students are clearly described in a constitution, charter, bylaws, or equivalent policy document.

Article X, Section 9 of the Constitution of the State of Montana establishes a Board of Regents of Higher Education, in which is vested "full power, responsibility, and authority to supervise, coordinate, manage, and control the Montana University System, and supervise and coordinate other public educational institutions assigned by law." In addition to governing the fourteen campuses of the Montana University System listed in the introduction to this standard, the Board of Regents actively coordinates educational efforts with the seven tribal and three private colleges in the state.

Montana statutes further elaborate on the authority and responsibilities of the *Board of Regents, local executive boards, chancellors, and presidents*.

The work of the Board of Regents, and its relationships with the administrators, faculty, staff, students, and other stakeholders in the system it governs, is defined in system-wide policies that it promulgates. These policies are codified in the *Montana Board of Regents of Higher Education Policy and Procedures Manual*, an electronic document readily available to all stakeholders on the Montana University System website (<http://mus.edu>).

Section 200 of this manual covers policies on governance and administration and includes a set of bylaws (*Policy 201.7*) originally adopted by the Board of Regents in 1982. As with many of the other policies, the bylaws have been amended periodically, most recently in 2004. In addition to provisions on officers, meetings, and standing committees, this same policy covers the appointment of a student member to the Board of Regents.

Section 200 also provides policies on the appointment of, and the duties and responsibilities of, presidents (Policies *205.1* and *205.2*), chancellors (*Policy 205.2.1*), and local executive boards (*Policy 217.1*) of the campuses of the Montana University System.

6.A.2 The governing board, administrators, faculty, staff, and students understand and fulfill their respective roles as set forth by the governance system's official documents.

After operating for over a decade in the current administrative format, members of the Board of Regents, administrators, faculty, and staff fully understand their respective roles within the framework of the governing documents of the Montana University System.

6.A.3 The system of governance makes provision for the consideration of faculty, student, and staff views and judgments in those matters in which these constituencies have a direct and reasonable interest.

Article II of the Constitution of the State of Montana reads as follows:

Section 8. Right of participation. The public has the right to expect governmental agencies to afford such reasonable opportunity for citizen participation in the operation of the agencies prior to the final decision as may be provided by law.

Section 9. Right to know. No person shall be deprived of the right to examine documents or to observe the deliberations of all public bodies or agencies of state government and its subdivisions, except in cases in which the demand of individual privacy clearly exceeds the merits of public disclosure.

In keeping with these provisions, the Board of Regents posts [notices](#) of its meetings on its website, and notices include [agenda items](#) to be considered at these meetings. A detailed set of procedures for the submission of agenda items is provided in the document [Montana Board of Regents of Higher Education Procedures and Guidelines for Agenda Items](#) which is also posted on the website. The order of business provided in [Article IX](#) of the Bylaws of the Board of Regents of Higher Education specifically sets times aside for separate meetings with representatives of the faculty, staff, and students, as well as with local community leaders.

A further reflection of Article II, Sections 8 and 9 of the Constitution of the State of Montana is contained in [Policy 203.6](#), which prohibits the use of e-mail in deliberations of, and actions on, substantive matters by the Board of Regents. All of these policies and procedures help guarantee that the views of all stakeholders, including members of the public, are considered on matters brought before the Board of Regents.

6.A.4 In a multi-unit governance system (state or district), the division of authority and responsibility between the central system office and the institution is clearly delineated. System policies, regulations, and procedures concerning the institution are clearly defined and equitably administered.

As part of the Montana University System and a unit of The University of Montana, Montana Tech is subject to the governance of the Board of Regents and the President of The University of Montana. As noted above in 6.A.1, the Board of Regents, acting in accordance with its constitutional and statutory authority, has through its

SELF-STUDY 2010

policies and procedures delineated the authority and responsibilities of the Office of the Commissioner of Higher Education (the central office) and Montana Tech (the institution).

An *organization chart* of the Office of the Commissioner of Higher Education is available on the Montana University System website. Employees of the Office of the Commissioner of Higher Education and their salaries are presented in Exhibit 6.A.I.

STANDARD 6.B - GOVERNING BOARD

The governing board is ultimately responsible for the quality and integrity of the institution (or institutions in the case of the multi-unit system.) It selects a chief executive officer, considers and approves the mission of the institution, is concerned with the provision of adequate funds, and exercises broad-based oversight to ensure compliance with institutional policies. The board establishes board institutional policies, and delegates to the chief executive officer the responsibility to implement and administer these policies.

6.B.1 The board includes adequate representation of the public interest and/or the diverse elements of the institution's constituencies and does not include a predominant representation by employees of the institution. The president may be an ex officio member of the board, but not its chair. Policies are in place that provide for continuity and change of board membership.

Article X, Section 9 of the Constitution of the State of Montana and *Article III of the Bylaws of the Board of Regents of Higher Education* provide for a Board of Regents that consists of six members who are appointed to seven-year overlapping terms and one member who is a registered, full-time student at a unit of the Montana University System appointed to a term of not less than one nor more than four years. All seven members are appointed by the Governor and confirmed by the Senate. Of the non-student members, not more than four may reside in one congressional district and not more than four may be affiliated with the same political party. In making appointments, the Governor generally consults with members of the Board of Regents, the Commissioner of Higher Education, the campuses, and other stakeholders.

In addition to the seven appointed voting members of the Board of Regents, the Governor, the Superintendent of Public Instruction, and the Commissioner of Higher Education are all ex officio, non-voting members of the Board. Vacancies that occur prior to the end of a term are filled by appointment by the Governor.

The following table lists the *individuals currently serving on the Board of Regents*. Although Montana currently has only one congressional district, appointments have been made so as to maintain a geographic distribution.

TABLE 6.B.I BOARD OF REGENTS

APPOINTED VOTING MEMBERS	LOCATION	POSITION	TERM EXPIRES
Barnosky, Robert	Billings	Student regent	06/30/2010
Barrett, Stephen M.	Bozeman	Chair and regent	02/01/2012
Buchanan, Todd	Billings	Regent	02/01/2014
Christian, Clayton	Missoula	Vice chair and regent	02/01/2015
Morrison-Hamilton, Lynn	Havre	Regent	02/01/2013
Pease, Janine	Poplar	Regent	02/01/2011
McLean, Angela	Anaconda	Regent	02/01/2016
EX-OFFICIO NON-VOTING MEMBERS			
Juneau, Denise	Superintendent of Public Instruction		
Schweitzer, Brian	Governor		
Stearns, Sheila	Commissioner of Higher Education		

None of the members of the Board of Regents are employees of Montana Tech. Regents receive a per diem of \$50.00 per day for days spent attending board or committee meetings.

6.B.2 The board acts only as a committee of the whole. No member or subcommittee of the board acts in place of the board except by formal delegation of authority.

The Board of Regents has four *standing committees*, an *oversight committee*, and two *councils*, as shown in Table 6.B.II

SELF-STUDY 2010

TABLE 6.B.II: REGENTS COMMITTEES

STANDING COMMITTEES (PROVIDED BY <u>ARTICLE VII OF THE BYLAWS OF THE BOARD OF REGENTS (BOR)</u>)	
COMMITTEE	MEMBERSHIP
Academic and Student Affairs	Four members of the BOR
Administrative, Budget, and Audit Oversight	Three members of the BOR
Staff and Compensation	Four members of the BOR
Workforce, Research, and Economic Development	Three members of the BOR
OVERSIGHT COMMITTEE AND COUNCILS	
Montana Family Education Savings Program Committee	One representative each from the BOR, the Office of the State Auditor, the Office of the State Treasurer, and four appointed members
General Education Council	Established by the BOR in Policy 301.10, Section 3F: twelve members appointed by the BOR
Two-Year Council	<p>Established by the BOR; members consist of:</p> <ul style="list-style-type: none"> -From each MUS College of Technology: Dean*, academic or student affairs professional representative, faculty representative, and student representative -From each MUS Community College: President*, academic or student affairs professional representative, faculty representative, and student representative -From each MUS college with a two-year program: Chancellor*, academic or student affairs professional, faculty representative, and student representative -From each non-MUS (tribal) college: President*, academic or student affairs professional representative, faculty representative, and student representative -Director of Two-Year Education and Workforce Development* <p>*Voting members; one of the student representatives will also be a voting member</p>

The Board of Regents acts as a committee of the whole in that all action items voted on by the Board are approved/disapproved by a majority vote. More information concerning the Board of Regents can be found at their [webpage](#).

6.B.3 The duties, responsibilities, ethical conduct requirements, organizational structure, and operating procedures of the board are clearly defined in a published policy document.

The duties, responsibilities, organizational structure, and operating procedures of the Board of Regents are defined in its [Montana Board of Regents of Higher Education Policy and Procedures Manual](#). In addition to the requirements of state law, ethical rules for members of the Board of Regents are provided in the [Ethics Standards of Conduct for State Employees](#) published by the Montana Department of Administration, in the [Code of Expectations for the Montana Board of Regents of Higher Education](#), and in Policies 760 and 770 promulgated by the Board of Regents.

6.B.4 Consistent with established board policy, the board selects, appoints, and regularly evaluates the chief executive officer.

The Board of Regents [appoints](#) and [supervises](#) the Commissioner of Higher Education, who serves as the chief executive officer of the entire Montana University System (MUS). Moreover, the Commissioner is reviewed annually by the Board of Regents.

6.B.5 The board regularly reviews and approves the institution's mission. It approves all major academic, vocational, and technical programs of study, degrees, certificates, and diplomas. It approves major substantive changes in institutional mission, policies, and programs.

In accordance with [Policy 219](#), the Board of Regents reviews mission statements of the Montana University System units every three years. The Board of Regents last reviewed Montana Tech's mission statement in 2008 and the Board is currently in the process of reviewing the mission statements of all of the colleges and universities under its purview.

In [Policy 303.1](#), the Board of Regents reserves to itself the approval of all new programs (degrees, majors, minors, options, and certificates), substantive changes in those programs, the delivery of programs in a distance format, changes in organizational structure, and revisions of institutional mission. The policy also specifies that "the amount of review and approval shall be determined by the Level I and Level II procedures adopted by the Board, and that review shall begin with the Academic and Student Affairs Committee of the Board." Level I and Level II proposals are further defined in the [Montana Board of Regents of Higher Education Procedures and Guidelines for Agenda Items](#), which also specifies the information to be provided with the various types of proposals.

SELF-STUDY 2010

6.B.6 The board regularly evaluates its performance and revises, as necessary, its policies to demonstrate to its constituencies that it carries out its responsibilities in an effective and efficient manner.

The Board of Regents regularly evaluates its own performance and modifies its policies accordingly. Representative of this process is adoption of a *strategic plan* for the Montana University System in July of 2008 and further updated in October of 2008. In it, the Board of Regents set the following goals, clearly reflecting the concerns of its constituencies:

Goal I: Increase educational attainment of Montanans;

Goal II: Assist in the expansion and improvement of the economy; and

Goal III: Improve institutional efficiency and effectiveness.

The Commissioner of Higher Education initiated a full review of all Board of Regent Policies in 2008. This process was completed in 2009.

6.B.7 The board ensures that the institution is organized and staffed to reflect its mission, size, and complexity. It approves an academic and administrative structure or organization to which it delegates the responsibility for effective and efficient management.



Board of Regents' (*BOR*) *Bylaws* give the body the responsibility to provide for organizing and staffing each institution for which it is responsible. These BOR Bylaws are located on the Commissioner of Higher Education's website.

6.B.8 The board approves the annual budget and the long-range financial plan, and reviews periodic fiscal audit reports.

The organizational structure of the Montana University System adopted by the Board of Regents is described in the introductory paragraphs of Standard 6. In addition, the administrative and academic organization of each unit is also subject to Board of Regents approval, as are the annual budget, the annual audits, and the long-range strategic plans of each unit. All items that Montana Tech submits to the Board of Regents (academic, budgetary, personnel, etc.) must first be submitted to The University of Montana-Missoula. If the President of The University of Montana – Missoula (who is also President of The University of Montana) approves of Montana Tech's request then the request is forwarded to the Office of the Commissioner of Higher Education. Those items that are not forwarded by the President are usually sent back to the Montana Tech campus for further review and/or modification.

6.B.9 The board is knowledgeable of the institution's accreditation status and is involved, as appropriate, in the accrediting process.

As appropriate, the Board of Regents is informed of and is involved in all the regional and professional or specialized accreditation processes undertaken by its units. In accordance with [*Policy 320.2*](#), accreditation self-study reports and accreditation reports are to be submitted to the Commissioner of Higher Education who, in turn, reports to the Board of Regents.

STANDARD 6.C - LEADERSHIP AND MANAGEMENT

The chief executive officer provides leadership through the definition of institutional goals, establishment of priorities, and development of plans. The administration and staff are organized to support the teaching and learning environment which results in the achievement and of the institution's mission and goals.

6.C.1 The chief executive officer's full-time responsibility is to the institution.

As provided by Board of Regents Policy 205.2.1, the Chancellor is the full-time chief executive officer of Montana Tech and is appointed by the Board of Regents upon the recommendation of the President of The University of Montana. While certain administrative functions are shared by Montana Tech and The University of Montana-Missoula (for example, payroll), only the Chancellor has a direct reporting relationship to the President of The University of Montana.

6.C.2 The duties, responsibilities, and ethical conduct requirements of the institution's administrators are clearly defined and published. Administrators act in a manner consistent with them.

The reporting relationships of all academic, research, administrative, and support functions of Montana Tech are shown in Figure 6.C.1 below.

SELF-STUDY 2010

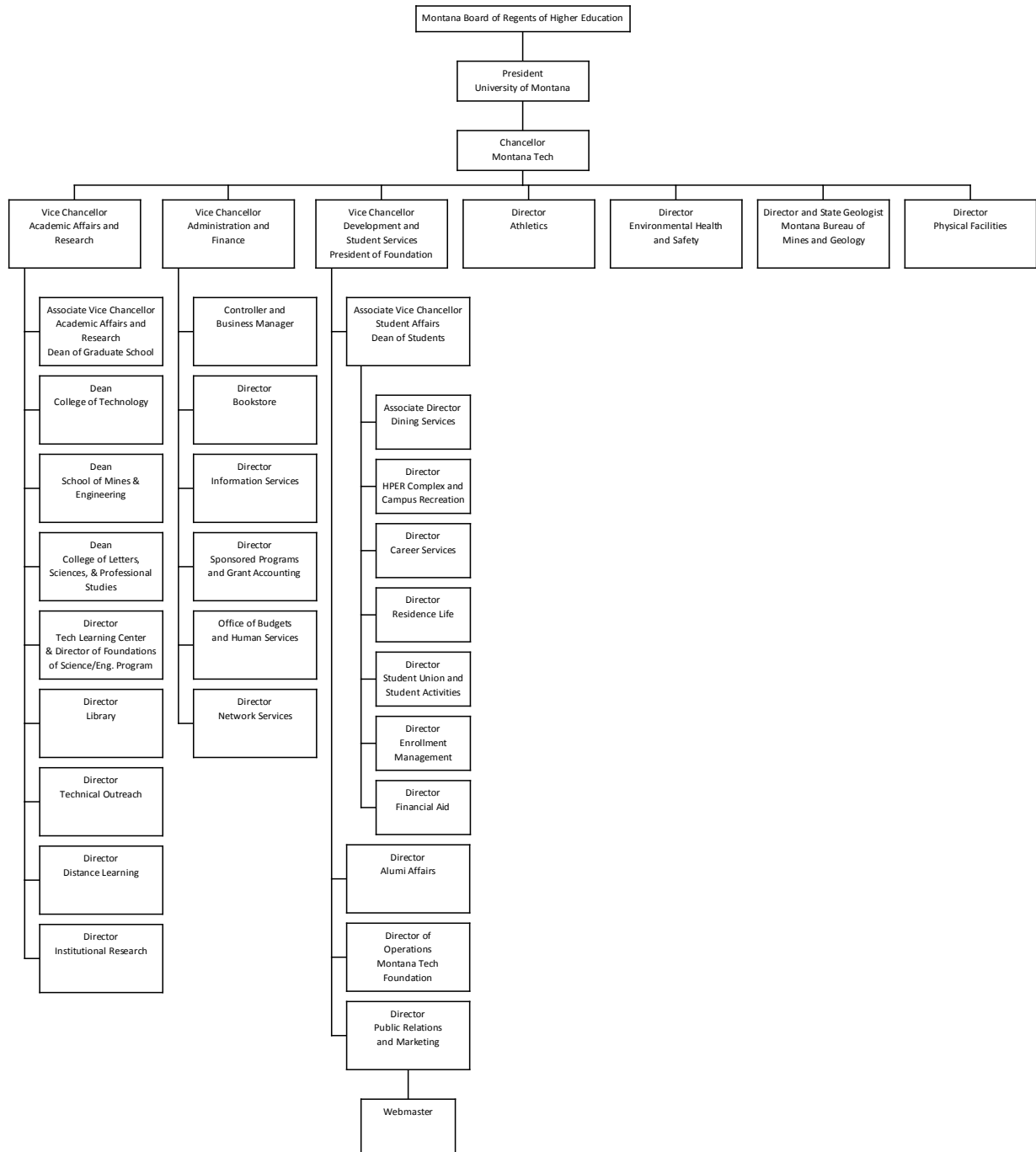


FIGURE 6.C.1 MONTANA TECH ORGANIZATIONAL CHART

The following positions report directly to the Chancellor:

- » Vice Chancellor for Academic Affairs and Research;
- » Vice Chancellor for Administration and Finance;
- » Vice Chancellor for Development and Student Services and President of the Montana Tech Foundation;
- » Director of Athletics;
- » Director of Physical Facilities;
- » Director of Environmental Health and Safety; and
- » Director of the Montana Bureau of Mines and Geology and State Geologist.

The duties and responsibilities of these positions are contained in their respective job descriptions (Exhibit 6.C.I; they are also summarized in Section I, paragraph 107 of the Montana Tech Faculty and Staff Handbook (Exhibit 6.C.II).

A number of boards and committees help the Chancellor discharge his duties and responsibilities:

- » **Executive Committee.** Composed of the Chancellor, the Vice Chancellor for Academic Affairs and Research, the Vice Chancellor for Administration and Finance, the Vice Chancellor for Development and Student Services, and the Controller and Business Manager, this Committee meets as frequently as necessary on both short and long term management issues.
- » **The Chancellor's Cabinet.** The Chancellor's Cabinet is a broad policy development group that serves as an advisory body to the Chancellor. It is composed of the three Vice Chancellors, the two Associate Vice Chancellors, Directors of the Montana Bureau of Mines and Geology, of the Library, and of Environmental Health and Safety, the three academic deans, the Controller, and a representative of the Faculty Senate. Meeting every two weeks to discuss current Montana Tech issues, the Cabinet often develops policy proposals for consideration by other groups.
- » **The Chancellor's Advisory Committee.** The Chancellor's Advisory Committee is a standing committee made up of a broad-based group of faculty, staff, and students. It meets monthly to discuss issues at Montana Tech and thereby provides valuable two-way communication between the Chancellor and various campus constituencies.
- » **The Chancellor's Kitchen Cabinet.** The Kitchen Cabinet is comprised of 10 to 12 members of the faculty chosen at random. Meetings of this group are held as the Chancellor's schedule permits. Conducted in an informal setting, the Kitchen Cabinet's purpose is to provide a mechanism for helping the faculty and staff to know each other better. It is intended that sufficient meetings of this group will be held so as to permit each member of the faculty and staff to meet with the Chancellor at least once each year.
- » **Local Executive Board.** Serving in an advisory capacity to the Chancellor, this group is established by Montana law and implemented by Board of Regents [Policy 217.1](#). The Board consists of three individuals appointed by the Governor.

SELF-STUDY 2010

Academic functions are organized under the direction of the Vice Chancellor for Academic Affairs and Research and are shown in Figure 6.C.2.

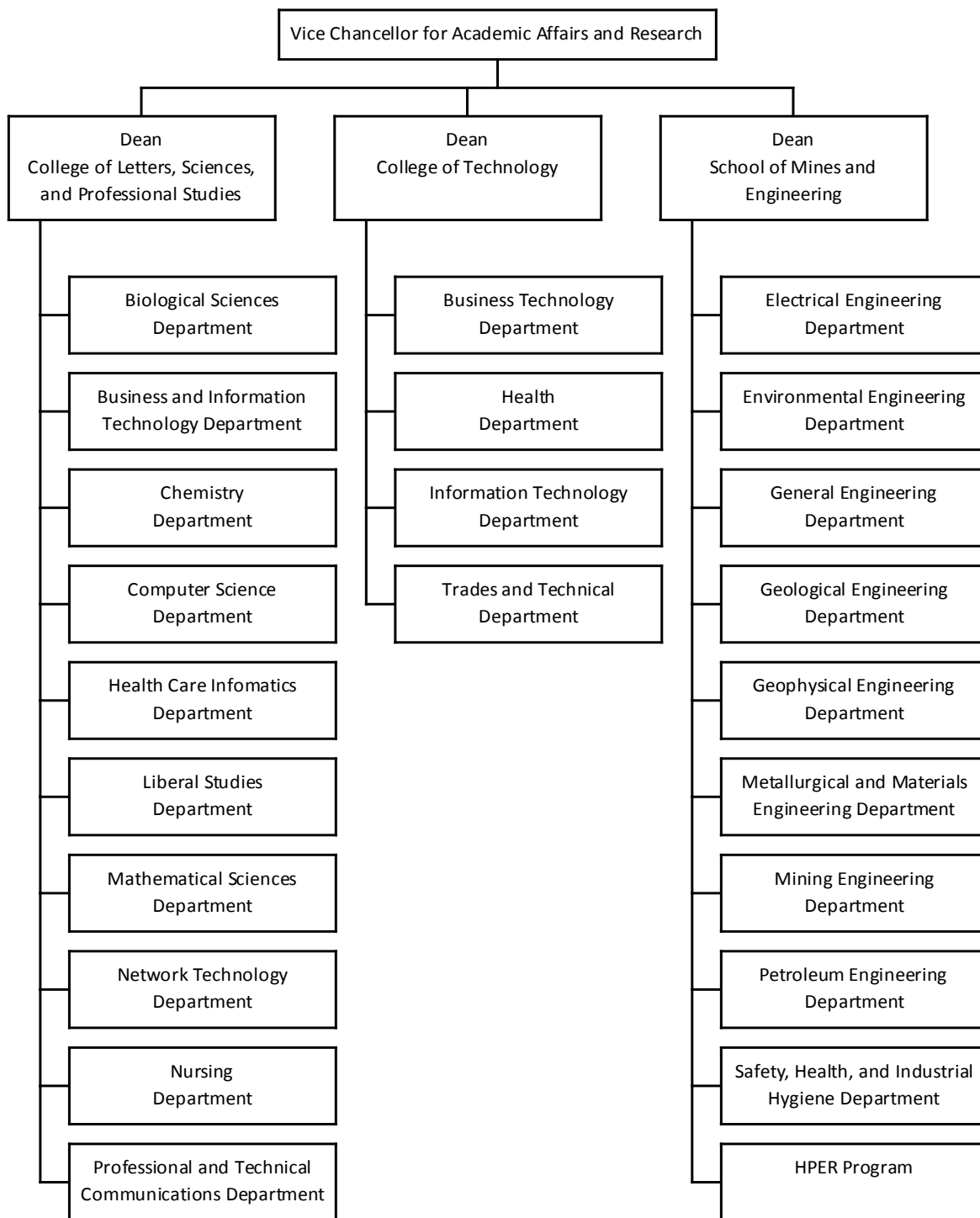


FIGURE 6.C.2 VICE CHANCELLOR FOR ACADEMIC AFFAIRS AND RESEARCH ORGANIZATIONAL CHART

Three specific positions shown in Figure 6.C.2 report directly to the Vice Chancellor for Academic Affairs and Research:

- » Dean of the College of Letters, Sciences, and Professional Studies;
- » Dean of the College of Technology; and
- » Dean of the School of Mines and Engineering.

Duties and responsibilities of deans and department heads are contained in their respective job descriptions (Exhibit 6.C.III); they are also summarized in Section II, paragraphs 223.1 and 223.2 of the *Montana Tech Faculty and Staff Handbook* (Exhibit 6.C.II).

The Vice Chancellor for Academic Affairs and Research receives formal advice and counsel in weekly meetings of the Deans' Council. In addition to the three academic deans, the members of the Deans' Council include the Associate Vice Chancellor for Academic Affairs and Research, the Associate Vice Chancellor of Student Affairs and Dean of Students, and the Director of Enrollment Management.

The Vice Chancellor for Development and Student Services meets every two weeks with the departmental directors within his functional areas. This group serves as the marketing committee for the campus and collectively develops communication and marketing plans for the institution. In addition, every member of the team (all hands) meets once every semester to discuss issues and responds to campus needs.

As a consequence of the diverse nature of the functions reporting to her, the Vice Chancellor for Administration and Finance meets with her direct reports on an as-needed basis, very often daily.

The duties and responsibilities of most the of remaining administrative positions shown in Figure 6.C.2 are described in Section I, paragraph 107 of the *Montana Tech Faculty and Staff Handbook* (Exhibit 6.C.II). The position descriptions are continually reviewed.

As previously noted, certain administrative and support functions are directly provided by The University of Montana, but these functions are usually coordinated or otherwise performed by employees of Montana Tech. Table 6.C.I lists provides examples of these functions:

TABLE 6.C.I: UM FUNCTIONS

FUNCTION	RESPONSIBLE MONTANA TECH FUNCTIONAL AREA
Accounts payable and procurement processing	Finance: Vice Chancellor of Administration and Finance
Architecture and other facilities-related services	Physical Facilities
Bonding, debt service, and other financing-related services	No Montana Tech functional area for this function
Food services	Dining Services
Information technology server and network infrastructure services	Information Services and Network Services
Internal auditing	No Montana Tech functional area for this function
Legal services	No Montana Tech functional area for this function
Payroll processing	Human Resources: Vice Chancellor of Administration and Finance

In addition to the specific duties and responsibilities assigned to each position, all employees of Montana Tech are subject to the provisions of *Ethics Standards of Conduct for State Employees* published by the Montana Department of Administration; members of the faculty are subject to the Faculty Code of Conduct contained in Section II, paragraph 203 of the *Montana Tech Faculty and Staff Handbook* (Exhibit 6.C.II).

Additionally, the Associate Vice Chancellor for Academic Affairs and Research recently completed a campus-wide project in which all faculty members were required to complete Montana Tech's *Conflict of Interest Disclosure Form*.

6.C.3 Administrators are qualified to provide effective educational leadership and management. The chief executive officer is responsible for implementing appropriate procedures to evaluate administrators regularly.

Qualifications of the key administrators of Montana Tech are commensurate with the duties and responsibilities associated with their positions. Performance evaluations are performed annually on all positions.

Table 6.C.II presents brief résumés for the Chancellor and each of the three Vice Chancellors.

TABLE 6.C.II BRIEF RÉSUMÉS OF THE CHANCELLOR AND THE THREE VICE CHANCELLORS

W. FRANKLIN GILMORE, CHANCELLOR			
EDUCATION	BS	1957	Chemistry, Virginia Military Institute
	PhD	1961	Organic Chemistry, Massachusetts Institute of Technology
	Post-Doc	1963-64	Florida State University, Molecular Biophysics
	IEM	1994	Educational Management, Harvard University
PROFESSIONAL EXPERIENCE	1998-present		Chancellor, Montana Tech
	1996-98		Executive Vice President and Vice President for Academic Affairs, Professor of Chemistry, West Virginia Institute of Technology
	1993-96		Vice President for Academic Affairs, Professor of Chemistry, West Virginia Institute of Technology
	1988-93		Chair and Professor of Medicinal Chemistry and Research Professor in RIPS, University of Mississippi
	1979-88		Professor of Medicinal Chemistry and Research Professor in RIPS, University of Mississippi
	1971-79		Chairman and Professor of Medicinal Chemistry and Research Professor in RIPS, University of Mississippi
DOUGLAS M. ABBOTT, VICE CHANCELLOR FOR ACADEMIC AFFAIRS & RESEARCH			
EDUCATION	BS	1985	Petroleum Engineering, Montana College of Mineral Science and Technology
	MBA	1988	Business Administration, The University of Montana
	EdD	2004	Educational Leadership, The University of Montana
PROFESSIONAL EXPERIENCE			Montana Tech:
	2007-present		Vice Chancellor for Academic Affairs and Research
	1997-2007		Dean, College of Humanities, Social Sciences and Information Technology
	1996-2004		Department Head, Business and Information Technology
	2004-present		Professor, Business and Information Technology
	1994-2004		Associate Professor, Business and Information Technology
1988-1994		Assistant Professor, Business and Information Technology	

SELF-STUDY 2010

TABLE 6.C.II BRIEF RÉSUMÉS OF THE CHANCELLOR AND THE THREE VICE CHANCELLORS (CONTINUED)

MARGARET PETERSON, VICE CHANCELLOR FOR ADMINISTRATION & FINANCE			
EDUCATION	BS	1996	Computer Science, Information Systems Option, Montana Tech
PROFESSIONAL EXPERIENCE			Montana Tech:
	2007-present		Vice Chancellor for Administration & Finance
	1997-2006		Director of Budgets and Human Services
	1989-96		Budget Analyst
	1988		Administrative Support
	1979-88		Pension Administrator, Hendrickson, Miller & Associates, Inc., Helena MT
MICHAEL JOHNSON, VICE CHANCELLOR FOR DEVELOPMENT AND STUDENT SERVICES AND PRESIDENT, MONTANA TECH FOUNDATION			
EDUCATION	BS	1990	Business Administration, Montana College of Mineral Science and Technology
	MBA	1997	Business Administration, The University of Montana
	EdD	ABD	Educational Leadership, The University of Montana
PROFESSIONAL EXPERIENCE	2008-present		Vice Chancellor for Development and Student Services, Montana Tech, and President, Montana Tech Foundation
	2006-08		Vice Chancellor for Advancement and Development, and President, Montana Tech Foundation
	2004-present		Assistant Professor, Business and Information Technology, Montana Tech
	2002-04		President and CEO, ELM Locating and Utility Services
	2000-02		Director of Distribution and Customer Services, Montana Power Company
	1994-2000		Director of Division Services, Montana Power Company
	1994-97		Director of Systems, Montana Power Company

Complete résumés of all administrative positions are available in Exhibit 6.C.IV.

6.C.4 Institutional advancement activities (which may include development and fund raising, institutional relations, alumni and parent programs) are clearly and directly related to the mission and goals of the institution.

Established under the laws of Montana in 1967, the Montana Tech Foundation is an independent, not-for-profit corporation which raises funds from private sources for the benefit of Montana Tech and its students. Operating in accordance with a Memorandum of Understanding (Exhibit 6.C.V), the Foundation meets requirements established by

the Board of Regents in [Policy 901.9](#) and qualifies as a charitable organization under the provisions of section 501(c)(3) of the Internal Revenue Code. Links to its Forms 990 are available on its [website](#).

The Foundation is governed by a Board of Directors, which in turn, elects an Executive Committee. The Executive Committee hires a president to serve as the Foundation's chief executive officer. Presently, both the position of Vice Chancellor for Development and Student Services of Montana Tech and the President of the Montana Tech Foundation are held by one individual, under separate employment contracts with each entity. Each entity's governing board (the Board of Regents and the Board of Directors of the Foundation) are fully informed of this arrangement and regularly review its operation.

Priorities for fund raising are set by the Montana Tech Foundation through the Chancellor's Cabinet. Members of the Cabinet solicit needs which, after review and prioritization, are submitted to the Board of Directors by the Chancellor. Many of the priorities established in 2000 are still active objectives (see Exhibit 6.C.VI).

CLOSING THE LOOP

Montana Tech's [Vision 2025](#) document (Exhibit 1.A.VI) provides the reader with information identifying where the campus envisions itself in 15 years. The Montana Tech Foundation has played, and will continue to play, an integral role in securing funds to allow the campus to accomplish its vision. For example, the newest building on the campus, the Natural Resource Building, was completed in late 2009. Without funds raised through the Montana Tech Foundation, the building would not have been completed. The Foundation is currently involved in, among other activities, fundraising efforts to build the proposed University Relations Center.

SELF-STUDY 2010

The Digger Athletic Association, Friends of the Montana Tech Library, Friends of the Mineral Museum, and other independent organizations affiliated with Montana Tech also raise and disburse funds for particular purposes that support Tech's mission. Although the Foundation provides accounting and other recordkeeping services for these organizations, any monies raised by these organizations are not comingled with those of the Foundation. However, whenever activities undertaken by these organizations have the potential of overlapping with those of the Foundation, the involved entities coordinate their respective activities. This is particularly true of the Digger Athletic Association. Both the Director of Athletics, on behalf of the Association, and the Vice Chancellor of Development and Student Services, on behalf of the institution and the Foundation, frequently meet to discuss and resolve matters of mutual concern.

Tech's offices of Alumni Affairs and of Public Relations and Marketing also coordinate their activities with those of the Foundation. The Office of Alumni Affairs is responsible for maintaining relations with alumni and the Montana Tech Alumni Association. The Foundation administers an alumni database that is available to the Office of Alumni Affairs and to other Montana Tech departments. The Office of Public Relations and Marketing publishes the official alumni and Foundation publication, M-News. Copies of M-News are available in Exhibit 6.C.VII.

6.C.5 Administrators ensure that the institutional decision-making process is timely.

Institutional decision-making can take different forms depending on the nature of the decision. Infrequently, the Chancellor may have to act unilaterally because of the exigency of the situation at hand or, if there is time, after consulting with the Executive Budget Committee. However, most issues allow for a more deliberative approach. When this is the case, every effort is made to solicit the views of the faculty and staff, the students, and the public, as may be appropriate in the circumstances. While this process consumes more time, it assures that both the spirit and the letter of the rules described in 6.A.3, 6.D, and 6.E are observed. Oftentimes decisions that must be made by the administration (i.e. budget) are driven by timelines developed by the entity making the request. For example, budget decisions are usually driven by schedules developed by the Governor's office. Additionally, a large number of decisions that affect faculty and staff are driven by timelines identified by the respective collective bargaining agreements or by the Faculty/Staff Handbook.

6.C.6 Administrators facilitate cooperative working relationships, promote coordination within and among organizational units, and encourage open communication and goal attainment.

Montana Tech's administrators recognize the inherent value of good working relationships and promote them in both formal and informal settings. For example, the number of formal standing committees and the number of members on them may, in the opinion of some, be overly large; however, by choosing to have many committees and many members instead of few committees and few members, opportunities

for open communication and for solid working relationships are increased. Several standing committees (including the Chancellor's Advisory Council, the Deans Council, and the Faculty Senate) are significant avenues of two-way communication among the institution's constituencies.

Sponsored by the institution twice each semester, Montana Tech's TGIF gatherings are an example of an informal setting whose purpose is to foster a sense of community and good will among administrators, faculty, and staff. These Friday afternoon sessions help establish a sense of camaraderie among those who attend and frequently attract retirees.

6.C.7 Administrators responsible for institutional research ensure that the results are widely distributed to inform planning and subsequent decisions that contribute to the improvement of the teaching-learning process.

Data obtained through institutional research are made available to all Montana Tech stakeholders. Results of institutional evaluations, student satisfaction surveys, and career placement surveys are made available on the website or in public folders. In recent years, Montana Tech recognized the need to centralize and coordinate the various efforts at creating and distributing institutional research data. To address this need, the position of Director of Institutional Research was created and filled in 2008.

6.C.8 Policies, procedures, and criteria for administrative and staff appointment, evaluation, retention, promotion, and/or termination are published, accessible, and periodically reviewed.

Policies and procedures on appointment, evaluation, retention, promotion, and termination of staff members are published in a series of *guides* published by the Human Resources Division of the Montana Department of Administration. These guides are supplemented by *procedures* and *checklists* available to all stakeholders on Montana Tech's website. To reinforce their importance, Montana Tech's EEO officer meets with members of each search committee at the outset of each search and reviews in detail the rules and procedures to be followed in the hiring process.

Formal processes for evaluation, retention, promotion, and/or termination are also detailed in Sections 206 to 211 of the *Montana Tech Faculty and Staff Handbook*. All policies, procedures, and criteria for these actions were last reviewed in 2009.

6.C.9 Administrators' and staff salaries and benefits are adequate to attract and retain competent personnel consistent with the mission and goals of the institution.

Montana Tech has been fortunate enough to attract and retain capable administrators, faculty, and staff, despite the fact that salaries are approximately only 80 percent of national average for similar positions. Thus, some searches for qualified candidates to fill vacancies have failed. However, both recruiting and retention have been less problematic than might otherwise be expected under such conditions because many candidates and existing employees choose to live in the Greater Butte Area because of other qualities more important to them than salary. Nevertheless, all levels of

SELF-STUDY 2010

management at Montana Tech recognize a pressing need to bring salaries more in line with national averages.

Tables of salaries and benefits for Montana Tech administrators and staff are provided in Exhibit 6.C.VIII.

STANDARD 6.D - FACULTY ROLE IN GOVERNANCE

The role of faculty in institutional governance, planning, budgeting, and policy development is made clear and public; faculty are supported in that role.

Some primary ways for faculty to participate in governance are listed below:

- » Participation in regular faculty meetings;
- » Participation in the Faculty Senate;
- » Participation in committees that influence decisions on the selection, evaluation, promotion, and tenure of members of the faculty;
- » Participation in numerous other committees that influence campus operation; and
- » Faculty Unions: MTFA (North Campus), VTEM (South Campus).

Regular faculty meetings are held at least twice each semester. In addition to general information-sharing, faculty members make decisions on various academic issues, including proposed changes in academic programs that are subsequently submitted to the Board of Regents for approval. Minutes of the meetings are contained in Exhibit 6.D.I.

The Faculty Senate is elected by the members of the faculty. The *mission* statement and *bylaws* of the Faculty Senate, and the *minutes* of its meetings from 1997 forward are available on Montana Tech's website.

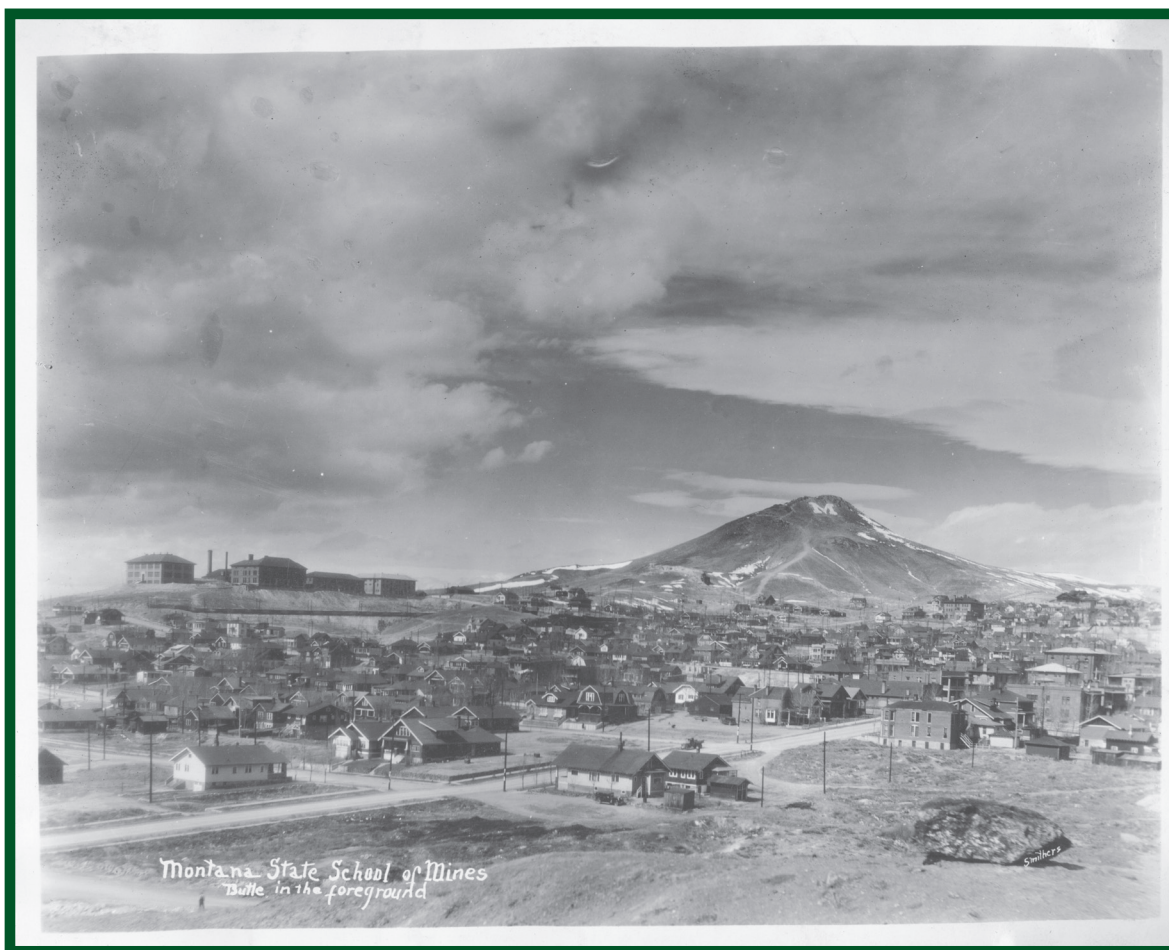
Members of the faculty are highly involved in the selection, evaluation, promotion, and tenure decisions affecting their colleagues. Members of the faculty are almost always a part of search committees for campus positions, particularly when a search pertains to academic affairs. For example, the 1997-1998 search for a Chancellor, three subsequent searches for a Vice Chancellor for Academic Affairs and Research, and a subsequent search for a Vice Chancellor for Institutional Development (now called the Vice Chancellor for Development and Student Services) all had substantial faculty representation.

Faculty involvement in evaluation, promotion, and tenure decisions is detailed in Section II of the Montana Tech Faculty and Staff Handbook. For example, after an applicant's department head and dean have acted on his or her application for promotion or tenure, the Collegiate Evaluation Committee (consisting of faculty members elected from each of the colleges or schools), helps the applicant prepare his or her final application and ultimately submits its recommendation for action on the application to the Vice Chancellor for Academic Affairs and Research. In

addition, Sections 223.1 and 223.2 of the *Montana Tech Faculty and Staff Handbook* call for participation of members of the faculty in the selection and periodic evaluation of department heads and deans.

A union/management committee is employed to handle any issues that the VTEM (South Campus) union may have. This group meets as needed in an attempt to address issues before they reach the grievance stage. Administration has open dialogue with the MTFA (North Campus) union as well.

Faculty have numerous opportunities to participate in governance through standing and ad hoc committees. These committees are charged with recommending or, in some cases, setting policies for the institution. For most committees, individuals are appointed by the Chancellor or by the Vice Chancellor for Academic Affairs and Research. Members of some committees are appointed by the Faculty Senate or by the Associated Students of Montana Tech, while members of a few committees are elected. Table 6.D.I is a list of standing boards, committees, and councils:



SELF-STUDY 2010

TABLE 6.D.I FACULTY GOVERNANCE

SELECTION		COMMITTEE NAME	MEMBERSHIP	
APP'TD	ELECT'D		FACULTY & STAFF	STUD'T
	X	Academic Freedom and Tenure Committee	X	
X		Academic Standards Committee	X	
X		Advising and Retention Steering Committee	X	
X		Athletic Committee	X	X
X		Benefits Committee (MUS Inter-Unit Benefits Committee)	X	
X		Bookstore Advisory Board	X	X
X		Campus Access Committee	X	X
X		Chancellor's Advisory Committee	X	X
	X	Collegiate Evaluation Committee	X	
X		Computer and Telecommunications Advisory Committee	X	X
X		Cultural Events Committee	X	X
X		Curriculum Review Committee	X	X
X		Educational Outreach Advisory Committee	X	
X		Employee Recognition Committee	X	
X		Faculty Advisory Committee for College Relations and Marketing Office	X	
	X	Faculty Senate	X	
X	X	Faculty Service Committee	X	
X		Financial Aid Appeals Committee	X	
X		General Education Review Committee	X	
X		Graduate Council	X	
X		Grievance Committee	X	X
X		Instructional Improvement Committee	X	
X		Library Committee	X	X
X		Motor Pool Committee	X	
X		National Student Awards Committee	X	X
X		Professorship and Faculty Salary Supplement Committee	X	
X		Recycling Committee	X	
X		Research Advisory Committee	X	
X		Safety Committee	X	X
		Salary Advisory Committee		
X		Scholarship and Financial Aid Committee	X	
X		Space Utilization Advisory Committee	X	
	X	Staff Senate	X	
X		Strategic Planning Committee	X	X
X		Student Disciplinary Appeals Committee	X	X
X		Student Union and Activities Advisory Board	X	X
X		Traffic and Parking Committee	X	X
X		Undergraduate Research Committee	X	
X		Web Guidance Committee	X	
X		Wellness Committee	X	

The Montana Tech campus has two faculty unions: MTFA (North Campus) and VTEM (South Campus). North Campus faculty that have earned a Professional Engineer (PE) or Engineer In Training (EIT) certification are not eligible, by Montana Code, to be in the collective bargaining units.

Faculty input into Montana University System issues is provided through the Faculty Senate, by direct input at Board of Regents meetings, and by direct participation in Montana University System committees and councils. For example, many members of the Montana Tech faculty recently participated in system-wide councils which were charged with designing a common course numbering system for the Montana University System.

STANDARD 6.E - STUDENT ROLE IN GOVERNANCE

The role of students in institutional governance, planning, budgeting, and policy development is made clear and public; students are supported in fulfilling that role.

At the highest level, bylaws of the Board of Regents ([Policy 201.7](#)) require appointment of a student member to the Board of Regents. For the 2007-2008 academic year, a Montana Tech student served in that role.

At the campus level, students at both the South and North campuses are self-governed through a single entity, the Associated Students of Montana Tech ("ASMT"). This student-elected body and its officers are governed by the Constitution and Bylaws of the Associated Students of Montana Tech (Exhibit 6.E.I). In addition to appropriating student fees collected for student activities, ASMT appoints students as members of various standing boards, committees, and councils (see Table 6.D.1 in the preceding section). As a matter of course, any proposed policies which impact students are first provided to ASMT for its review and comment prior to adoption. In particular, Board of Regents [Policy 506.1](#) requires that student governments will be allowed to comment on any proposed changes in tuition or fees before such changes are approved by campus administration.

Students at Montana Tech play an active role in search committees. It is a requirement on the campus that all faculty search committees have a student member on the committee. Additionally, students are oftentimes asked to serve on a number of search committees for non-academic positions.

Montana Tech is a student-centered university and the campus values input from students covering a diverse range of topics.

CLOSING THE LOOP

When asked to provide his thoughts on student involvement on the Tech campus, 2008-09 ASMT President Steve Olig wrote:

“The ASMT President is extended virtual walk-in access to all members of the administration. If the students feel a problem needs addressing, their chief advocate has no trouble bringing the problem to campus officials who have the power to implement a solution.

ASMT Presidents are given the privilege of appointing student members to many of the various campus committees. In addition, the ASMT President is a sitting member of the Chancellor’s Advisory Committee, the Strategic Planning Committee, and the Campus Athletic Committee. When necessary, ASMT Presidents are appointed as members select hiring committees or any other committee that is formed to address major changes to campus structure. On occasion, ASMT Presidents have attended Executive Budget Committee meetings whenever they feel a need to know more about campus expenditures or budget proposal and they are given ample time to request special funding when it is available. At other times, ASMT Presidents are provided accurate information regarding campus policy, budgets, future plans, and campus/community issues whenever they request it; their comments, concerns, or suggestions are valued.”

The Office of Student Union and Student Activities promotes and supervises ASMT.

POLICY 6.1 –AFFIRMATIVE ACTION AND NONDISCRIMINATION

Board of Regents Policy 703 on nondiscrimination provides that:

Each campus of the Montana University System shall insure that no employment or educational policy is discriminatory on the basis of race, color, religion, creed, political ideas, sex, age, marital status, physical or mental disability, national origin, or ancestry unless based on reasonable grounds.

As both an educational institution and an employer, Montana Tech of The University of Montana subscribes to the intent, and abides by the letter, of affirmative action, equal employment opportunity, Americans with Disabilities Act, and other laws prohibiting

nondiscrimination. Montana Tech's policy statement on this topic is as follows:

Montana Tech of The University of Montana

Equal Education and Employment Opportunity Policy Statement

It is the policy of Montana Tech to provide equal educational and employment opportunity (EEO) to all persons regardless of race, color, religion, creed, sex, national origin, age, mental or physical disability, marital status, sexual preference, or political belief, with the exception of special programs established by law.

Equal educational opportunity includes admission, recruitment, extracurricular programs and activities, housing, facilities, access to course offerings, counseling and testing, financial assistance, employment, health and insurance services, and athletics. Title IX of the Educational Amendments of 1972 prohibits discrimination on the basis of sex in any education program or activity receiving federal financial assistance by want of grant, contract, or loan.

Montana Tech will take affirmative action (AA) to equalize employment opportunities at all campus levels where evidence exists that there have been barriers to employment for those classes of people who have traditionally been denied equal employment opportunity.

Montana Tech makes a commitment to provide reasonable accommodation to any known disability that may interfere with an applicant's ability to compete in the selection process or an employee's ability to perform the duties of the job.

Montana guarantees employment protection against retaliation for lawfully opposing any discriminatory practice, including filing an internal grievance that alleges unlawful discrimination, filing a union grievance, initiating an external administrative or legal proceeding, or testifying in or participating in any of the above.

The Chancellor has ultimate authority and responsibility for establishing equal employment opportunity as a policy at Montana Tech. The Chancellor pledges to promote and support practices that protect the right of equal employment opportunity.

The designated EEO Officer for Montana Tech is Maggie Peterson. She is responsible for coordinating the campus' EEO/AA program and for resolving application/employee EEO complaints. Maggie's office is in MG 305, and her phone number is 496-4316.

This statement is widely available in both electronic and printed forms, including Montana Tech's website, page 3 of the Montana Tech [2009-2010 Catalog](#), and in a summarized form on page 2 of the [2009-2010 Student Handbook & Calendar](#). It is also a part of the search procedure guidelines.

SELF-STUDY 2010

POLICY 6.2 COLLECTIVE BARGAINING

Board of Regents [Policy 704](#) on labor relations provides that:

The Commissioner of Higher Education, consistent with the provisions of 39-31-301 MCA, is vested with the authority to manage negotiations consistent with applicable law and Board policy.

At July 1, 2009, various groups of Montana Tech employees are represented as shown in the following table; all seven contracts are in negotiation:

TABLE 6.E.I: MONTANA TECH EMPLOYEE LABOR REPRESENTATION

GROUP	REPRESENTED BY	EXPIRATION
Maintenance engineers: Montana Tech of The University of Montana (north campus)	International Union of Operating Engineers, Local #400	06/30/2011
Custodial and maintenance: Montana Tech of The University of Montana College of Technology (south campus)	International Union of Operating Engineers, Local #400	06/30/2011
Certain staff members	Montana Public Employees Association	06/30/2011: Automatically renews from year to year after June 30, 2009 unless one party notifies the other in accordance with the agreement
Certain Montana Tech faculty members	Montana Tech Faculty Association	06/30/2011
Painters	Montana University System Maintenance Painters Union: Automatically renews for two year periods after June 30, 2009 unless one party notifies the other in accordance with the agreement	06/30/2011
Carpenters	Pacific Northwest Council of Carpenters	06/30/2011: Automatically renews from year to year after June 30, 2009 unless one party notifies the other in accordance with the agreement
College of Technology faculty members	Vocational-Technical Educators of Montana	06/30/2011: Automatically renews from year to year after June 30, 2009 unless one party notifies the other in accordance with the agreement

The full contracts are available on the Montana University System website. It is the considered opinion of the campus that the provisions of the foregoing collective bargaining agreements are consistent with the mission of the institution and consequently do not impair its quality or effectiveness

REFERENCED EXHIBITS

- Exhibit 6.A.I Employees of the Office of the Commissioner of Higher Education and their salaries
- Exhibit 6.C.I Job descriptions for Montana Tech administrative positions
- Exhibit 6.C.II *Montana Tech of The University of Montana Faculty and Staff Handbook*
- Exhibit 6.C.III Job descriptions for Montana Tech deans and department heads
- Exhibit 6.C.IV Résumés of individuals in key administrative positions
- Exhibit 6.C.V Memorandum of understanding between Montana Tech and the Montana Tech Foundation
- Exhibit 6.C.VI Status of projects of the Montana Tech Foundation
- Exhibit 6.C.VII M-News
- Exhibit 6.C.VIII Administrative employees of Montana Tech and their salaries
- Exhibit 6.D.I Minutes of faculty meetings
- Exhibit 6.E.I Constitution and bylaws of the Associated Students of Montana Tech

SELF-STUDY 2010

SUPPORTING DOCUMENTATION FOR STANDARD SIX

REQUIRED DOCUMENTATION

1. Board and committee membership with a brief ground statement on each board member, including term(s) of office and compensation (if any) for board service. Indicate which board members, if any, are employees.
 - » *Board of Regents board members and biographical data* (see 6.I)
 - » *Board of Regents committees* (see 6.II)
2. Organization charts or tables, both administrative and academic, including name of office holders with a notation of any changes since the last accreditation visit.
 - » Organization chart—administrative (see Figure 6.C.1)
 - » Organization chart—academic (see Figure 6.C.2)
 - » Office holders and changes since last accreditation visit (see Figure 6.C.3)

REQUIRED EXHIBITS

1. Articles of incorporation and bylaws
 - » *Constitution of the State of Montana* (see Exhibit 6.R.I)
 - » *Montana Code Annotated Section 20-25-301* (see Exhibit 6.R.II)
 - » *Montana Code Annotated Section 20-25-302* (see Exhibit 6.R.III)
 - » *Bylaws of the Montana Board of Regents of Higher Education* (see Exhibit 6.R.IV)
2. Board policy manual, together with the agenda and minutes of the last three years of meetings.
 - » *Montana Board of Regents of Higher Education Policy and Procedures Manual* (see Exhibit 6.R.V)
 - » *Board of Regents meeting agendas* (see Exhibit 6.R.VI)
 - » *Board of Regents meeting minutes* (see Exhibit 6.R.VII)
3. Administrative policy manuals.
 - » *Montana Board of Regents of Higher Education Procedures and Guidelines for Agenda Items* (see Exhibit 6.R.VIII)
 - » *Montana Tech Faculty and Staff Handbook* (see Exhibit 6.R.IX)
4. Administrative position descriptions.
 - » *Board of Regents Policy 205.2, Duties and Responsibilities of a President in the Montana University System* (see Exhibit 6.R.X)
 - » *Board of Regents Policy 205-2-1, Duties and Responsibilities of a Chancellor in the Montana University System* (see Exhibit 6.R.XI)
 - » *Montana Tech Faculty and Staff Handbook* (see Exhibit 6.R.IX)
5. Staff handbook.

6. List of currently active committees and task forces with names and on-campus phone numbers of committee or task force chairs.
 - » Exhibit 6.C.II, Appendix A of the Montana Tech Faculty and Staff Handbook
 - » Exhibit 6.D.II, “Montana Tech Committee Roster 2009-2010 (October Final)”
 - » Montana Tech Faculty and Staff Handbook
7. Salary data (including ranges if applicable) and benefits for administration and staff.
 - » Exhibit 6.C.VII.
8. In multi-college systems, organization charts of central office, description of functions of central office personnel and their relationships to institutional personnel, and administrative or policy manuals of the system.
 - » Organization Chart of the Office of the Commissioner of Higher Education (see Exhibit 6.R.XII)
 - » Board of Regents Policy 204.2, Appointment of the Commissioner of Higher Education (see Exhibit 6.R.XIII)
 - » Board of Regents Policy 204.3, Duties and Responsibilities of the Commissioner of Higher Education (see Exhibit 6.R.XIV)
 - » Policies and Procedures for Employees of the Office of the Commissioner of Higher Education (see Exhibit 6.R.XV)
9. Collective bargaining agreements, if any.
 - » Collective bargaining agreements (see Exhibit 6.R.XVI)
10. Constitutions or bylaws of faculty and staff organizations, with minutes of meetings, for the last three years.
 - » Faculty Senate mission statement, bylaws, and meeting minutes (see Exhibit 6.R.XVII)

SUGGESTED MATERIALS

1. Reports to constituencies, including the public.
 - » See Exhibit 6.IV
2. Charter or constitution of student organization.
 - » Exhibit 6.E.I.

STANDARD 7 - FINANCE



STANDARD 7.A - FINANCIAL PLANNING

7.A.1 Governing boards and, where applicable, state agencies have given the institution appropriate autonomy in financial planning and budgeting matters within overall mandates and priorities.

The governance and control of the Montana University System (MUS) is vested exclusively in the Montana Board of Regents of Higher Education, which has full power, responsibility, and authority to supervise, coordinate, manage, and to control the entire Montana University System. The MUS consists of two flagship campuses, The University of Montana in Missoula, and Montana State University in Bozeman. Both of these campuses have three affiliated campuses, of which Montana Tech is an affiliated campus of The University of Montana. In addition, the Board of Regents exercises programmatic oversight of Montana's three community colleges.

The President of a unit of the Montana University System is the chief executive officer at that unit and is vested with the responsibility of administering board policies under the supervision and control of the Commissioner of Higher Education. Each president is under the direction of and is responsible to the Commissioner of Higher Education. Presidents are appointed by the Board of Regents upon the advice and recommendation of the commissioner.

A chancellor is under direction of and is responsible to the president of the affiliated university. Chancellors are appointed by the Board of Regents upon the advice and recommendation of the appropriate university President and the Commissioner. The chancellor is the chief executive officer who is responsible for management of a four-year campus affiliated with a university. The chancellor provides leadership and coordination for all campus activities, including academic, fiscal, and student affairs.

The Executive leadership for the Montana Tech campus includes the Vice Chancellor for Academic Affairs and Research, the Vice Chancellor for Administration and Finance, and the Vice Chancellor for Development and Student Services. Also included in the executive management team is the Controller. Collectively, this group of administrators works closely with the Chancellor to focus on the college's goals and to meet overall mandates and priorities in planning and budgeting.

When discussing financial planning, it is important to note that the Montana University System is first allocated a lump sum appropriation on a biennial basis which, in turn, is then allocated among the campuses. The Office of Commissioner of Higher Education works with representatives from all of the eleven campuses of the Montana University System to determine how that appropriation is allocated, based on numerous variables that include enrollment projections, staffing levels, and anticipated increases in operating expenses.

It is within this structure that Montana Tech is provided with appropriate autonomy in financial planning and budgeting matters. Montana Tech creates a biennial budget request that allocates resources which are based on inflationary factors established

SELF-STUDY 2010

at the system level and tied to any constraints facing the Montana University System during that given biennium. The allocation at the campus level are determined by the Executive Budget Committee which is composed of the Chancellor, Vice Chancellors, and the Controller. The Executive Budget Committee solicits input from the various academic deans, department heads, and directors to develop the annual current unrestricted budget.

In addition to the current unrestricted budget, Montana Tech also creates annual budgets for auxiliary, designated, loan, restricted, and plant funds. These budgets are developed on the basis of projected revenues from student fees or third parties and on the estimated expenditures associated with those revenues.

All fund group budgets are submitted to the Board of Regents for approval at the September board meeting.

7.A.2 The institution demonstrates that financial planning for the future is a strategically guided process. This planning includes a minimum of a three-year projection of major categories of income, specific plans for major categories of expenditures, and plans for the management of capital revenue and expenditures. Short and long-range capital budgets reflect the institution's goals and objectives and relate to the plans for physical facilities and acquisition of equipment.

There are two principal administrative campus groups which not only develop operational plans but which also recommend priority expenditure of institution financial resources in support of these plans. The Academic Deans Council provides input or advice, through the Vice Chancellor for Academic Affairs and Research, to the Executive Budget committee. The Executive Budget Committee relies on the Academic Deans Council and several other groups for input and advice when developing plans. These plans, which generally consider two to three-year periods of time, are in accord with the institution's mission and vision and are tied to the campus priorities established by the institution's leadership.

Montana Tech has very clear vision and mission statements:

Mission Statement

To meet the changing needs of society by supplying knowledge and education through a strong undergraduate curriculum augmented by research, graduate education and service.

Vision Statement

To be a leader for undergraduate and graduate education and research in the Pacific Northwest in engineering, science, energy, health, information sciences and technology.

Montana Tech also has clear guiding principles which are as follows:

- » To honor our heritage as a premier engineering institution;
- » To attract and educate motivated and capable students;
- » To provide a quality education that blends theory with practice;
- » To recruit, encourage, and enable faculty to develop regional and national reputations in teaching and research;

- » To collaborate with others to serve the needs of the community, the State of Montana, and the Nation.

The current strategic plan for Montana Tech has defined six main goals:

- » Goal #1 – Sustain and Enhance the Quality of All Academic Programs
- » Goal #2 – Advance the Reputation for Quality and Value
- » Goal #3 – Enhance Research and Scholarly Activities
- » Goal #4 – Enhance Relationships with Business and Industry
- » Goal #5 – Enhance Educational Access and Opportunities
- » Goal #6 – Increase Enrollment to 2,688 (FTE) by 2012

Each goal has a separate list of specific objectives and success indicators that define how the goal will be reached. All operational financial plans must support this strategic plan. A full copy of the strategic plan is presented in Exhibit 7.A.I, [*Montana Tech Strategic Plan*](#).

A strategic planning committee looks at larger, long-term visions for the institution. The institution has renewed its formal, campus-specific strategic planning activities and refined them into a document, [*Montana Tech Vision 2025*](#), listed in Exhibit 7.A.II. This document is specific for the Montana Tech campus. The Board of Regents actively develops a broader plan for the entire Montana University System. The strategic plan for Montana Tech and the long range vision are also developed to help achieve the goals of the [*Board of Regents' Strategic Plan*](#), presented in Exhibit 7.A.III. The main goals of this plan are increasing the educational attainment of Montanans, assisting in the expansion and improvement of the economy, and improving institutional efficiency and effectiveness.

The Chancellor's Cabinet, which is composed of the Vice Chancellors, the Deans, the Director of the Montana Bureau of Mines and Geology, a faculty senate representative, a staff senate representative, and senior staff members, serves as the primary advisory group to the Chancellor and Vice Chancellors. This Cabinet is an important clearinghouse for all proposals and initiatives that have campus-wide interest and fiscal impact. Strategic planning activities are ultimately considered by the Cabinet on the path to executive decisions. Other advisory groups tied directly or indirectly to this process of campus deliberation include the student government, the Faculty Senate, the Staff Senate, and the faculty assembly. Major financial considerations are part of on-going and major institutional planning activities and are generally discussed with the many constituent groups both on and off campus.

Two-year planning processes for educational and general programs begin when the campuses work with the Deputy Commissioner for Fiscal Affairs from the Office of the Commissioner of Higher Education on funding strategies for each legislative



SELF-STUDY 2010

session. Topics addressed include funding model revisions, tuition projections, distance learning, enrollment projections, and pay plans. The Vice Chancellor for Administration and Finance at Montana Tech is responsible for submitting the biennium budget request. As a part of this budgeting process, each campus has the responsibility to prepare and justify the biennium budget request. After discussions and occasional compromises with the Office of Budget and Program Planning, Tech's biennium budget request becomes a part of the Governor's Executive Budget Request. In November of the year prior to the legislative session, the Governor's Executive Budget is presented to the members of the House and Senate. Exhibit 7.A.IV [The Governor's Executive Budget Request](#) and Legislative Budget Analysis set forth a balanced financial plan for all of Montana state government for the biennium. During the legislative session, the Office of the Commissioner of Higher Education and the Montana University System work collaboratively with both the Governor's Office and the legislature to obtain adequate funding for the entire Montana University System.



The Montana University System receives a biennial lump-sum appropriation from the legislature for the current unrestricted portion of operating funds. The Office of the Commissioner of Higher Education, under the authority of the Board of Regents, appropriates funds for the biennium. Allocations are made to individual campuses based on an institutional base level funding provided in the prior biennium, plus any present law adjustments (e.g. pay plan annualization or inflationary factors for specific operating expenses such as utilities or travel). These present law adjustments are presented individually for consideration. Any addition of staff or new program expenses are presented separately as decision packages for legislative consideration. This budgeting model varies from the previous funding model that was based on projected full-time equivalent students (FTE's). This change in budgeting philosophy was intended to ensure a base level of funding for institutions in the Montana University System in the face of anticipated reduction of graduating high school seniors in the state.

Capital planning for the institution is funded primarily through three sources: 1) the State of Montana Long Range Building Program (LRBP), 2) Auxiliary funds, and 3) student fees.

1. State of Montana Long Range Building Program:

The LRBP focuses on major building projects, renovation projects, and on maintenance projects. It is the primary mechanism through which the Montana University System and all other state agencies request state-funded building projects from the Montana Legislature. Requests for the Montana Tech campus are compiled by the Director of Physical Facilities who works in collaboration with the Chancellor, the Vice Chancellor for Administration and Finance, and with the Vice Chancellor

for Academic Affairs and Research. In this process, careful consideration is given to the needs identified through the various committees. A prioritized campus list is submitted to The University of Montana system committee for prioritization with the other three campuses, as shown in Exhibit 7.A.V – [Long Range Building Project Priority List](#). The outcome of that process is integrated or prioritized with those of the Montana State University campuses, and the final list is submitted to the Board of Regents for review and approval prior to being submitted to the Department of Administration for legislative action.

All Montana University System building projects are integrated with those of other state agencies and submitted to the legislature. The Montana Legislature approves, changes, or disapproves the LRBP and the associated funding for approved projects. This funding may come from a variety of sources including state capital appropriations, campus contributions (e.g. donor funding, allocation of campus reserves), or the issuance of bonds.

During the last two biennia, Montana Tech received state funding for educational and general buildings to manage deferred maintenance, Americans with Disability Act (ADA) accessibility modifications, and roofing projects. A summary of approvals for the Montana University System is included in Exhibit 7.A.VI – [Long Range Building Program Approvals](#). In addition, Montana Tech received some state funding to construct the Natural Resources Building on the North Campus. This building is the first new academic building in 20 years. The \$17.4 million project was funded from a variety of sources including state support (\$9 million – HB 540 59th Legislature, \$5.2 million – HB 4 60th Legislature), sale of real property (\$.2 million), transfer of current unrestricted funds (\$.5 million), auxiliary parking funds (\$.3 million), private support (\$2 million), and Montana Tech indirect cost recovery support (\$.2 million). The building was completed in December, 2009.

The campus is also scheduled to receive approximately \$2.1 million from stimulus funds for an assortment of energy projects which include T5 lighting, energy efficient windows, and HVAC upgrades.

2. Auxiliary Funds:

Auxiliary building projects are often funded by proceeds from the issuance of bonds. The affiliated campuses of The University of Montana collectively issue bond instruments which are cross-pledged and administered by The University of Montana – Missoula campus.

Bond payments are typically funded by revenue from auxiliary enterprises, land grant income, and from building fees. A debt-service plan is first created for the life of the bonds prior to their issuance in order to ensure that the campus can meet its future repayment obligation. Excess auxiliary funds are deposited into plant funds to pay for renovation and maintenance of auxiliary buildings or to purchase equipment.

SELF-STUDY 2010

Montana Tech maintains an *Auxiliary Projects Plan* (Exhibit 7.A.VII) for both short and long term goals for capital improvements to auxiliary facilities.

3. Student Fees:

In addition to supporting bond payments, student fees are also used to pay for capital classroom equipment. Student Equipment Fee accounts at both the North and South campuses are designated to purchase capital equipment. Every year, the Vice Chancellor for Academic Affairs & Research contacts the academic deans and department heads for capital equipment requests. Based on estimated revenue projections, the requests are compiled and prioritized by the Deans.

Campuses affiliated with The University of Montana issued bonds for educational and general classroom and laboratory improvements on campus. To pay this debt, students are assessed an academic facilities fee. This student fee was originally implemented with the understanding that any fee revenues generated would be used to repay the debt associated with classroom and laboratory renovations, and that any annual excess revenues would be dedicated to further classrooms/laboratories improvements.

Capital investments and projects are summarized in Table 7.A.I.

TABLE 7.A.I CAPITAL INVESTMENTS

	ACTUAL			PROJECTED		
	FY07 YEAR 1 AMOUNT	FY08 YEAR 2 AMOUNT	FY09 YEAR 3 AMOUNT	FY10 YEAR 4 AMOUNT	FY11 YEAR 5 AMOUNT	FY12 YEAR 6 AMOUNT
Land						
Beginning Book Value	1,211,857	1,211,857	1,519,005	1,519,005	1,519,005	1,519,005
Additions		307,148		-		
Deductions		-		-	-	-
Ending Book Value	1,211,857	1,519,005	1,519,005	1,519,005	1,519,005	1,519,005
Buildings						
Beginning Book Value	27,737,885	26,014,855	25,665,512	26,128,545	26,128,545	26,128,545
Additions	98,600	1,676,579	2,344,803			
Deductions	(1,821,630)	(2,025,921)	(1,881,770)	-	-	-
Ending Book Value	26,014,855	25,665,512	26,128,545	26,128,545	26,128,545	26,128,545
Furniture, Equipment & Software						
Beginning Book Value	4,425,142	4,171,230	4,984,384	5,096,847	5,096,847	5,096,847
Additions	1,072,784	3,418,744	216,265			
Deductions	(1,326,697)	(2,605,589)	(103,802)			
Ending Book Value	4,171,230	4,984,384	5,096,847	5,096,847	5,096,847	5,096,847
Construction in Progress						
Beginning Book Value	100,335	309,043	467,774	1,997,181	1,997,181	1,997,181
Additions	208,708	470,493	1,591,308			
Deductions	-	(311,762)	(61,901)			
Ending Book Value	309,043	467,774	1,997,181	1,997,181	1,997,181	1,997,181

SELF-STUDY 2010

Table 7.A.II summarizes and categorizes past and future building projects

TABLE 7.A.II: MAJOR CAPITOL PROJECTS SINCE 2000

PROJECT	STATUS	TOTAL AMOUNT	FUNDING SOURCE
100 Bed Residence Hall	C	4,200,000	Series D 1996 Revenue Bonds
Classroom Lab Renovations	C	1,013,641	Series D 1996 Revenue Bonds
Student Union/Phas II	C	1,224,634	Series E 1998 Revenue Bonds
Apartment Housing Renovation	C	600,000	Series E 1998 Revenue Bonds
Classroom Lab Renovations	C	214,000	State Funds
Boiler Upgrade	C	400,000	State & Auxiliary Funds
Roof Replacements	C	408,000	State Funds
ADA Restrooms	C	188,000	State Funds
Residence Hall Sprinkler Syst's	C	590,593	State & Auxiliary Funds
HPER Project Dreams	C	608,256	State, Private, & Fd'tion Funds
System Improvements - COT	C	1,426,335	State Funds
Data Center Renovation	C	451,312	State Funds
One Stop Shop Renovation	C	147,110	State Funds
Montana Tech Greenhouse	C	172,569	State Funds
Natural Resources Building	C	17,400,000	Priv, Fed, Fd'tion IDC, St Funds
MG HVAC/Windows/Lighting	A	2,185,300	State Funds
Health Sciences Bldg Remodel	A	6,000,000	State Funds, \$3M approved
Library Renovation Project	A	5,000,000	State Funds
Main Hall Renovations	A	20,000,000	State Funds

C = Completed
 UW = Underway
 A = Anticipated

7.A.3 The institution publishes an annual budget distributed to appropriate constituencies, and the policies, guidelines, and processes for developing the budget are clearly defined and followed. Budget revisions are made promptly, and, when necessary, a revised budget or schedule of budget changes is developed and distributed to appropriate constituencies.

After computation of Montana Tech's portion of the MUS lump sum distribution, the internal resources allocation process begins. Montana Tech's Executive Committee (Chancellor, Vice Chancellor for Academic Affairs and Research, Vice Chancellor for Administration and Finance, Vice Chancellor for Development and Student Services) meets with the managers (Deans, Department Heads, Department Chairs, Program Managers and Directors) in forums designed to address each individual department's need for the upcoming fiscal year. Each manager is provided with a [Budget Planning](#)

Template (Exhibit 7.A.VIII) which delineates the current fiscal year's budget and provides space on the template to request anticipated needs for the next fiscal year. One-time-only (OTO) proposals are presented as part of the budget request. OTO requests allow the campus quick turnaround in allocating and spending funds in the event that revenues exceed estimates. Any information gathered from these meetings leads to better decisions on allocating available resources during the budget development process. In addition, every two years, departments are asked to assess any need for increases in course/program fees. In this process, every effort is made to maximize input, enhance communication, and increase efficiency. This approach assures fiscal control and responsibility and promotes transparent accountability

Once managers have had an opportunity to be heard, Montana Tech's Executive Committee approves a balanced Internal Operating Budget (Exhibit 7.A.IX). Budget allocations are made to each department's various responsibility centers or indexes. The Associate Director of Budgets and Human Services distributes copies of the appropriate section of the budget to each manager. All managers have access to the UM data warehouse to track budget allocations, expenditures and revenues. A variety of reports are available through this data warehouse. Deans, Department Heads, Program Managers and Directors are responsible for managing their own operating expenditures.

Montana Tech's approved internal operating budget and other fund group budgets are submitted annually to the Office of the Commissioner of Higher Education for its September board meeting. The Office of Commissioner of Higher Education also publishes annual operating budgets for all campuses on the system website as shown in Exhibit 7.A.X – Montana University System Operating Budgets (CHE), and the Board of Regents approves the individual campus operating budgets. In addition to the campus budget, the current unrestricted portion of Montana Tech's budget is published in Exhibit 7.A.XI – The University of Montana Budget Book. The budget book includes all State appropriated, auxiliary, and designated budgets for all affiliated campuses and agencies.

Throughout the year, budget control and variance reports incorporating projected revenues and expenditures are submitted to Tech's Executive Budget Committee. An example of one of these reports is Exhibit 7.A.XII – Montana Tech Comparative Summary of Revenue and Fund Balance Projection. The Executive Budget Committee approves any additions, deletions, and modifications to Tech's operating budget. The BOR or its designee approves increased spending authority due to excess tuition and other revenue. The Associate Director of Budgets and Human Services takes appropriate action to ensure that the budget is amended and balanced in a manner consistent with formal policies and procedures.

SELF-STUDY 2010

7.A.4 Debt for capital outlay purposes is periodically reviewed, carefully controlled, and justified, so as not to create an unreasonable drain on resources available for educational purposes. The institution has a governing board policy guiding the use and limit of debt.

Payment of the bonds comes from pledged net auxiliaries revenues, land grant income, student fees, and from investment income. The Net Pledged Revenues from all four campuses of The University of Montana are co-mingled and cross-pledged, and a yearly Facilities Improvement and Refunding Revenue Bonds Audit is prepared by independent auditors. The Debt Service Coverage required by the indenture is 1.15 percent, and based on the yearly bond audit completed June 30, 2008, actual coverage was 2.16 percent.

With representation from each campus, a debt-management team developed a Debt Management Financial Plan. This team meets annually to review the plan status. In accordance with the plan, a fixed reserve fund and a debt buy down fund with yearly deposits were created for future maintenance costs and for possible future call privileges. These funds are accounted for at the Missoula campus. As of June 30, 2009, the planned fund balance targets were met.

After meeting bond lien requirements, the Bond Indentures allow campuses to use the balance of Pledged Revenues for any lawful expenditures. Montana Tech is currently meeting or exceeding the revenue necessary to meet the bond lien requirements.

Intercap Loans are available from the Montana Board of Investments through an Intercap Loan Program. This program lends low cost money to Montana local governments and state agencies, including the University system, for various purposes. The current Intercap Rate is 3.25%. Recently, a Loan Application was submitted for a three million dollar project – Renovate and Design and Construct Expansion to the Health, Physical Education, and Recreation (HPER) Building. An applicable Item has been approved by the Board. A new student fee, approved by the Board to pay for the loan, will be implemented in the Fall 2010 Semester. This loan was approved by the Board of Investments in February 2010.

Mandatory student fees for both North and South campuses are approved biennially by the Board of Regents and include computer and technology fees. These funds are used for computer and technology operations, related enhancements, and for any related Intercap Loan Payments.

In addition, an academic facilities fee is assessed. Part of this fee is a system fee and funds educational and general classroom/lab improvements on a system priority basis. Any fees left over from paying Tech's bond debt remain on campus to support classroom/laboratory improvements so as not to create an unreasonable drain on resources available for educational purposes. Current unrestricted funds, including state appropriated general and educational funds, are not used for debt outlay.

STANDARD 7.B - ADEQUACY OF FINANCIAL RESOURCES

7.B.1 The institution provides evidence that it seeks and utilizes different sources of funds adequate to support its programs and services. The commitment of those resources among programs and services reflects appropriately the mission and goals and priorities of the institution.

The FY10 Montana Tech annual operating budget for all fund types is just under \$57 million. This operating budget includes \$26,109,637 in general funds, \$12,506,790 in restricted funds, \$6,077,057 in designated funds, \$4,968,159 in auxiliary funds and \$6,996,416 in plant funds (Figure 7.B.1).

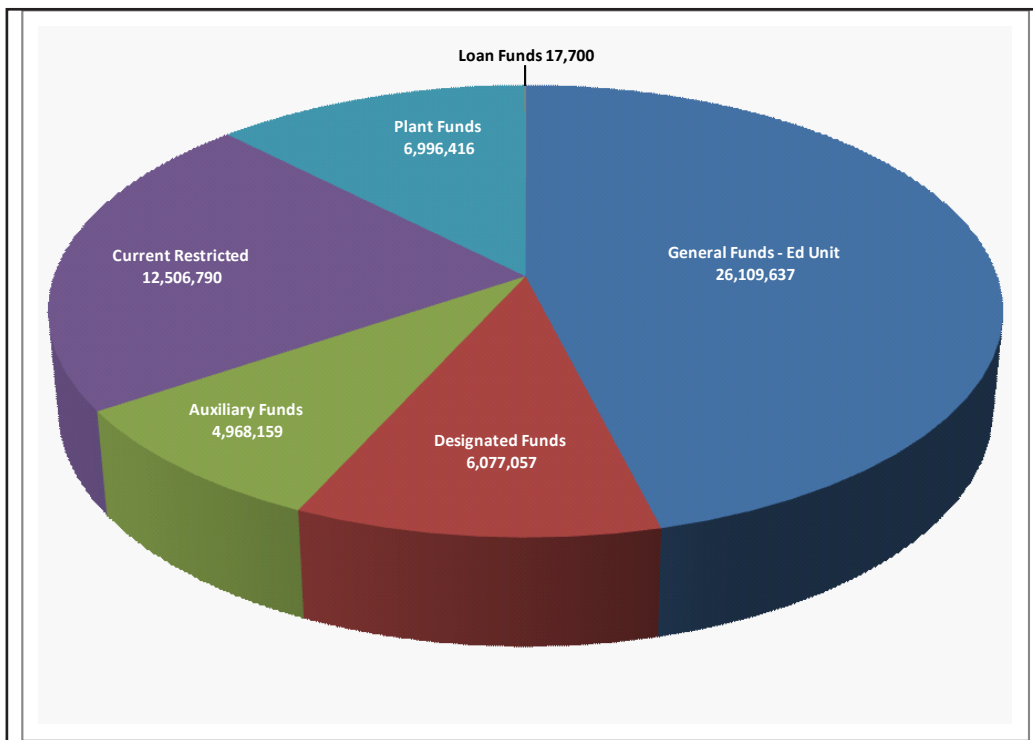


FIGURE 7.B.1
MONTANA TECH OPERATING BUDGET ALL FUNDS – FY10

SELF-STUDY 2010

General funds are used to complete the educational mission of Montana Tech. The main components of the general fund revenue budget are tuition/fees, state appropriations, and millage. Approximately 48% of general fund revenues are provided through student tuition and fees (Figure 7.B.2).

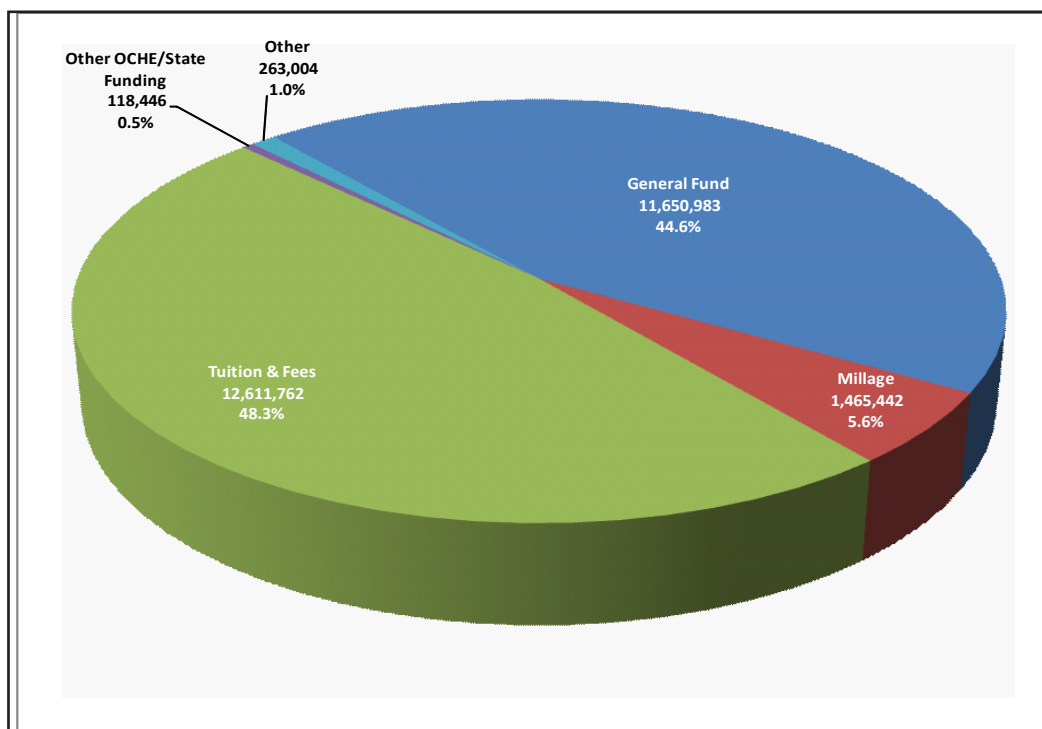


FIGURE 7.B.2
MONTANA TECH GENERAL FUNDS REVENUE SOURCES – FY10

For much of the past decade, there has been a decrease in the amount state appropriations represent as a part of the education and general operating budget. This trend has increased the burden placed upon students by increasing tuition to compensate for lost state appropriation revenue. However, the current gubernatorial administration has endeavored to keep higher education affordable for Montana residents. Consequently, for Fiscal Years 2006 – 2009, the Montana University System, including Montana Tech, kept its tuition and fees flat for Montana residents. In order to accommodate holding tuition flat, additional general funds were allocated by the legislature to help the campuses in covering present law base adjustments such as inflation.

During the current biennium (FY10 – FY11), considerable attention was given to the balance between student affordability and the current economic reality of reduced state tax revenues. Once again, the decision was made to hold resident tuition constant for Montana Tech and implement a modest tuition increase for non-resident students of 4% in FY10 and 2% in FY11. A budget was developed based on this assumption, and budget

highlights are presented annually to the Board of Regents. A copy of this presentation is listed in Exhibit 7.B.I – [*Montana Tech FY10 Board of Regents Operating Budget Presentation*](#).

Another important element of funding is millage (6-Mill Levy). In 2008, Montana taxpayers passed a 6-Mill Levy. This levy is voted on in a popular election every 10 years. These Mill Levy funds currently provide about 7 percent of the state support for higher education.

Exhibit 7.B.II – [*The Governor’s 2011 Biennium Executive Budget Request*](#) included both present law adjustments for operating expenses and pay plan annualization for the previous fiscal year. These adjustments were funded through the appropriation of stimulus funds to mitigate tuition increases and from the non-resident fee increase. In addition, Montana Tech received a reallocation of \$135,000 per year in general funds from the system lump sum distribution.



General fund appropriations in FY10 for Montana Tech included a portion of the State of Montana’s share of funds relating to the American Recovery and Reinvestment Act of 2009. Some of these stimulus funds were allocated to Montana Tech and the other MUS campuses for tuition mitigation for resident students, increased access, and stabilization. With the allocation of these funds, Montana Tech will be able to avoid both reducing services and laying off faculty or staff as experienced by many higher education facilities due to the recession.

Other fund groups that make up the total operating budget at Montana Tech include the following:

- » **Restricted** – The majority of restricted funds are for grants and contracts generated through research activities coordinated by Montana Tech’s Office of Sponsored Programs. One of the goals of Montana Tech’s Strategic Plan is to enhance research and scholarly activities, which in financial terms is typically measured through grant revenues. Over the past 5 years, Montana Tech has averaged about \$8 Million annually in extramurally funded grants and contracts, and is budgeted for \$8.5 Million in FY10. The remainder of the \$12.5 Million represents financial aid programs and private gifts and scholarships.
- » **Designated** – These funds include fees collected from students for club accounts, athletic game guarantees, for instructional course fees, conference and workshop fees, and for sale and service revenues. A number of Montana Tech’s programs are laboratory and computer equipment intensive. Therefore, funds for computer labs, scientific equipment, and lab supplies often come from mandatory student fee assessments which are designated funds.
- » **Auxiliary** – The Auxiliary budgets are self-supporting enterprises in support of students, faculty, and staff. These auxiliary enterprises include the dining services, student housing (dormitory and apartment), bookstore, student union, campus parking, HPER (Health, Physical Education & Recreation Building)

SELF-STUDY 2010

Facilities, and student health services. Revenue is charged for the services provided to students, faculty, and to staff; expenditures relative to the revenue are reported in the appropriate cost center.

- » **Plant Funds** – Plant fund revenues are derived from a variety of sources that include land grant income from the State of Montana, investment earnings, student fees, the state funded LRBP, and from private fund raising for capital projects, such as Tech’s new Natural Resources Building. Transfers are also made from other fund groups into plant funds to repair and replace capital equipment as well as to retire long-term debt.

Given the somewhat small size of Montana Tech’s state supported budget and the reality of simultaneously increasing costs and decreasing state funds, the institution has become very adept at not only achieving efficiencies in programs and operations, but also at maintaining the quality and effectiveness of its programs and services. This balancing act requires accountable and competent budget management at all levels of the institution and a strong sense of total institutional commitment and collaboration at the executive level. Thus program units are structured in a way that encourages partnerships and that avoids duplication of effort and cost.

On an annual basis, the campuses of the Montana University System create metrics and benchmarking data to compare higher education trends in Montana. These trends include the expenditures per student FTE. As evidenced by Table 7.B.I, relative to other Montana institutions of higher education, Montana Tech is among the highest in expenditure per student. This is due, in part, to the high cost programs offered at Montana Tech.

TABLE 7.B.I MONTANA UNIVERSITY SYSTEM EXPENDITURES PER STUDENT FTE

CAMPUS	FY06 ACUTAL	FY07 ACTUAL	FY08 ACTUAL	FY09 ACTUAL	FY10 BUDGT'D	GROWTH RATE
UNIVERSITY OF MONTANA						
UM-Missoula	9,335	9,762	10,234	10,456	11,064	4.3%
Montana Tech of UM	10,192	10,443	10,993	11,383	11,688	3.5%
UM-Western	8,561	9,298	9,794	10,413	10,394	4.6%
UM-Helena COT	6,815	6,793	7,671	7,382	7,729	3.2%
MONTANA STATE UNIVERSITY						
MSU-Bozeman	10,370	11,242	12,090	12,601	12,773	5.3%
MSU-Billings	7,897	8,375	8,786	9,310	9,495	4.7%
MSU-Northern	9,839	10,485	11,815	12,361	12,564	6.3%
MSU-GF COT	6,734	7,071	7,656	7,511	7,924	4.2%
COMMUNITY COLLEGES*						
Dawson	6,881	8,319	8,939	8,905	8,901	6.6%
Flathead Valley	7,027	7,820	8,238	7,941	8,203	6.6%
Miles	8,412	9,265	10,698	10,926	10,674	6.1%

Source: Individual campus reporting metric worksheets for “Expenditures per Student FTE”

*FY08 was the first year this information was reported for Community Colleges.

The institution has adequately supported its programs and mission. The following Table 7.B.II summarizes the current revenues by source for Montana Tech for the last three years and includes projections for the next three years.

TABLE 7.B.II MONTANA TECH CURRENT FUNDS REVENUES

Standard 7 - Finance Table 1 Current Funds Revenues - Public Institutions Only												
Source (IPEDS) Report	Actual						Projected					
	Year 1 (2007)		Year 2 (2008)		Year 3*** (2009)		Year 4***(2010)		Year 5 (2011)		Year 6 (2012)	
	Amount	%*	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
Tuition & Fees	10,588,578	24.7	10,671,520	22.2	12,019,815	22.7	12,611,762	23.3	12,816,712	23.7	13,457,547	23.7
Government Appropriations												
Federal												
State	10,567,857	24.7	12,199,527	25.4	13,415,616	25.3	13,234,871	24.5	13,603,694	25.2	14,283,878	25.2
Local												
Government Grants & Contracts												
Federal Unrestricted	7,945,189	18.5	9,105,799	18.9	5,942,797	11.2	5,157,802	9.5	5,415,692	10.0	5,686,477	10.0
Federal Restricted					2,718,093	5.1	2,834,000	5.2	2,975,700	5.5	2,124,485	5.5
State Unrestricted	1,530,815	3.6	1,295,521	2.7	2,020,526	3.8	1,744,340	3.2	1,831,557	3.4	1,923,135	3.4
State Restricted	2,540,186	5.9	3,200,380	6.7	3,108,564	5.9	5,317,800	9.8	4,475,172	8.3	2,132,951	4.0
Local Unrestricted	14,758	0.0	8,568	0.0	44,974	0.1		0.0		0.0		0.0
Local Restricted												
Priv. Gifts, Unrest'd	1,571,804	3.7	2,122,581	4.4	3,077,719	5.8	2,031,382	3.8	2,132,951	4.0	2,239,599	4.0
Grants, Contr'ts Restricted												
End'mt Unrest'd												
Income Restricted												
Sales and Services of Education Activities												
Aux'y Enterprises	3,648,559	8.5	3,682,417	7.7	3,932,184	7.4	4,929,825	9.1	5,176,316	9.6	5,435,132	9.6
Hospitals												
Other Sources	1,453,727	3.4	1,504,472	3.1	1,807,998	3.4	969,353	1.8	122,000	0.2	128,100	0.2
Independent Op's	2,968,862	6.9	4,265,771	8.9	4,861,844	9.2	5,185,711	9.6	5,444,997	10.1	5,717,246	10.0
Total Current Funds Revenues	42,840,335	100.0	48,056,556	100.0	52,950,130	100.0	54,016,846	100.0	53,994,790	100.0	56,694,530	100.0

SELF-STUDY 2010

Table 7.B.III summarizes the past three years of current funds expenditures and mandatory transfers. The source of the prior year's information is included in Exhibit 7.B.III – IPEDS Finance Survey Submissions.

TABLE 7.B.III MONTANA TECH CURRENT FUNDS EXPENDITURES AND MANDATORY TRANSFERS

Standard 7 - Finance Table 2 Current Funds Expenditures and Mandatory Transfers - Public Institutions Only													
Source (IPEDS) Report	Actual						Projected						
	Year 1 (2007)		Year 2 (2008)		Year 3*** (2009)		Year 4***(2010)		Year 5 (2011)		Year 6 (2012)		
	Amount	%*	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	
Education and General Expenditures													
Instruction	11,582,759	27.0	15,169,937	31.6	17,102,584	32.3	16,380,997	30.3	17,803,949	33.0	18,694,147	33.0	
Research	9,207,108	21.5	11,833,036	24.6	11,552,281	21.8	16,169,394	29.9	17,573,965	32.5	18,445,663	32.5	
Public Service			2,915		718								
Academic Support (Excluding Libraries)	2,243,474	5.2	3,352,525	7.0	4,177,185	7.9	2,092,268	3.9	2,274,015	4.2	2,387,716	4.2	
Library Expenditures													
Student Services	2,667,990	6.2	3,566,152	7.4	3,943,190	7.4	3,528,992	6.3	3,726,855	6.9	3,913,197	6.9	
Institutional Support	2,836,121	6.6	3,662,493	7.6	3,738,754	7.1	4,045,321	7.5	4,396,723	8.1	4,616,559	8.1	
Plant Operations & Maintenance	5,413,520	12.6		0.0		0.0		0.0		0.0		0.0	
Scholarships/ Fellowships	2,608,973	6.1	2,009,145	4.2	2,166,963	4.1	2,110,270	3.9	2,293,581	4.2	2,408,260	4.2	
Awards from Unrestricted Funds													
Awards from Restricted Funds													
Educationl & General Expend's & Mandatory T'frs													
Auxiliary Enterp's (Including ransfers)	3,529,903	8.2	4,349,784	9.1	4,873,385	9.2	5,434,401	10.0	5,906,466	10.9	6,201,789	10.9	
Hospitals (Including transfers)													
Independent Ops (Including Transfers)	2,077,866	4.9	2,408,317	5.0	2,741,837	5.2	17,700	0.0	19,238	0.0	21,199	0.0	
Auxiliary Enterp's													
Hospitals													
Total Current Funds & Mandatory Transfers	42,167,714	98.4	46,354,304	96.5	50,296,897	95.0	49,679,343	92.0	53,994,790	100.0	56,694,530	100.0	

*Percentage of Total Current Fund Revenues

**Most recent fiscal year for which audited financial statements are available

***Budget for Current Year

The Montana Bureau of Mines and Geology is not included in the above tables for educational and general expenditures and revenues. The total Bureau and Groundwater revenues for FY09 were \$3,019,403, and the total expenditures were \$3,205,989. The difference between revenues and expenditures represents a carryforward of one-time-only funds from FY08. For FY2010, the total budgeted revenues and expenditures are \$5,317,800. Most of this increase stems from the approval of House Bill 52 – An Act Establishing a Ground Water Investigation Program. This bill provides an additional \$4.2 million to the Bureau of Mines during the FY10 – FY11 biennium, of which approximately \$2.5 million was allocated in FY10. This funding is characterized as state special funding dedicated to groundwater basin research.

The Bureau is closely allied with the research function of Montana Tech and conducts broadly based applied research that contributes to the orderly development and use of Montana's minerals, fuels, and groundwater resources. Both the Bureau and its groundwater programs are organized to provide a service of information through completion of state-funded projects, cooperative research agreements, and grants and contracts with various state and federal agencies.

By using various financial resources available, Montana Tech has been able to make progress toward the following MUS Strategic Goals:

- » **Goal 1 – Increase Educational Attainment of Montanans**
 - Serving More Montanans
 - No Increase in Resident Tuition
 - Increased Retention
 - Funded Distance Learning Coordinator Position
- » **Goal 2 – Assist in the Expansion and Improvement of the Economy**
 - Continue Relationship with Industry Partners
 - Consistently High Placement of Students
 - Expanded Research
- » **Goal 3 – Improve Institutional Efficiency and Effectiveness**
 - Continued Integration of 2-Year, 4-Year and Graduate Education
 - One Card System - Meal Plans, Printing, Vending and Security

7.B.2 Adequate resources are available to meet debt service requirements of short-term and long-term indebtedness without adversely affecting the quality of educational programs. A minimum of three years' history of the amount borrowed (whether internally or externally) for capital outlay and for operating funds is maintained. A five-year projection of future debt repayments is maintained.

The institution is relatively free of any short-term debt. Montana Tech had one capital lease for campus photocopiers with a principal balance of \$50,799 as of June 30, 2009. Exhibit 7.B.IV - *Capital Lease Amortization Schedule* details the remainder of loan payments on this lease, which will conclude in October, 2010.

SELF-STUDY 2010

Long-term debt consists of the Series C 1995, Series E 1998, Series F 1999, and the Series J 2005 Facilities Improvement and Refunding Revenue Bonds. The University of Montana campuses issued Revenue Bonds totaling \$168,411,780 from December 1995 to September 2005. These bonds were issued in six separate series, but Montana Tech was only included in four of the series for a total of \$17,557,780. The bonds were issued pursuant to an Indenture of Trust between the Board of Regents of Higher Education for the State of Montana (on behalf of The University of Montana) and the U.S. Bank Trust National Association. These bonds are secured by a first lien on the combined Pledged Revenues of the four campuses of The University of Montana. Bonds payable are recorded in the financial statement of each campus and reflect the liability associated with the bond proceeds for that specific campus.

A debt management team with representation from each campus of The University of Montana meets annually to review revenue bond activity. Per the terms of the bond indenture, the cross-pledged revenue coverage on pledged revenue needs to be at least at a ratio of 1.15 times the annual debt obligation. The combined campuses of The University of Montana have consistently far exceeded this ratio. The ratio for FY 2009 was at 2.31, twice the requirement of the indenture as reported in Exhibit 7.B.V – *The University of Montana Revenue Bond Audit*.

Montana Tech’s principal amount outstanding at June 30, 2009 is \$9,047,636. The historical and projected pledged revenues and associated debt service payments are presented in Table 7.B.IV.

TABLE 7.B.IV DEBT SERVICE SCHEDULE

	ACTUAL			PROJECTED		
	FY06 AMOUNT	FY07 AMOUNT	FY08 AMOUNT	FY09 AMOUNT	Y10 AMOUNT	FY11 AMOUNT
Principal	505,000	549,049	574,049	613,791	659,540	680,905
Interest	598,062	574,750	546,848	517,761	486,095	451,397
Fiscal Year	1,103,062	1,123,799	1,120,897	1,131,552	1,145,635	1,132,302
Principal Beg Bal	11,289,525	10,784,525	10,235,476	9,661,427	9,047,636	8,388,096
Issuance			-	-	-	-
Principal Pmts	(505,000)	(549,049)	(574,049)	(613,791)	(659,540)	(680,905)
Principal End Bal	10,784,525	10,235,476	9,661,427	9,047,636	8,388,096	7,707,191

7.B.3 Financial statements indicate a history of financial stability for the past five years. If an accumulated deficit has been recorded, a realistic plan to eliminate the deficit is approved by the governing board.

Financial statements for the last five years (Exhibit 7.B.VI) indicate a history of financial stability for all fund groups. As mandated by both state and federal requirements and by bond indenture covenants, Montana Tech is not allowed to deficit spend. Any negatives are a result of Generally Accepted Accounting Principles

(GAAP) to record entries for unfunded compensated absences liabilities, which result in a negative fund balance in the unrestricted operating account. The negative fund balance in the retirement of indebtedness fund is due to recording accrued bond interest payable at fiscal year end. Additionally, The University of Montana and its affiliated campuses have adopted GASB 45 – Accounting and Financial Reporting by Employers for Postemployment Benefits Other than Pensions. This GASB standard requires that other post-employment benefits (OPEB) be recorded on an accrual basis instead of during the period in which they are paid. Traditionally these unfunded liabilities have not been recognized, and Montana Tech believes the nature of these obligations should be treated as pay-as-you-go expenses, which is how they are managed.

7.B.4 Transfers among the major funds and interfund borrowing are legal and guided by clearly stated policies in accordance with prudent financial planning and control.

Mandatory fund transfers are made among the auxiliary, unexpended plant, and retirement of indebtedness fund groups in compliance with the bond indentures. A transfer is made from the designated fund and unexpended plant fund groups for life cycle accounts. A *Schedule of Fund Transfers* (Exhibit 7.B.VII) is reported to the Office of Commissioner of Higher Education on an annual basis.

Non-mandatory fund transfers are made between current unrestricted funds and designated reserve accounts. Montana Tech currently utilizes three reserve accounts, including a Retirements Costs Reserve account, a Reserve Revolving account, and a Scholarships & Stipends account. Additionally, the Bureau of Mines and Geology also has a Retirement Costs Reserve account.

On an annual basis, a review is conducted of restricted fund types to ensure that the fund maintains a positive cash balance per state policy. It is typical for grants and contracts to incur reimbursable expenditures for which a receivable has been created at fiscal year end. An inter-entity loan is made from the designated fund to the restricted fund to maintain a positive cash balance to cover these receivables until they are billed to a grant or contract. An *Inter-Entity Loan Authorization* request (Exhibit 7.B.VIII) is made by Montana Tech through the Director of Banner Accounting and Operations to the Office of Commissioner of Higher Education for approval per *Montana Code Annotated 17-2-107* (Exhibit 7.B.IX).

7.B.5 The institution demonstrates the adequacy of financial resources for the support of all of its offerings including specialized occupational, technical, and professional programs.

In establishing its annual budget, Montana Tech considers all sources of available funds. Effective combinations of funding have enabled the institution to establish higher quality programs and services than otherwise might be possible. At the same time, close attention is paid to using funds appropriately at all times. This is especially true of the relationship between the current unrestricted budget and the auxiliary funds and student fee accounts.

SELF-STUDY 2010

Offerings including occupational, technical, and professional programs are generally supported by state general fund appropriations, state millage appropriations, and by tuition & fees. On a biennial basis, recommendations for tuition and fees are based on a number of factors that include the availability of state funding, enrollment estimates, inflationary factors, affordability, competitiveness, and the needs of individual program offerings. The Montana Board of Regents provides several policies for guidance in setting tuition and fee levels, including [*Policy 940.31 Policy Statement on Tuition*](#) (Exhibit 7.B.X), [*Policy 940.12.1 Annual Fee and Tuition Approval*](#) (Exhibit 7.B.XI), and [*Policy 506.1 Student Participation in Fee Decisions*](#) (Exhibit 7.B.XII).

Under the challenges and constraints faced by Montana Tech, several achievements demonstrate the adequacy of how Tech manages its financial resources. Despite a climate of reduced state revenues and general fund allocations, Montana Tech has maintained and even grown faculty and staff positions without any furloughs, layoffs, or work stoppages. While faculty compensation remains a challenge in remaining competitive with peer institutions, over the past several fiscal periods the salary levels of professors have been reviewed and adjusted for equity. In addition, the salaries of faculty within departments and by discipline have been adjusted to correct for inversions.

Montana Tech has also taken advantage of State of Montana surplus funds that have been allocated in the form of One-Time-Only funding. This funding has helped develop a Pre-Apprenticeship Lineman program at the College of Technology, funded simulation laboratory equipment for Petroleum Engineering, provided paste backfill laboratory equipment for mining engineering, equipped the College of Technology with new fabrication equipment, and also provided seismic monitoring equipment for the Earthquake Studies division of the Montana Bureau of Mines and Geology.

7.B. 6 The institution identifies the sources of its student financial aid for current enrollments and provides evidence of planning for future financial aid in light of projected enrollments. It monitors and controls the relationship between unfunded student financial aid and tuition revenues.

Various forms of student aid, including loan funds, make up approximately 65 percent of the tuition and fees collected from students. During FY 2010, \$1,981,570 is budgeted for state fee waivers. State fee waivers increase in proportion to any increase in tuition (Exhibit 7.A.VIII). It is estimated that 85% of first time incoming freshman will receive financial aid. The Enrollment Processing Office, working with the Enrollment Services Office, administers financial aid packages to recruit the best available students and student athletes. A full report of student financial aid activity is reported annually to the Integrated Postsecondary Education Data System (IPEDS). The most recent years [*IPEDS Financial Aid Survey Submission*](#) is displayed in Exhibit 7.B.XIII.

The Director of Enrollment Processing and Financial Aid projects the amount of financial aid that will be necessary through Title IV funds in relation to the institution's enrollment projections. This is done at the same time that the financial aid cost of education figures are developed. Along with projected state and federal

aid, an assessment is also made of available institutional controlled scholarships and grants. Using this information, Montana Tech's Chancellor works with the Montana Tech Foundation to identify the needs of the institution and its students in relation to what the Foundation may raise for direct student support. The campus Scholarship Committee and the Enrollment Services Office also provide input into this discussion of student needs and related fund-raising and allocation policies.

The Enrollment Processing Office at Montana Tech provides students with a means of paying for higher education through scholarships, federal grants, through state grants, federal and state work-study programs, and through federal loan programs. Information on programs is available through Internet access and federal publications to increase early awareness of financial aid programs and to expedite the timely awarding of Title IV funds. The default rate of 4.0%, as provided by the US Department of Education for the two most recent years, is illustrated in Figure 3.D.3 of the Standard Three report.

7.B.7 The institution maintains adequate financial reserves to meet fluctuations in operating revenue, expenses, and debt service.

Generally, the institution has the flexibility to make effective and appropriate planning and budgeting decisions on those campus programs that support Montana Tech's overall mission and academic goals.

Operating contingencies have been anticipated by establishing reserve accounts that have been set aside to manage and mitigate the impact of unanticipated revenue shortfalls and/or unanticipated and unavoidable increases in expenditures. The balance of the Reserve Revolving Account is limited to a maximum level of the greater of 2% of the prior year's revenue or \$500,000 per *Board of Regent Policy 901.15 – Establishment of Reserve Revolving Accounts* (Exhibit 7.B.XIV). Similar policies exist for the *Establishment of a Retirement Costs Reserve Account – Policy 910.10* (Exhibit 7.B.XV) and for the *Establishment of a Scholarship and Stipends Reserve Account – Policy 901.13* (Exhibit 7.B.XVI).

Montana Tech's reserve funds have been funded through transfers of current unrestricted funds throughout the years. The balance of Montana Tech's Reserve Revolving Account currently sits at \$500,000, the maximum allowable as of the end of fiscal year 2009. Montana Tech is the only campus in the Montana University System to have the maximum reserve balance in this account. The balance of the Retirement Costs Reserve Account, at the end of fiscal year 2009, is \$540,000; and the balance of the Scholarships & Stipends Reserve Account, at the end of fiscal year 2009, is \$500,000. Annually, Montana Tech prepares a *Board of Regents Authorized Reserve Account Report* listed in Exhibit 7.B.XVII. This report summarizes activity in the reserve accounts as well as the on the budgeted activity for the following year. This report is submitted to the Office of Commissioner of Higher Education.

SELF-STUDY 2010

7.B.8 The institution demonstrates an understanding of the financial relationship between its education and general operations and its auxiliary enterprises and their respective contributions to the overall operations of the institution. This includes the institution's recognition of whether it is dependent on auxiliary enterprise income to balance education and general operations or whether the institution has to use education and general operations income to balance auxiliary enterprises.

Both the educational and general funds and the auxiliary funds are operated separately and independent of each other at Montana Tech. Tech's general operating account is used to support the institution's primary objective; instruction, research, academic affairs, student affairs, institutional support, operation and maintenance of plant, and waivers. The institution ensures that all the revenues and expenditures are spent as appropriated by the legislature and as approved by the Board of Regents. Finally, the institution ensures that there is no deficit spending.

Auxiliaries are budgeted and accounted for separately. There is a yearly administrative charge assessed to auxiliaries for the services which the institution provides to the auxiliaries. That assessment amounts to \$15,000 annually.

STANDARD 7.C - FINANCIAL MANAGEMENT

7.C.1 The president reports regularly to the governing board about the financial adequacy and stability of the institution.

Montana Tech's Chancellor reports on a regular basis to the Board of Regents on the institution's financial adequacy and stability. The Board of Regents meets every other month in person and via a phone conference on months that it is not scheduled to meet.

7.C.2 Financial functions are centralized and are under a single qualified financial officer responsible to the president. Institutional business functions are under one or more qualified officers, are well organized, and function effectively. The complexity of the business organization reflects the size of the institution and the significance of its transactions.

The financial service functions of Montana Tech are centralized under the Vice Chancellor for Administration and Finance who reports directly to the Chancellor of Montana Tech.

The institutional business functions have been divided into three offices:

- » Budget and Human Services Office (Budget/Payroll/Personnel/Purchasing/Accounts Payable);
- » Business Office (General Accounting/Student Billing/ Business Services);
- » Office of Sponsored Programs and Grant Accounting (Grant Accounting).

The first office is the Budget and Human Services Office which is responsible for managing and monitoring all expenditures and income activities. Under the direction of

the Associate Director of Budgets & Purchasing, it plans, reviews, prepares, and submits budgets for all fund groups in an accurate and timely fashion. However, control and administration of scholarships, grants in aid, work study, and loans are under the direction of the Director of Enrollment Processing and Financial Aid and are included in the institution's regular planning, budgeting, accounting, and auditing procedures.



The second office is the Business Office. Its function is to provide the administration, faculty, staff, and students with related service functions that include receivables, cashiering, cash management, cash-flow investing, financial management information and accountability, general accounting, internal control, and student fee payment. Management of property resides with the Associate Director of Budgets and Human Services who works closely with the Controller and the Business Office in reconciliation for financial purposes. The Business Office is also responsible for some of the accounting and reporting for the college's fund groups including the general operating unrestricted funds, the federal-state-local restricted funds, auxiliaries, self-supporting designated funds, loan funds, endowment funds, and agency funds.

Also included here are the unexpended-retirement of indebtedness, net investment in plant, and renewal and replacement plant funds.

The Business Office provides a variety of campus services which include the following:

- » Accepting accounts receivable payments made by cash, check, and credit card ,
- » Distributing scholarship, financial aid, and work study checks, and
- » Answering all questions regarding student accounts from a financial perspective.

The final office is the Office of Sponsored Programs (OSP), which is responsible for some pre-award and all post-award financial matters dealing with Montana Tech grants and contracts. Here, the staff is required to review and approve all proposed budgets for new proposals. OSP is responsible for post-award compliance with non-technical sponsor requirements, such as financial reporting and invoicing, cash management, and account close-out procedures. OSP also responds to requests for audits of sponsored agreements, prepares the indirect cost proposal, negotiates the indirect cost rate, provides support for documentation of direct salary charges and personnel cost share, performs special cost studies for recharge centers, and prepares management information reports on proposals and awards.

Although these three offices work collaboratively on a daily basis to achieve the financial goals of Montana Tech, they have been designed for the streamlined, effective, and efficient stewardship of Montana Tech's resources. This organization maximizes transparency as required by Montana law and eliminates the duplication of effort across offices.

SELF-STUDY 2010

7.C.3 All expenditures and income from whatever source, and the administration of scholarships, grants in aid, loans, and student employment, are fully controlled by the institution and are included in its regular planning, budgeting, accounting, and auditing procedures.

No matter what the source might be, all expenditures and income are budgeted and monitored throughout the year by multiple sources. Current unrestricted funds are budgeted to the department level and are monitored by both the Budget and Human Services Office and individual department managers. Plant, Loan, Endowment, Designated, and Auxiliary funds are budgeted to the department level; they are closely analyzed by the Business Office, Budget and Human Services Office, and by individual department managers. Restricted funds are monitored by the Office of Sponsored Programs as well as by the individual principal investigator of each award.

7.C.4 The institution has clearly defined and implemented policies regarding cash management and investments which have been approved by the governing board.

Montana Tech has clearly defined and implemented cash management and investment procedures, as evidenced by the audit reports of the Legislative Audit Division and by the bond independent audit reports. Investments are made with the State Board of Investments and with the Bond Trustee. Effective July 1, 1997, Montana Tech was authorized and required to invest excess monies in the general operating and designated fund groups. The general fund appropriation included projected earnings on these funds in the amount of \$122,000, for fiscal year 2010. Any investment earnings in excess of the projected amount are maintained in current unrestricted funds which are based on approved budget authority. Montana Tech's had excess earnings for fiscal year 2008 in the amount of \$79,782 but no excess earnings in fiscal year 2009.

7.C.5 The institution's accounting system follows generally accepted principles of accounting.

Until June 30, 1999, Montana Tech used the Statewide Budgeting and Accounting System (SBAS). SBAS followed generally accepted accounting principles. However, beginning July 1, 1999, Montana Tech began using Banner. All major administrative systems (Human Resources, Payroll, and Finance) belong to the Banner suite, which is a comprehensive, highly integrated, and complex set of systems designed for the higher education environment. Currently, Montana Tech runs and manages its own separate Banner student system. The Banner suite of systems is a product of Systems and Computer Technology, Inc. (SCT). This software was designed to follow generally accepted principles of accounting.

7.C.6 For independent institutions, the governing board is responsible for the selection of an auditing firm and receives the annual audit report.

Not applicable.

7.C.7 Independent institutions are audited annually by an independent certified public accountant and the audit is conducted in accordance with generally accepted auditing standards. The audit includes a management letter. A summary of the latest audited financial statement is made available to the public.

Not applicable

7.C.8 A proprietary institution makes available annually a financial summary which includes, as a minimum, a list of company officers, a statement of profit and loss, expenditures, indebtedness, and companies which have a controlling interest in the institution.

Not applicable

7.C.9 If public institutions are, by law, audited by a state agency, an independent audit is not required except for any funds not subject to governmental audit.

Annual Consolidated Financial Audits and Biennial Consolidated Financial-Related Audits for the four campuses of the University of Montana are done by the Legislative Audit Division. Funding for this legislative audit is a line item in the general fund legislative appropriation at the system level. The University of Montana campuses receive an allocation as part of the biennium budget, and Montana Tech pays its prorated share of audit costs for the University of Montana campuses. (Exhibit 7.C.I)

7.C.10 All funds for financial aid and other specific programs not subject to governmental audit are audited annually by an independent certified public accountant and include a management letter.

Financial aid funds are subject to the legislative audit referred to in section 7.C.9. Montana Tech is eligible to participate in Federal Student Financial Aid Programs, and this eligibility was last affirmed on February 13, 2007. A determination of eligibility is made once every five years, and this affirmation is effective through December 31, 2011. A copy of the [*Federal Student Aid Eligibility Letter*](#) is in Exhibit 7.C.II.

In addition to the biennium Financial-Compliance Audit, a [*Revenue Bond Audit*](#) (Exhibit 7.B.V) is done by an independent Certified Public Accountant (CPA). In the opinion issued by this independent CPA, the management of the University of Montana campuses has complied with the requirements of the indenture for the year ended June 30, 2009 in all material aspects.

7.C.11 The institution demonstrates a well-organized program of internal audit (where appropriate) and control that complements the accounting system and the external audit.

The Internal Audit Office of The University of Montana performs financial, operational, EDP, and compliance reviews of departments, colleges, and processes throughout the University of Montana campuses – including Montana Tech. The Internal Audit Office is independent from the finance function and reports directly to the President of The University of Montana.

SELF-STUDY 2010

As part of implementing SAS 112 – Communicating Internal Control Related Matters Identified in an Audit, the Legislative Audit Division of the State of Montana requested that The University of Montana and its affiliated campuses create an Inventory of Specific Internal Control Activities. This *Internal Control Inventory* (Exhibit 7.C.III) contains a comprehensive assessment of the control activities of Montana Tech and was completed during 2008.

7.C.12 The institution demonstrates that recommendations in the auditor’s management letter accompanying the audit report have been adequately considered.

Financial statements are prepared to conform to standards recommended both by the National Association of College and University Business Officers and the Industry Audit Guide of the American Institute of Certified Public Accounts. The Legislative Audit Division audits Montana Tech and the resulting two year Financial—Compliance Audit (Exhibit 7.C.I) is presented to the Legislative Audit Committee of the Montana State Legislature. Audit results of all four campuses are combined into one document at the request of The University of Montana. Ultimately, audit recommendations are addressed to The University of Montana but relate to each of the affiliated campuses.

Exhibit 7.C.IV shows an *Audit Recommendation and Action Plan* based on audit findings. This report specifies an action for each recommendation, and the action plan on all recommendations pertaining to Montana Tech have been implemented and completed. The independent auditor’s report has consistently included an unqualified opinion for the institution.

7.C.13 Federal, state, external, and internal audit reports are made available for examination as part of any evaluation conducted by the Northwest Commission on Colleges and Universities.

This Standard 7 accreditation document makes available for review all federal, state, external, and internal audit reports as attachments and summarizes them in the accompanying list of Exhibits.

STANDARD 7.D - FUNDRAISING AND DEVELOPMENT

7.D.1 All college/university fundraising activities are governed by institutional policies, comply with governmental requirements, and are conducted in a professional and ethical manner.

Montana Tech is a unit of the State of Montana. Financial statements for Montana Tech include only the activities, funds, and accounts of the institution and the Bureau of Mines. Private nonprofit organizations affiliated with the institution include the Montana Tech Foundation, the Digger Athletic Association, and the Montana Tech Alumni Association. Both the Foundation and two Associations operate exclusively to encourage, promote, and support programs, research, scholarly pursuits, and athletics at or in connection with Montana Tech. In exchange, Montana Tech provides

the Foundation with office space and with accounting fees for the Digger Athletic Association. In addition, both Associations are provided with office space.

The institutional policy governing foundations and fundraising activities is found in Exhibit 7.D.I Board of Regents [Policy 901.9 – Campus-Affiliated Foundations: Montana University System](#). This policy promulgates foundation compliance with local, state, and federal laws in terms of fund raising, separately accounted for and audited financial statements, and requires a written operating agreement between the foundation and campus. These requirements are all designed to assure the public's confidence in the professional and ethical manner in which funds are raised for the Tech campus.

Montana Tech is very fortunate to receive strong and enduring support from its alumni, local government, from local businesses, and from national and international business and industry. Tech fosters active, ongoing, and genuine interaction and communication linkages between its academic programs and constituencies from all sectors of society. These mutually beneficial relationships are enhanced by the fact that the institution has a well understood academic, research, and public service mission. Montana Tech clearly demonstrates to all concerned its commitment to these purposes.



7.D.2 Endowment and life income funds and their investments are administered by an appropriate institutional officer, foundation, or committee designated by the governing board. The organization maintains complete records concerning these funds and complies with applicable legal requirements.

The majority of endowment funds for Montana Tech are held by and administered by the Montana Tech Foundation. Montana Tech had an Endowment Fund balance of \$389,979 at the end of FY 2009 as shown in Exhibit 7.A.X [Montana University Operating Budgets \(CHE\)](#). Donors are encouraged to direct donations to the Montana Tech Foundation, but through the years there have been instances where donor intent stipulated that the college receive and hold the endowment. The policy on donations is delineated in Exhibit 7.D.II Board of Regents [Policy 901.7 – Donations](#). As the Montana Tech Foundation is responsible for fund-raising and development activities, the majority of that activity is recorded in the Foundation operations. Table 7.D.I below displays only Foundation financial activity for operating gifts and endowments.

SELF-STUDY 2010

**TABLE 7.D.I MONTANA TECH FOUNDATION
OPERATING GIFTS AND ENDOWMENTS**

	ACTUAL			PROJECTED	
	YEAR 1 (2007) AMOUNT	YEAR 2 (2008) AMOUNT	YEAR 3 (2009) AMOUNT	YEAR 4 (2010) AMOUNT	YEAR 5 (2011) AMOUNT
ANNUAL GIFTS					
Operations Restricted	\$2,291,246	\$1,632,792	\$1,781,402	\$1,650,000	\$1,800,000
Operations Unrestricted	\$304,565	\$197,538	\$198,017	\$205,000	\$175,000
Endowments Exclusive of Foundation Gifts	\$1,747,254	\$1,780,714	\$644,710	\$1,250,000	\$1,800,750
Plant	\$0	\$0		\$0	\$0
Total	\$4,343,065	\$3,611,044	\$2,624,129	\$3,105,000	\$3,775,750
Ratio of Annual Gifts to E&G	1.49	1.03	3.07	1.48	1.10
ENDOWMENT FUND BALANCE					
Permanent	\$23,768,526	\$23,367,483	\$19,417,173	\$22,500,000	\$23,625,000
Term	\$800,000	\$572,957	\$150,000	\$0	\$0
Quasi	\$2,109,372	\$1,837,859	\$1,405,720	\$1,750,000	\$1,837,500
Total	\$26,677,898	\$25,778,299	\$20,972,893	\$24,250,000	\$25,462,500

7.D.3. The institution has a clearly defined relationship with any foundation bearing its name or which has as its major purpose the raising of funds for the institution.

Montana Tech has always had in place an appropriate contractual relationship with its Foundation. More recently, the Regents adopted more stringent guidelines in these contracts for fundraising and development services with the campus foundation. These guidelines, delineated in Exhibit 7.D.I *Policy 901.9 – Campus Affiliated Foundations*, discuss how foundations should most properly represent the school and work on activities for the benefit of the associated institution. This Regents policy assures proper accounting and use of funds. Qualified officers and staff in the Foundation administer all Foundation funds. A Foundation Board of Directors provides general policy and oversight with appropriate involvement of the Chancellor.

The *Contract of Operations - Foundation* (Exhibit 7.D.III) between Montana Tech and the Foundation authorizes the Foundation to manage endowments and transfer funds to the institution in accordance with terms and conditions of the gift instrument. The Foundation's records are reviewed annually through an *Independent Audit* (Exhibit 7.D.IV). A copy of this audit report is submitted to the Business Office after the close of the fiscal year, and then made available to the state auditors for review to substantiate Montana Tech's related parties footnote.

There is an arms-length relationship between the Foundation and Montana Tech. The estimated amounts spent by the Foundation for the support of Montana Tech for fiscal years ended June 30, 2008, and June 30, 2009, were \$2,056,627 and \$3,013,093 respectively.

EXHIBITS

7.A.I	Montana Tech Strategic Plan
7.A.II	Montana Tech Vision 2025
7.A.III	Montana Board of Regents Strategic Plan
7.A.IV	Governor's Executive Budget Request
7.A.V	Long Range Building Project Priority List
7.A.VI	Long Range Building Program Approvals
7.A.VII	Auxiliary Projects Plan
7.A.VIII	Montana Tech Operating Budget Template
7.A.IX	Internal Operating Budget
7.A.X	Montana University System Operating Budgets (CHE)
7.A.XI	The University of Montana Current Unrestricted Operating Budgets
7.A.XII	Montana Tech Comparative Summary of Revenue and Fund Balance Projection
7.B.I	Montana Tech FY10 Board of Regents Operating Budget Presentation
7.B.II	Governor's 2011 Biennium Executive Budget Request
7.B.III	IPEDS Finance Survey Submissions
7.B.IV	Capital Lease Amortization schedule.
7.B.V	Revenue Bonds Audit
7.B.VI	Financial Statements
7.B.VII	Montana Tech Transfer Schedule
7.B.VIII	Inter-Entity Loan Authorization
7.B.IX	Montana Code Annotated 17-2-107
7.B.X	Policy 940.31 – Policy Statement on Tuition
7.B.XI	Policy 940.12.1 – Annual Fee and Tuition Approval
7.B.XII	Policy 506.1 – Student Participation in Fee Decisions
7.B.XIII	IPEDS Financial Aid Survey Submissions
7.B.XIV	Policy 901.15 - Establishment of Reserve Revolving Accounts
7.B.XV	Policy 910.10 – Retirement Costs Reserve Account

SELF-STUDY 2010

7.B.XVI	Policy 901.13 – Establishment of a Scholarship and Stipends Reserve Account
7.B.XVII	Board of Regents Authorized Reserve Account Report
7.C.I	Financial-Compliance Audit
7.C.II	Federal Student Aid Eligibility Letter
7.C.III	Montana Tech Internal Control Inventory
7.C.IV	Audit Recommendation and Action Plan
7.D.I	Policy 901.9 – Campus Affiliated Foundations; Montana University System
7.D.II	Policy 901.7 - Donations
7.D.III	Contract of Operations - Foundation
7.D.IV	Independent Auditor’s Report – Foundation

SANDARD 8 - PHYSICAL RESOURCES



STANDARD 8.A - INSTRUCTIONAL AND SUPPORT FACILITIES

Sufficient physical resources, particularly instructional facilities, are designed, maintained, and managed (at both on- and off-campus sites) to achieve the institution's mission and goals.

8.A.1 Instructional facilities are sufficient to achieve the institution's mission and goals.

Montana Tech's North and South campuses are home to twelve academic buildings which contain 47 lecture classrooms, 37 computer labs, and 30 other specialty labs. The South Campus facility contains 10 lecture classrooms, 8 of the computer labs, and 9 of the specialty labs. These facilities are sufficient to achieve the mission of this institution.

As enrollment continues to grow, the need for larger classrooms continues to grow at Montana Tech's North Campus. Of the 37 lecture classrooms available on the North Campus, 10 can seat 60 or more students (of these, one is the auditorium). Montana Tech's smaller classrooms are ideal for most of our undergraduate level courses. Each year, more sections are added in order to make the cohort groups smaller in an effort to accommodate smaller classrooms. The recent addition of the Natural Resources Building to the campus inventory has assisted with this shortage, but Tech definitely needs more classrooms that can hold 60 or more students on the North Campus.

Moreover, 27 lecture classrooms have high-tech multi-media (HTMM) equipment (such as a computer, data projector, internet connection, etc.) for classroom instruction. Electronic teaching aids are more and more common in today's teaching strategies.

Montana Tech boasts 30 laboratories for hands-on demonstrations. These labs range from drafting and welding labs, to x-ray and robotics labs. The fact that we have so many specialty labs speaks well for Montana Tech's hands-on education, especially in engineering.

The planned renovation of the Health Sciences Building (formerly the Petroleum Building) will create five new classrooms. Tech's academic leadership has looked closely at the congestion of courses offered in the 9 a.m. to 12 (noon) timeslots and is committed to work with faculty to spread the load across a greater portion of the day, thus allowing for more efficient use of instructional facilities.

8.A.2 Facilities assigned to an instructional function are adequate for the effective operation of the function.

The vast majority of Montana Tech's instructional space is adequate. However, some facilities are arguably old and can improve. Some near-term improvements are scheduled to address the effectiveness of the facilities. These include the HVAC and lighting upgrade of the Mining Geology Building as well as the ELC Building. A \$3.2 million remodeling of the former Petroleum Building is slated for the coming year,

SELF-STUDY 2010

making this facility ready for nursing instruction. In 2008, an entire HVAC and lighting remodel occurred at the South Campus representing a \$1.4 million investment. As addressed above, multi-media is a high-demand item. More than 10 classrooms have recently been upgraded with the equipment, and Tech will continue to address the need as budget authority allows. The campus has recently completed a deferred maintenance prioritization, and an emphasis will be placed on taking items off that list one at a time.

8.A.3 The institution's facilities are furnished adequately for work, study, and research by students, faculty, and staff.

Montana Tech relies on non-academic department directors, department heads, and the academic deans to ensure that adequate furnishings are in place for offices. When one area improves, any surplus furniture is made available to the campus first. A Classroom/Lab Account is managed by the Vice Chancellor for Academic Affairs and is used to cover requests from the deans and department heads. Non-academic departments are required to budget and plan for upgrades. One-time-only requests can also be made to the Executive Budget Committee for these items.

The level of campus research continues to grow. The following Figure 8.A.1 illustrates the dramatic increase over the decade. This growth continues to put pressure both on the laboratory space available for research and on the space available for graduate student offices. The new Natural Resources Building contains a lab dedicated solely to research functions. This research lab is a new addition to Tech's largest program and will serve as a foundation to expand research by petroleum engineering students and faculty.

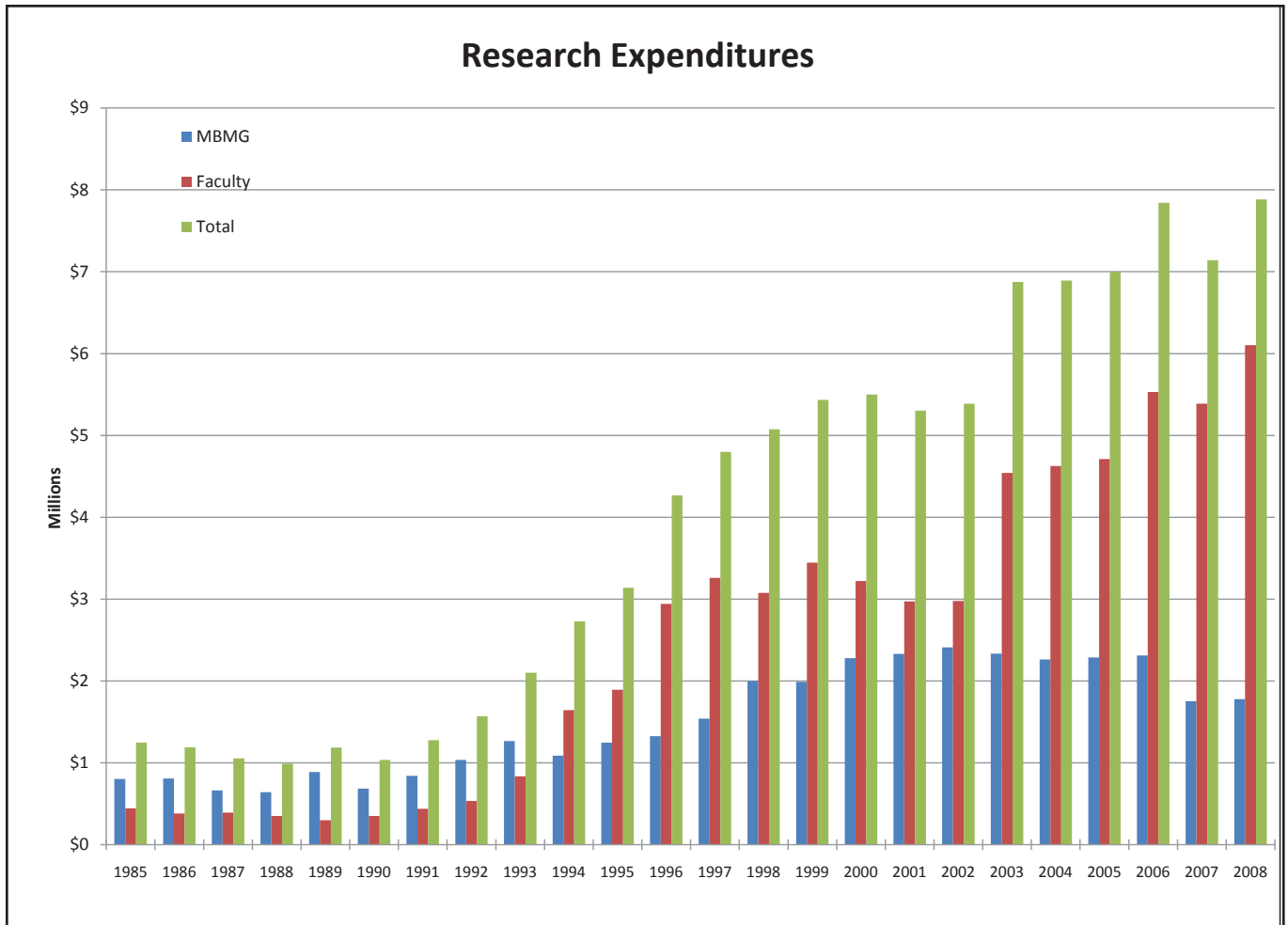


FIGURE 8.A.1: MONTANA TECH RESEARCH EXPENDITURES – 1985-2008

The Montana Tech campus participates in the NSF Research Facilities survey. As reported in the last survey of 12/13/2007, the campus had 23,222 square feet of net assignable research space. Campus research space is of mixed quality. Newest facilities are state-of-the-art with excellent equipment. Other space is older, but in general adequate for the function. In the NSF survey of this space, 50% to 90% was in satisfactory condition depending on the field of science and engineering involved. A 1998 renovation project and a recent new construction project have improved the space needs for three academic departments. The 1998 renovation to the Chemistry and Biology building added approximately 6,000 square feet of high-quality research space to these two departments, and the recent construction of the 55,000 square feet Natural Resources Building will provide state-of-the-art research space for the Petroleum Engineering program.

Other campus programs are still in need of space to keep pace with their growing research programs. The Research Office conducted a needs assessment with the graduate departments to determine their immediate and long range (five year)

SELF-STUDY 2010

requirements for both research space and for graduate student office space. Table 8.A.I describes the results of this assessment as reported by the academic departments as noted.

**TABLE 8.A.I: NEEDS ASSESSMENT TABLE
GRADUATE STUDIES AND RESEARCH SPACE**

DEPARTMENT	EXISTING SPACE IS ADEQUATE	ADD'L SPACE REQUIRED NOW (SQ FT)	ADD'L GRAD OFFICES REQUIRED NOW	ADD'L SPACE NEEDED BY 2013 (SQ FT)	ADD'L GRAD OFFICES NEEDED BY 2013
Biology	Yes	0	0	0	0
Chemistry	No	500	0	0	0
Electrical Engineering	No	1000	2	2000	4
Environmental Engineering	Yes	0	0	0	0
General Engineering	No	1000	4	2000	7
Geological Engineering	Yes	0	0	0	0
Geophysical Engineering	No	100	2	200	4
Metallurgy	No	2000	5	2000	5
Mining Engineering	Yes	0	0	0	0
Petroleum Engineering	Yes	0	0	0	0
Professional & Technical Comm.	Yes	0	0	0	0
Safety, Health & Industrial Hygiene	Yes	0	0	0	0
TOTAL		4,600 sq ft	13	6,200 sq ft	20

8.A.4 The management, maintenance, and operation of instructional facilities are adequate to ensure their continuing quality and safety necessary to support the educational programs and support services of the institution.

The Physical Plant recently purchased a new work order system which improves communication between physical plant personnel and requesting parties. This new system also prioritizes work and organizes staff and contractors. An additional benefit of this system is improved reporting, and tracking of project costs.

New construction and remodeling projects are often managed independently from the maintenance and operations staff. However, this group plays a key role in the design and programming efforts so as to align the new or improved space with the existing campus maintenance procedures. For example, Montana Tech has a common key hardware specification that will be used for all new doors. This influence prevents

the creation of multiple key systems appearing on campus requiring large inventory expectations for the Physical Plant.

Figure 8.A.2 demonstrates the students' satisfaction with the overall maintenance of North Campus facilities. The following graphs demonstrate the students' reaction to the specific questions presented in the Student Satisfactory Index survey.

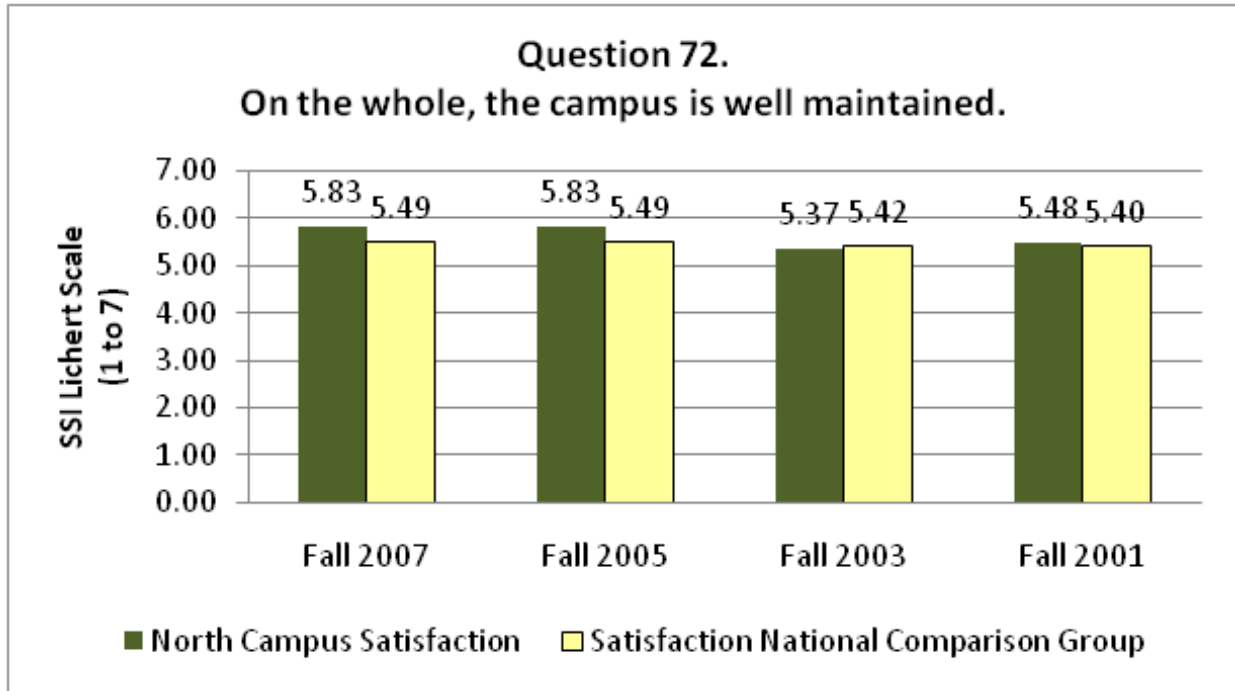


FIGURE 8.A.2: STUDENT SATISFACTION WITH NORTH CAMPUS FACILITIES

Figure 8.A.3 demonstrates the students' satisfaction with the overall maintenance of South Campus facilities.

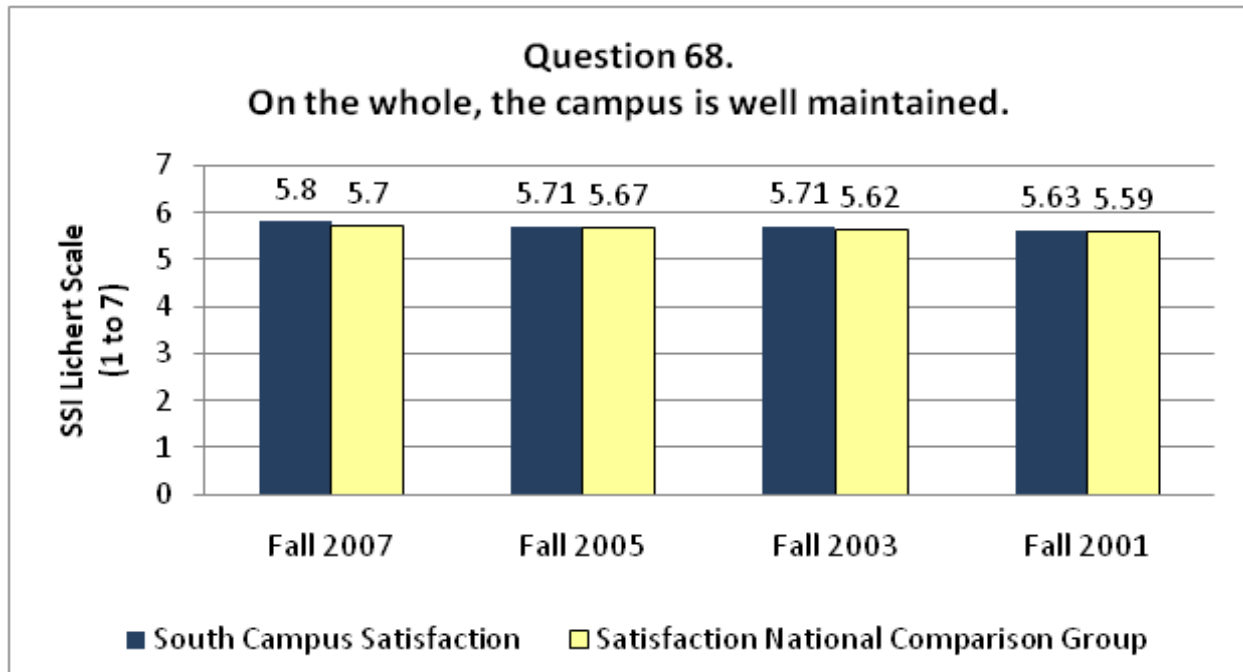


FIGURE 8.A.3: STUDENT SATISFACTION WITH SOUTH CAMPUS FACILITIES

8.A.5 Facilities are constructed and maintained with due regard for health and safety and for access by the physically disabled.

Montana Tech maintains an Office of Environmental Health and Safety. This office is charged with ensuring the safety and health of the campus community, assisting in the prevention and reduction of accidents, identifying and eliminating safety and environmental hazards and unsafe conditions, and ensuring the proper disposal of hazardous waste. The Director of Environmental Health and Safety also acts as the chair of the Campus Safety Committee.

The Campus Safety Committee makes recommendations to the Chancellor on issues of workplace safety in the areas of facilities construction and maintenance. Under the direction of the Safety Committee - and with the consent of the Chancellor - physical facilities implements recommendations made by the committee when funds are made available for smaller construction and renovation projects. However, for larger projects, Montana Tech uses the supervision of the State of Montana’s Department of Administration, Division of Architecture and Engineering, as required by Montana statute.

Recent examples of campus initiatives resulting from Safety Committee recommendations are the fire sprinkling systems in Montana Tech apartment housing, an emergency notification siren, an e-mail and texting emergency notice system, sidewalks, new curb cuts for accessibility, and radar speed limit signs.

Montana Tech also has a dedicated Campus Access Committee specifically charged with maintaining access for the physically disabled. This committee interprets and applies the standards of the Americans with Disability Act and is an active voice in all proposed building projects at Montana Tech. All new construction and renovations projects are completed per ADA standards. During 2007, the Office of Civil Rights conducted a compliance audit of accessibility on the Montana Tech Campus. Montana Tech is still awaiting the results of the OCR audit.

8.A.6 When programs are offered off the primary campus, the physical facilities at these sites are appropriate to the programs offered.

Montana Tech has a limited number of off-campus programs. In all cases, facilities for these sites are sufficient to support the following off-campus programs:

- » Montana Tech currently offers a business degree in Helena with the Helena COT as the host facility. Students in Helena and the surrounding area complete the last two years of their four-year program under the curriculum of Montana Tech. These courses are delivered face-to-face by Tech faculty, or technology is used to send the course online. A Helena COT faculty member directs this program for Montana Tech.
- » Montana Tech owns and operates a Mineral Research Center (MRC) south of the COT in Butte's Industrial Park. This center currently supports student clubs and organizations and serves as a satellite classroom for engineering programs. This facility is currently for sale with the proceeds intended to fund a future General Engineering Special Projects Building on the North Campus.
- » The Montana Bureau of Mines operates a satellite office in Billings, Montana located on the MSU-Billings campus.

8.A.7 When facilities owned and operated by other organizations or individuals are used by the institution for educational purposes, the facilities meet this standard.

Not Applicable

STANDARD 8.B - EQUIPMENT AND MATERIALS

Equipment is sufficient in quality and amount to facilitate the achievement of educational goals and objectives of the institution.

8.B.1 Suitable equipment (including computing and laboratory equipment) is provided and is readily accessible at on- and off-campus sites to meet educational and administrative requirements.

In order to remain a leader in both graduate and undergraduate education in engineering, science, energy, health, information sciences, and technology, Montana Tech continually updates the equipment in all of its educational, administrative, and athletic facilities. To facilitate this process, several funding sources are used to meet

SELF-STUDY 2010

short-term, mid-range, and long-term equipment goals. Generally this funding comes in the form of state current unrestricted funds and designated fee accounts. Table 8.B.I summarizes the use of current unrestricted equipment funding by program for both capital and minor equipment in FY 2005 through FY 2009.

TABLE 8.B.I: MONTANA TECH CURRENT UNRESTRICTED EQUIPMENT FUNDING

FISCAL YEAR		05	06	07	08	09	GRAND TOTAL
INSTRUCTION	Capital Equipment	\$12,332	\$162,289	\$39,313	\$420,758	\$220,645	\$855,336
	Minor Equipment	\$27,420	\$40,504	\$43,489	\$121,370	\$190,758	\$423,541
INSTRUCTION TOTAL		\$39,752	\$202,792	\$82,802	\$542,128	\$411,403	\$1,278,877
ACADEMIC SUPPORT	Capital Equipment	\$32,979	\$34,331	\$35,452	\$33,737	\$46,261	\$182,761
	Minor Equipment	\$977	\$2,904	\$7,692	\$16,245	\$10,373	\$38,192
ACADEMIC SUPPORT TOTAL		\$33,956	\$37,236	\$43,144	\$49,981	\$56,635	\$220,952
INSTITUTIONAL SUPPORT	Capital Equipment			\$0	\$11,302		\$11,302
	Minor Equipment	\$14	\$8,623	\$3,757	\$28,974	\$15,854	\$57,221
INSTITUTIONAL SUPPORT TOTAL		\$14	\$8,623	\$3,757	\$40,275	\$15,854	\$68,523
STUDENT SERVICES	Capital Equipment	\$0	\$2,797			\$7,500	\$10,297
	Minor Equipment	\$2,103	\$9,203	\$14,102	\$36,336	\$24,887	\$86,630
STUDENT SERVICES TOTAL		\$2,103	\$12,000	\$14,102	\$36,336	\$32,387	\$96,927
OPERATION/ MAINTENANCE PLANT	Capital Equipment	\$17,078	\$3,196	\$6,745	\$0	\$19,000	\$46,019
	Minor Equipment	\$4,127	\$10,243	\$29,442	\$21,291	\$8,062	\$73,164
OPERATION/MAINTENANCE PLANT TOTAL		\$21,205	\$13,439	\$36,187	\$21,291	\$27,062	\$119,183
Grand Total		\$97,030	\$274,090	\$229,291	\$690,012	\$543,340	\$1,833,763

CURRENT UNRESTRICTED FUNDING

Individual departments are allocated operating funds every fiscal year. These operating funds may be allocated at the department's discretion for use on equipment as the need arises. Typical examples of fund usage include minor office equipment and laboratory and classroom equipment.

Another source of current unrestricted funding comes through the enrollment reserve. Assuming enrollment targets have been met, the Executive Budget Committee determines if there are any available funds to allocate to the campus. If funds are available, the committee solicits campus requests for one-time-only funding. After the requests are received, an ad-hoc prioritization committee ranks the requests based on merit and need and makes recommendations on distributing the funds.

During the past two legislative sessions, the State of Montana has released surplus budget amounts to state agencies through a competitive proposal process that ranked requests based on merit and need. As a result of that process, Montana Tech received special state one-time-only funding for developing a Pre-Apprenticeship Lineman program at the College of Technology, Petroleum Engineering Simulation Laboratory Equipment, Mining Engineering Paste Backfill Laboratory Equipment, high-performance computer funding, new lathes for the College of Technology, and Nursing Academy funding.

DESIGNATED FEE ACCOUNTS

Several designated fee accounts are dedicated to laboratory equipment and computing equipment. One such fee account is the Computer Use Fee. This fee is used for equipment, software, maintenance, or related items which will benefit instructional programs. The use of this fee is determined through annual meetings of the Computer and Telecommunications Advisory Committee. This committee meets on and approves a computer use plan that is projected out for the next five years. This plan focuses on replacing all workstations in computer labs at least once every four years. The plan also contains allocations for network/departmental servers, software, paper and toner, and lab printers. There is a separate computer fee and plan for both the North and South Campuses, which can be found in Exhibit 8.B.I – [*North Campus Computer Fee Plan*](#) and Exhibit 8.B.II - [*South Campus Computer Fee Plan*](#).

The departmental network services coordinators are in a strategic position to recognize the educational and administrative requirements of the constituencies that they serve and consistently bring recommendations to the committee for timely consideration. Recommendations typically include which workstations and servers to replace, recommendations for software and support, as well as any individual departmental needs not addressed by the plan. The coordinators also work closely with department heads and deans to make recommendations on workstation specifications

SELF-STUDY 2010

and requirements which are based on the specific educational needs of the department.

The campus also uses a Technology Fee to support the technology infrastructure for academic and administrative systems. Annually, the workstation needs of the faculty and staff are assessed, and replacement workstations are made from the technology fee account. Montana Tech strives to replace faculty and staff workstations at least once every four years. The Technology Fee is also used to purchase academic software and personal electronic devices for campus use, to repair and maintain network services, and to support campus online services. Exhibit 8.B.III – [Montana Tech Technology Fee Report](#) summarizes the activity in this account over the past fiscal year.

Major laboratory and educational equipment purchases are funded through the Equipment Fee. There are separate Equipment Fees for the North and the South campuses. Annually, the deans contact department heads and request a list of equipment needs for the upcoming fiscal year. The Deans Council then reviews the compiled list of requests and allocates funding for the upcoming year based on the projected fee revenue. The Vice Chancellor of Academic Affairs and Research oversees the process and regularly reviews the spending throughout the year. Should department requirements change through the year, the Vice Chancellor may reallocate funding in collaboration with the deans. Again, allocation of funding is based on the merit of the request and on the educational requirements of the academic programs. Activities of these accounts are in Exhibit 8.B.IV – [Montana Tech Equipment Fee Report](#) and Exhibit 8.B.V – [Montana Tech COT Equipment Fee Report](#).

An Academic Facility Fee is also assessed to students and is used to repay the bonds associated classroom projects (\$71,500 per year). Fees generated in excess of the bond payment are allocated to campus classroom improvement projects. If faculty or staff members recognize a need for classroom improvements, they submit a request to the Vice Chancellor of Academic Affairs and Research. Typically these requests include classroom furniture, such as tables, desks, chairs, and podiums as well as classroom fixtures, such as white boards, overhead projectors, and computer data projectors. The past five years of activity in this account is summarized in Exhibit 8.B.VI – [Montana Tech Academic Facility Fee Report](#).

Table 8.B.II below summarizes funds utilized from FY 2005 through FY 2009 from designated fee accounts.

TABLE 8.B.II
MONTANA TECH DESIGNATED FEE ACCOUNT EQUIPMENT FUNDING

FEE ACCOUNT	FY05	FY06	FY07	FY08	FY09
Equipment Fee (BEQMTF)	\$207,288	\$238,874	\$294,073	\$264,819	\$272,014
Computer Fee (BCOMPU)	\$183,556	\$383,912	\$275,984	\$216,827	\$215,402
Academic Facilities Fee (BAFMGB)	\$42,590	\$19,908	\$33,029	\$45,196	\$102,981
Technology Fee (BTECFE)	\$184,161	\$161,655	\$157,882	\$227,763	\$307,596
COT Equipment Fee (BCEQPF)	\$48,251	\$66,554	\$57,485	\$72,160	\$67,664
COT Computer Fee (BCCMPF)	\$42,809	\$56,648	\$68,650	\$47,715	\$50,810
Total	\$708,655	\$927,551	\$887,103	\$874,480	\$1,016,467

NETWORK SERVICES

Montana Tech has 11 main instructional computer labs at the North Campus and 7 main instructional computer labs at the College of Technology (COT) South Campus. In addition to the main instructional labs, several department labs are available for student use. The departmental labs not only have the core software, but also software specific to a particular discipline. A complete list of software for the labs is listed in Exhibit 8.B.VII - [North Campus Computer Lab Software Inventory](#) and in Exhibit 8.B.VIII [South Campus Computer Lab Software Inventory](#).

Students are encouraged to use these labs for word processing, business applications, engineering design projects, and for data analysis. Instructional labs are available for general use during non-scheduled class time, and scheduled instructional class times are posted outside each lab. The student computer availability at the College of Technology consists of 7 computer rooms with at least 24 seats and the Learning Center/Library with 23 seats. The seven computer rooms are scheduled for classes, but are open for general use outside of those times, from 7:00 a.m. until 9:30 p.m. weekdays only. The Library is open between 8:00 a.m. until 5:00 p.m. weekdays.

All students are assigned a user account and an e-mail mailbox prior to the close of registration. This account remains with students throughout their academic career. Students can obtain help on e-mail and computer use from each college's Computer Coordinator, from the CTS help desk, or from the Network Help Desk. Each College on the North Campus and the South Campus is represented by a Computer Coordinator who is responsible for the hardware and software installation and troubleshooting in the computer rooms and for faculty and staff. These coordinators are responsible for hardware and software upgrades and for replacements as needed. These coordinators play a vital role in determining the technology needs of Montana Tech as they are familiar with the pulse of the faculty, staff, and students they are assigned to support.

Montana Tech's microcomputer teaching labs are on a four-year rolling replacement schedule. Machines that are taken from these labs are used in auxiliary non-teaching labs to replace and upgrade older less powerful machines. Faculty and staff computers are upgraded as the need arises, typically on a four-year replacement rotation.

TELEPHONE SERVICES

Montana Tech Telephone Services provides modern digital and analog telephone switching, direct distance dialing, and radio dispatch services for Montana Tech. The current Northern Telecom switching platform, located in a secure area of Centennial Residence Hall, was constructed with the building in 1999 and serves as the Butte Node for the State of Montana Information Technology Services Division. Satellite Switches located at the South Campus and at Montana Tech Family Housing are part of the Montana Tech system, while Butte Social and Rehabilitation Services, Butte-Silver Bow

SELF-STUDY 2010

County Local Government, and a plethora of other State Offices in Butte are networked through the Montana Tech Switch.

Montana Tech Telephone Services is located within the Physical Facilities Department of Montana Tech and employs one full-time Manager/Technician and one part-time Switchboard Operator. Part-time student help is also heavily relied upon.

Telephone Services is further divided into several functions: Budget and Management, Construction; Installation and Maintenance; Records; Emergency Response, and Auxiliary. The Budget for Telephone Services is based on charge-back to requesting departments. Currently each access line on campus is charged \$10.00 per month or \$120.00 annually. Both digital and analog switched services are available.

Outside plant cable is buried by Physical Facilities in consultation with Telephone Services. During the last five-year period, an average of 600 linear feet of 400 pair cable plant has been buried during the construction season, the months of June and July. Telephone Services designs and splices outside plant cable.

Network Services now manages inside cable plant by using generic Category 5E or Category 6 patch panels. Currently, most buildings have been rewired by certified contractors. When ordered, the Telephone Technician extends telephone connections from the Telephone Point-of-Presence through the patch panel to the requisite jack.

Repair and Move/Add/Change orders are received via e-mail or telephone call. Most work orders are completed the day they originate. Telephone Services also maintains a web page which details policies and operation guides for analog and digital telephones, voice mail, and for long-distance dialing.

Local paper directories, software listings, and the State Government Telephone Directory are contributed to or published annually or semi-annually by the department – these directories are also available in electronic format. Numerous cable maps, records, and databases are continuously updated. Both the basic switch programming and the state long-distance access records are managed locally.

Campus Security and Physical Facilities relies upon Telephone Services to license, install, and maintain its two-way-radio systems. The system includes the main repeater, emergency equipment located in the Security Patrol Car, and numerous handheld radios carried by Facilities and Safety personnel. Telephone Services maintains a relationship with Butte Silver Bow Law Enforcement which allows Campus Security to directly contact Butte Dispatch by radio in the case of an emergency. Montana Tech is also licensed by the State of Montana to use Mutual Aid Frequencies.

Telephone Services maintains the Telephone E-911 system and updates the ALI Emergency Response Data Base so that the origin of calls going to 911 Emergency Services can be located on campus.

Upon request, lectures are presented to academic classes on Telephone and Electronic Technology. The last five year period has seen continued growth of Switch and Outside Plant Cabling. The current switch room located in Centennial Hall is at capacity. It is estimated that only 10% of resident students use the campus wired

telephones, preferring to communicate via their own wireless cell phones instead. A “technology fee” covering telephone service, voice mail, and internet access will continue to be assessed to each resident student, but telephone and voice mail service will only be applied on a requested basis.

8.B.2 Equipment is maintained in proper operating condition, is inventoried and controlled, and replaced or upgraded as needed.

Montana Tech has adopted the asset management procedures established by the asset management group of The University of Montana. *The University of Montana Capital Asset Procedures* are in Exhibit 8.B.IX. Responsibility for fixed asset accounting and management resides with the Associate Director of Budgets and Purchasing. Equipment purchases of more than \$5,000 and with a useful life of more than one year are considered capital assets. On a monthly basis, the fixed asset manager in Missoula runs a report listing purchases over \$5,000 and charged to capital accounts for all four of The University of Montana affiliated campuses. The asset manager at each individual location determines if the purchase is a capital asset. If it is a capital asset, a property control tag is prepared and attached to the asset, and the item is capitalized in the fixed assets module of Banner. On a quarterly basis, a complete capital asset listing is generated by the fixed asset manager for The University of Montana and is distributed to the affiliated campuses as shown in Exhibit 8.B.X – *Montana Tech Fixed Asset Listing*. Periodic reminders are sent to the campus to remind them that any disposal of assets must be coordinated through the Associate Director of Budgets and Purchasing. A physical inventory of assets is performed at least every other year. The Associate Director has in place a rotating schedule which ensures assets are inventoried per auditor recommendations.

Montana Tech has several different funding mechanisms for the acquisition, maintenance, and operation of equipment and property. There is a student fee for computer equipment. A five-year computer plan delineates classroom lab equipment, software, printers, and servers. Generally, computer workstations and servers are on a four-year rotation. Also, a technology fee funds faculty and staff workstations which are also on a four-year rotation. An equipment fee is used for classroom and lab equipment. Requests for use of these funds are submitted on an annual basis, prioritized, and awarded at the beginning of the fiscal year. Montana Tech also has an academic facilities fee for required improvements to classrooms.

Montana Tech receives state funds for the maintenance and operation of plant. A plant service shop takes internal requests for maintenance and internally charges departments for the use of those services. State funding includes appropriations for grounds keeping and general maintenance to the campus. For larger capital building projects, the Director of Physical Facilities, the Vice Chancellor for Academic Affairs and Research, and the Vice Chancellor for Administration and Finance from Montana Tech work with their counterparts from other University of Montana campuses and determine a list of long range building priorities. A prioritized list is submitted by The University of Montana and Montana State University to the Board of Regents for review

SELF-STUDY 2010

and approval prior to being submitted to the Department of Administration, Division of Architecture and Engineering, for legislative action. Once incorporated into the long range building program, building projects are funded through state funds, private donations, revenue bonds, and through other revenue sources.

The State of Montana has adopted a capitalization threshold of \$5,000 for individual pieces of equipment. Individual pieces of information technology equipment typically fall below this threshold, and as such, are not routinely inventoried and controlled as part of the capital asset process. However, each individual computer coordinator maintains a list of equipment that they are responsible for supporting. Annually, as part of the Computer Use Fee planning processing, these inventories are updated and replacements are recommended to the Computer and Telecommunications Advisory Committee.

Each college maintains an operating account for the repair, maintenance, and



support of information technology equipment within their school.

Administrative departments are generally responsible for the repair and maintenance of equipment in their areas.

Departments may use outside vendors to repair

and maintain equipment in their areas, or may use the campus resource for repair and maintenance. The Plant Service Shop is operated by the Physical Facilities department and focuses primarily on small improvements or repairs to facilities. However, the group assists in installing office furniture and equipment and some laboratory equipment such as refrigerators and lab hoods. These repairs and maintenance are performed by Montana Tech staff and, in some instances, charged to the department requesting maintenance.

Routine maintenance of equipment is also achieved through maintaining Repair & Replacement (R & R) accounts. R & R accounts, or Life Cycle accounts, are plant funds set aside specifically for routine repair and replacement of equipment. Plant fund R & R accounts are funded through service revenues which are generated by the service provided. Examples of Plant R & R accounts include Motor Pool, Physical Plant R & R,

Telecommunications R & R, Technology R & R, and HPER Expansion R & R.

Plant R & R accounts are also funded through auxiliary enterprises for the repair and replacement of equipment in those areas, which include Dining Services R & R, Student Union Building R & R, Bookstore R & R, and Residence Hall R & R. These accounts may be set up and funded through a variety of sources when an individual need arises, such as the Auditorium Sound System account, Bookstore Registers account, and the Engineering Hall Lab Renovation account. A complete listing of R & R accounts and their year end balances is shown in the attachment section. (Exhibit 8.B.XI)

8.B.3 Use, storage, and disposal of hazardous materials are in accordance with the institution's prescribed procedures.

The use, storage, and disposal of hazardous materials at Montana Tech are under the purview of the Environmental Health & Safety Department. The mission of Environmental Health & Safety Department is:

- » to provide for the health and safety of the campus community;
- » to assist in preventing or reducing accidents;
- » to identify and eliminate safety and environmental hazards and unsafe conditions; and
- » to ensure proper disposal of hazardous waste.

HAZARDOUS MATERIALS MANAGEMENT

Because various academic and research programs use chemicals on both Montana Tech campuses, Montana Tech maintains a fairly large inventory of chemicals. The Director of Environmental Health and Safety (EH&S) manages the hazardous materials program.

The following outlines both the Montana Tech hazardous materials and hazardous waste management programs as well as the radiation safety program.

As stated in the Montana Tech Hazard Communication Program, all laboratories that use and/or store chemicals are required to have a copy of the Chemical Hygiene Plan readily accessible, along with copies of the material safety data sheets (MSDS's) for each chemical in the lab or storeroom.

In general, flammable and corrosive chemicals are stored in appropriate cabinets, and other chemicals are stored on shelves by compatibility, with a lip to prevent them from falling off the shelves. Both campuses also store and use a variety of janitorial supplies; however, these are not tracked through the chemical inventory system.

All other chemicals are managed and tracked through a chemical software management program called ChIM (Chemical Inventory Management). Each department at Montana Tech has a chemical acquisition manager (CAM) who is the "gatekeeper" for all chemical acquisitions. Everyone (faculty, staff, and students) must go through a CAM to acquire chemicals. The CAM has the following responsibilities

SELF-STUDY 2010

when a user requests a chemical:

1. Check EPA's "p-list" to see if the material is an acutely hazardous material. If it is, the user is asked to use a less hazardous material if possible.
2. Check the campus chemical inventory to see if the material is already available on campus for the person who needs the chemical.
3. Request the purchase order number or use Procard and order the chemical(s) requested.
4. Receive the chemical when it arrives, add the chemical to the campus inventory by placing a bar code sticker on the container, and then enter all the pertinent information into the computer system.
5. Ensure that the MSDS was received and distribute it to the appropriate person and then enter it in the MSDS file or book.
6. Distribute the chemical to the user for proper handling and storage.
7. When a container is empty, remove the chemical from the computer inventory and give the bar code number from the empty container to the CAM.
8. Make the appropriate changes in the computer if a chemical is redistributed to another person or department or if it is disposed of as hazardous waste.

The ChIM program allows easy access to Tech's entire chemical inventory. Information can be retrieved by at many levels - campus, building, department, or room. Chemicals can be looked up by bar code number or by name. Currently, all CAMs and the Director of Environmental Health and Safety have access to the ChIM system. Limited access is granted to other individuals on an as-needed basis.

A complete copy of [*Montana Tech's Hazardous Materials Management Plan*](#) (Revised: Dec 2009) is included in Exhibit 8.B.XII.

TRAINING

All students enrolled in a lab where hazardous materials are used or where a potentially hazardous environment exists are required to do an online lab safety training session every semester. This program is run through Blackboard, and instructors require students to complete the training and pass a test with a 90 percent before they are allowed to work in the laboratory. Test records are maintained in the EH&S Office.

Another online safety training program was offered for the first time during the Fall of 2008. This training has been used for all faculty, staff, and students who work on projects. Currently, over 40 safety training topics are available through this program. A copy of the [*Hazard Communication Program*](#) (Updated: Dec 2009) is in Exhibit 8.B.XIII.

HAZARDOUS WASTE

Montana Tech's hazardous waste program is also managed by the Director of Environmental Health and Safety. When departments or individuals have waste to dispose of, EH&S is called, a Montana Tech internal manifest is completed, and the materials are then transferred to the hazardous waste storage room which is located in the Chemistry/Biology Building. Here the materials are labeled as hazardous waste and are added to the inventory of hazardous waste. All containers are stored in cabinets appropriate for the waste until shipping time. The storage room maintains 10 air exchanges per hour for ventilation and is kept under negative pressure in the event of a chemical release or spill.

Montana Tech is currently classified as a conditionally exempt generator of hazardous waste and has not shipped hazardous waste since Fall of 2009. Our waste minimization program has been very effective.

RADIOACTIVE MATERIALS

The Director of EH&S serves as the Montana Tech Radiation Safety Officer. Currently, the campus does not have radioactive sources that are in permanent storage. Also, Tech has two departments that use x-ray machines. All employees who work in the areas with the x-ray machines are required to wear radiation badges or have the area badged. These badges are sent in for analysis every three months.

Montana Tech currently has no faculty who are working with radioisotopes and has no plans to work with radioisotopes in the immediate future. Exhibit 8.B.XIV contains the [Radiation Safety Manual](#) (Updated: November 2005).

STANDARD 8C - PHYSICAL RESOURCES PLANNING

8.C.1 The master plan for the campus physical development is consistent with the mission and the long-range educational plan of the institution, and the master plan is updated periodically.

The Campus Master Plan was developed specifically to sustain the mission of Montana Tech: To meet the changing needs of society by supplying knowledge and education through a strong undergraduate curriculum augmented by research, graduate education, and service. Montana Tech's mission would not be possible without the ongoing maintenance and development of its physical facilities. Accordingly, the Campus Master Plan details both the physical growth and the renovations planned for the campus so that Tech can fulfill its mission and achieve the goals in the strategic plan.

The Strategic Planning Committee provided the overall leadership necessary

SELF-STUDY 2010

to complete the campus Master Plan. As a sub-committee of the Strategic Planning Committee, the Master Plan Committee is tasked with developing and updating the master plan document, which itself includes plans for new construction, renovations, and for acquisition of use of real property. The Master Plan Committee meets at least monthly and meets with constituent groups external to Montana Tech to solicit feedback. In the Fall of 2009, this group met both with neighbors of Montana Tech and with Butte Silver Bow officials to present the anticipated growth plan and its impact on the community surrounding the campus.

A major tool for communicating this plan is a document called *Vision 2025*, included in Exhibit 8.C.I. Of importance in this document is the diagram which shows building locations as anticipated for the future. Included in the campus planning are the 57 plus acres of land recently donated by ARCO. This property has almost doubled the North Campus footprint and provides the campus with increased opportunities for expansion. A graphic representation of the *ARCO Land Acquisition* is displayed in Exhibit 8.C.II.

Moreover, the State of Montana is in the process of implementing a facilities condition inventory for all state buildings. Montana Tech is currently entering data into the spreadsheet which will be used by the Governor's Budget and Program Planning Office to plan for renovating and constructing buildings with state Long Range Building Program funds.

8.C.2 Physical facilities development and major renovation planning include plans for the acquisition or allocation of the required capital and operating funds.

Authority to construct buildings is granted to the Department of Administration of the State of Montana as covered in Exhibit 8.C.III *Montana Code Annotated 18.2.102*. The State of Montana manages all new construction and most major renovations through the Division of Architecture and Engineering (A & E). A & E is a division of the Department of Administration and therefore reports directly to the Governor's Office.

At Montana Tech, planning starts at the departmental level with the department head presenting the department's budget and facilities requirements to the Executive Budget Committee. These requested items are then prioritized for later presentation to the Facilities Committee at The University of Montana. A copy of the *Long Range Building Program Priority List* is included in Exhibit 8.C.IV.

The Facilities Committee (which includes Montana Tech's Director of Facilities, Vice Chancellor for Academic Affairs and Research and the Vice Chancellor for Administration and Finance) considers requests from the four affiliated campuses of The University of Montana before submitting a prioritized list to the President of the University of Montana. The President discusses priorities with CEOs from the affiliated campuses and forwards it to the Commissioner of Higher Education.

Once at the Commissioner's Office, the prioritized lists from the four campuses of The University of Montana and the four campuses of Montana State University are then combined by the Commissioner. Next, the two Vice Presidents, at the large campuses, and the Deputy Commissioner for Fiscal Affairs prepare a prioritized list of projects for

all campuses to be submitted to the Board of Regents.

At the May meeting in even-numbered years, the Board of Regents approves a prioritized list of projects that is submitted to the Governor's Budget Office. In November of even-numbered years, the Governor publishes the recommended budget that goes to the Legislature for its consideration. This proposed budget includes capital projects for the entire Montana University System as well as for other state agencies. If the Legislature appropriates funds to a capital project, A & E manages the project with campus input ranging from programming to, in some cases, major oversight of the project. A description of the [*Montana University System LRBP Process*](#) and current projects list is in Exhibit 8.C.V.

A recent example of an approved Long Range Building Projects (LRBP) that illustrates this process is the Natural Resources Building that was completed in December of 2009. The request for a new building to house the Bureau of Mines and Geology (a State agency that is an integral division of Montana Tech) also included a renovation of the Petroleum Engineering Building on the campus LRBP request list. However, during several very lean Legislative sessions, little money was appropriated for capital improvements. After Montana Tech was not funded for a new building and a renovation in the 2003 Legislative session, A & E recommended that Montana Tech build one building to accommodate both the Bureau of Mines and Geology and the Petroleum Engineering Department. The 2005 Legislature appropriated \$9 million for this building with a provision that Montana Tech raise as much as possible from private sources. The 2007 Legislature appropriate an additional \$5.2 million, the campus contributed \$1.2 million, and the Montana Tech Foundation raised \$2 million in private funding for a total of \$17.4 million to spend on construction of this building. The actual cost of the building was about \$15.4 million. The remaining \$2 million was reallocated to other buildings including the renovation of the former Petroleum Engineering Building which will become the Health Sciences Building.

An example of a project funded through the internal budgeting process mechanism is the Special Projects Building for General Engineering. This proposal was first brought to the Executive Budget Committee by the General Engineering Department Head during budget hearings in the Spring of 2009. The request was for a 7,235 square foot metal building with an estimated cost of about one million dollars. This building would be used as an instructional lab and project facility for engineering students. Funding for this project will become available when Montana Tech sells its property located in the Butte Industrial Park. This project will be funded internally.

As Montana Tech looks to the next legislative session in early 2011, the following items represent a few significant renovation or construction projects that will require Legislative Appropriations:

- » Complete renovation of the former Petroleum Engineering Building which will become the Health Sciences Building to house Nursing and Outreach Programs. The estimated cost of completing this project is \$3 million.
- » Renovate the Montana Tech Library (Phase I). Campus funds are available to

SELF-STUDY 2010

plan for this renovation. The estimated total cost is \$9 million; however, Phase I of this renovation can be done for \$3 - 5 million.

- » Modernize Main Hall and bring it into code compliance. This project is estimated to cost over \$20 million. A separate engineering study will be done during 2010 to determine the extent of the building foundation work required.
- » Construct a new College of Technology Building on the North Campus property. The estimated cost of this 100,000 square foot facility is \$35 million. Part of this may be funded from the sale of the current COT building and the adjacent 40 acres of prime commercial property.

Examples of a priority list of renovation and construction projects that do not require Legislative action include:

- » Renovating the Health Physical Education and Recreation Building (HPER). This \$3 million project began in late 2009 and should be completed in late 2010. It is a renovation and expansion of the HPER and is funded by a 15-year student fee to repay a \$2.7 million loan.
- » Constructing a new Residence Hall. Montana Tech is over subscribed in its residence halls. A new residence hall with 100 beds will be constructed with funds from the sale of bonds which will be repaid from rent on this building.
- » Building a new Math and Science Academy Residence Hall. If the Montana Academy of Math and Science is funded, Montana Tech will need a residence hall to accommodate 40 high school juniors and seniors as well as house parents and other support personnel. This residence hall will need to be built in part with private or grant funds in order to keep rent prices reasonable.
- » Constructing a Research Building. This building is in the very early stages of planning. The proposal is to obtain either Federal funding or private funding or a combination of these to build the building. The primary theme of the facility is energy research with an emphasis on how to better use our current energy resources while simultaneously developing new resources.
- » Developing additional parking space. This is a major issue and is being addressed with temporary parking in several locations. More permanent parking including a possible parking garage is under consideration to conserve available space.
- » Expanding the campus recreational fields. As the availability of space within the campus core becomes more challenging, it will be necessary to relocate recreation fields to the south or southwest of the campus.

For each new building or expansion of an existing building, Montana Tech is required to submit a form that calculates the operation and maintenance (O & M) cost of the new facility. Tech must designate how the O & M will be paid. If the facility is a state supported facility, the cost of O & M must be approved as a part of the Legislative approval process. For each of the capital projects listed above, the method of acquiring the necessary funding has been designated. In late Fall of each even-numbered year, Montana Tech hosts a reception for the various Legislative delegations in the region and presents them the campus needs to be considered in the Long Range Building Planning

Committee of the Legislature. These elected officials have historically been very responsive to these needs. In legislative sessions when LRBP funding has been available for appropriation, Montana Tech has generally fared well.

8.C.3 Physical resource planning addresses access to institutional facilities for special constituencies including the physically impaired and provides for appropriate security arrangements.

Montana Tech uses a Campus Access Committee to address issues of access to institutional facilities. This committee addresses concerns of access to new facilities, assesses the needs of current facilities, and makes recommendations. A good example of how this committee functions may be seen in the planned renovation of the former Petroleum Engineering Building into the Health Sciences Building. The Campus Access Committee identified the problem of accessibility in the current Petroleum Engineering Building. Consequently, one of the primary goals is to make the building completely ADA accessible. This planning includes, but is not limited to, installing an elevator to make all floors accessible and installing ADA accessible bathrooms on all floors.

In addition to the example mentioned previously, the LRBP funding normally includes funds for ADA Access and for Code Compliance projects. The Campus Access Committee provides input when allocating funds appropriated by the Legislature for these projects. The Campus Access Committee has an extensive document which includes a list of potential projects for completion on campus. This document is updated as needed and is included in Exhibit 8.C.VI *ADA Self-Evaluation and Transition Plan*. Other examples of where campus accessibility of the campus has been improved include installing sidewalk cuts and building ramps.

Campus security is coordinated through the physical facilities office. Montana Tech uses a contracted security service with officers dedicated specifically to the Montana Tech campuses. A security officer physically patrols the Montana Tech campuses 24/7. The Campus Security officers play a wide-ranging role at Tech, patrolling the campus and assisting students and staff whenever and in whatever way they can. Officers provide such services as investigation of thefts, handling of alcohol-related or other behavior problems on campus, parking control, and crowd control at games and concerts. Officers are trained in crisis management and advanced first aid.

8.C.4 Governing board members and affected constituent groups are involved, as appropriate, in planning physical facilities.

The Board of Regents of Higher Education of Montana is involved in all decisions to build or renovate facilities on campuses of the entire Montana University System. During the planning stage, the Board of Regents is directly involved because of the need to make presentations at several Legislative sessions before the Legislature actually funds the project.

At a minimum, the Division of Architecture and Engineering (A & E) is involved with the planning of building and any major renovations for all state buildings. In most cases, someone from A&E manages the entire project for the campus. Supervision of

SELF-STUDY 2010

small construction projects (under \$75,000) may be overseen by the individual campus as allowed in [Montana Code Annotated 18-2-103](#), Exhibit 8.C.VII. Smaller capital projects between \$75,000 and \$100,000 can be approved by the Office of the Commissioner of Higher Education (OCHE) and managed at a campus level.

In conclusion, capital projects involve a programming phase in which all the users are heavily involved. As described above, the on-campus community is involved at the very early stages of planning for growth. The same principle applies to those living near the campus if they are likely to be impacted by capital projects. An excellent example of community input occurred during the planning stage for the Montana Tech Arch on Park Street. During the planning stage, all the neighbors to Montana Tech's North Campus were invited on campus for lunch to discuss how this project would impact them and their property. Bob and Pauline Poore were the primary donors and had originally asked that the arch be named the Mansfield Arch as an east entrance to the campus where Senator Mike Mansfield had first attended college. At the luncheon, the neighbors strongly urged the Bob & Pauline Poore to name it the "Montana Tech Arch." Thus it's called the "Arch."

REQUIRED DOCUMENTATION

Campus Maps – [North](#) and [South](#) campuses



S STANDARD 9 - INSTITUTIONAL INTEGRITY



INTRODUCTION

Of the many expectations stakeholders have of an institution of higher learning, none is more important than the institution conduct all of its activities - whether in the classroom, in the laboratory, in the boardroom, or on the playing field - according to the ethical norms established for it both by law and by time-tested best practices. Montana Tech continuously strives to meet this expectation in all of its activities. The faculty, administration, staff, students, and others associated with Montana Tech are all expected to observe both the letter and the spirit of the promulgated standards of conduct which apply to them.

STANDARD 9.A - INSTITUTIONAL INTEGRITY

The institution adheres to the highest ethical standards in its representation to its constituencies and the public; in its teaching, scholarship, and services; in its treatment of its students, faculty, and staff; and in its relationships with regulatory and accrediting agencies.

9.A.1 The institution, including governing board members, administrators, faculty, and staff, subscribes to, exemplifies, and advocates high ethical standards in the management and operations and in all of its dealing with students, the public, organizations, and external agencies.

The importance that both the Montana University System and Montana Tech place on institutional integrity is reflected in the numerous policies and procedures that address the ethical and professional conduct of administrators, faculty, staff, and of students. In addition to these policies and procedures, many members of the faculty and staff, as licensed or registered professionals in their specific disciplines, voluntarily subscribe to codes of professional conduct that are explicit and, in many cases, legally binding. Moreover, various segments of the institution also subscribe to codes of conduct appropriate to their functions. For example, Student Services adheres to the American College Personnel Association – National Association for Student Personnel Administrators (ACPA-NASPA) Standard of Ethics, and the Business Office adheres to the National Association of College and University Business Offices (NACUBO) Code of Ethics.

As employees of the State of Montana, the administrators, faculty, and staff of Montana Tech are all subject to rules of conduct provided by law. [MCA § 2-2-103](#) prefaces these rules by stating that “the holding of public office or employment is a public trust, created by the confidence that the electorate reposes in the integrity of public officers, legislators, and public employees. A public officer, legislator, or public employee shall carry out the individual’s duties for the benefit of the people of the state.” Rules of conduct are specified in [MCA § 2-2-121](#) and are incorporated by reference in the [Montana Tech Faculty and Staff Handbook](#).

SELF-STUDY 2010

In addition to the statutory rules, additional rules of conduct are provided by the following key policies on ethical and professional conduct:

- » *Ethics Standards of Conduct for State Employees*. Issued by the Montana Department of Administration, this document covers the rules specified by [MCA § 2-2-121](#) and applies to all employees of the State of Montana. Clearly addressed are items such as conflicts of interest, gifts, and use of public property for private purposes.
- » *Code of Expectations for the Montana Board of Regents of Higher Education*. This statement, adopted by the Board of Regents in 2003, contains a set of principles imposed by the Regents on their own conduct.
- » **Equal educational and employment opportunity**. The equitable treatment of students, staff, faculty, and administrators is embodied in two closely related documents: the Equal Educational Opportunity and the Equal Employment Opportunity Statements, both of which are contained in the catalogs, in the student handbooks, and in the *Montana Tech Faculty and Staff Handbook*. In addition, the Minority and Gender Equity Achievement Plan and the Access for Persons with Disabilities, contained in the *2009-2010 Student Handbook and Calendar* (pages 142 and 146-147, respectively), further expand Montana Tech's commitment to these principles.
- » **Faculty Code of Conduct**. The Faculty Code of Conduct contained in Section II, paragraph 203 of the *Montana Tech Faculty and Staff Handbook* addresses how to handle conflicts between the institution and the community and conflicts within the institution. This code of behavior encourages responsibly exercised academic freedom in an atmosphere of collegiality and mutual respect, thereby furthering the mission and objectives of the institution.

Conflicts of interest. Issues associated with conflicts of interest are addressed in more detail in Standard 9.A.4 below. As discussed in more detail there, these policies help employees recognize and avoid those circumstances that cause conflicts of interest, and they ensure that any actual or potential conflicts of interest are properly reviewed and, where necessary, are managed according to applicable laws and regulations. Additionally, the Associate Vice Chancellor for Academic Affairs and Research recently completed a campus-wide project in which all faculty members were required to complete Montana Tech's *Conflict of Interest Disclosure Form*.

- » **Consulting services.** While recognizing the value of engaging in consulting activities, the Board of Regents also makes clear that teaching, research, and public service are the primary responsibilities of faculty members. Both Regents *Policy 401.1* and Section II, paragraph 219 of the *Montana Tech Faculty and Staff Handbook* (Exhibit 6.C.II) clearly spell out that permission must first be obtained for anyone to engage in consulting activities.
- » **Employment-related actions.** In addition to the equal employment opportunity statement referred to above, Section II, paragraphs 204 through 214, and various paragraphs in Section V of the *Montana Tech Faculty and Staff Handbook* all cover detailed procedures for employment-related actions.

- » **Intellectual property.** The development, ownership, and use of intellectual property is governed by [*Policies 401.2*](#) (on inventions and patents), by [*401.3*](#) (on copyrights), by [*406*](#) (on ownership of electronic course material), by [*407*](#) (on technology transfers to business entities), and by [*1901.1*](#) (on copying and use of computer software) promulgated by the Board of Regents and Section II, paragraphs 217 and 218 of the [*Montana Tech Faculty and Staff Handbook*](#).
- » **Research activities.** Research and other scholarly activities are addressed by a number of policies which are listed in the [*Principal Investigator's Handbook*](#) and in its associated supplement. Integrity in these particular activities is specifically addressed in [*A Policy to Assure the Integrity of Research and Scholarly Activity*](#). Moreover, several of the policies that deal with conflicts of interest also specifically apply to research activities and include the [*general policy on conflicts of interest*](#).

Student conduct. At the beginning of each academic year, each student is given a student handbook that lists expectations for conduct. Included are rules associated with privacy, safety, sexual harassment, with use of alcohol, drugs and tobacco, with use of facilities, firearms, and with information technology. The current edition of the handbook is the [*2009-2010 Student Handbook and Calendar*](#). Other documents addressing student conduct are:

- » [*College Community Expectations Program*](#). This document contains procedures to resolve any issues resulting from alleged infringements of individual rights that might arise from student conduct.
- » [*Student Judicial Program*](#). The student-run Judicial Board (J-Board) acts as a forum for students to settle disputes in a controlled environment. The Dean of Students oversees the J-Board where the majority of disputes are resolved by peers working together to adjudicate the situation.
- » **Academic dishonesty.** Section III, paragraph 308 of the Montana Tech Faculty and Staff Handbook, pages 25-26 of the [*Montana Tech 2009-2010 Catalog*](#), and pages 138-139 of the [*2009-2010 Student Handbook and Calendar*](#) all address the issues arising from academic dishonesty. Enrollment at Montana Tech is a voluntary act; by enrolling, a student enters an academic community and assumes the obligations and responsibilities of appropriate academic behavior required by the institution. These obligations and responsibilities are more specific than those imposed on citizens by civil and criminal law. Students who believe that the academic rules have been applied to them unfairly can ultimately appeal their cases to the Academic Standards Committee which is chaired by the Vice Chancellor for Academic Affairs and Research.
- » **Student Expectations.** Within the last year, the campus developed an "Academic Rights and Responsibilities Statement" that is included in the [*2009-10 Student Handbook and Calendar*](#). This statement addresses the students' rights on campus as well as the expectations that the campus has of them as Montana Tech students.
- » Right to privacy. The protections accorded to student academic records by the

SELF-STUDY 2010

Family Educational Rights and Privacy Act (FERPA) are restated on page 28 of the *Montana Tech 2009-2010 Catalog* and on page 140 of the *2009-2010 Student Handbook and Calendar*. They are further detailed in Section III, paragraph 306 of the *Montana Tech Faculty and Staff Handbook*.

Use of information technology. The use of information technology is governed by a series of policies issued by the Board of Regents and is further governed by a more detailed series of policies issued by Montana Tech's Campus Technology Services. The acceptable use of hardware, software, e-mail, and network resources; privacy; system security; and software piracy are all addressed by these policies.

9.A.2 The institution regularly evaluates and revises as necessary its policies, procedures, and publications to ensure continuing integrity throughout the institution.

The Board of Regents reviews and revises its policies and procedures as needed. Board of Regents Policy 103 assigns the responsibility for developing, issuing, and maintaining Board policies to its chief legal counsel.

To ensure their consistency with Montana Tech's mission and goals, their compliance with federal and state laws and regulations, and their conformity with the policies and directives of the Board of Regents, the Chancellor's Cabinet and various campus committees periodically review Montana Tech's policies and procedures. Usually, standing or ad hoc committees draft proposed changes to policies and procedures. Depending on content, any changes are then circulated to the Associated Students of Montana Tech, the Deans Council, the Faculty Senate, and finally to the general faculty for their review and comment. Finalized proposals are subsequently presented to the Chancellor for approval and implementation.

Representative standing committees are listed in Table 9.A.I below.

**TABLE 9.A.I
MONTANA TECH STANDING COMMITTEES**

REPRESENTATIVE STANDING COMMITTEES	
Academic Freedom and Tenure	Graduate Council
Academic Standards	Grievance
Campus Access	Marketing
Chancellor's Advisory	Professorship/Faculty Salary Supplement
Chancellor's Cabinet	Research Advisory
Computer/Telecommunications Advisory	Safety
Curriculum Review	Staff Senate
Faculty Advisory - College Relations	Student Disciplinary Appeals
Faculty Senate	Web Guidance

As new policies are added or as existing policies are modified, any additions or modifications are reflected on the website, in the *Montana Tech Faculty and Staff Handbook*, and in succeeding editions of the catalog and the student handbook.

CLOSING THE LOOP

On July 1, 2010, Montana Tech will be a Tobacco Free Campus. Tech was the first campus of the Montana University System that took this step. Numerous forums were held on campus as part of the process of evaluating whether or not the campus should take this step. Faculty, staff, and students were invited to offer their opinions as to whether or not the campus should become tobacco free. Montana Tech received an award from the State of Montana for being the first campus to move towards a tobacco free environment for its students, faculty, staff, and all parties visiting the campus.

9.A.3 The institution represents itself accurately and consistently to its constituencies, the public, and prospective students through its catalogs, publications, and official statements.

To ensure that Montana Tech consistently represents itself in a clear, concise, and accurate manner, the offices of Marketing and Public Relations, Enrollment Services, and Athletics cooperatively develop, distribute, and oversee all communications conducted through electronic and print media, including the website, all major publications, audio and video materials, and media relations. Prior to release, all externally-directed communications are rigorously edited and reviewed by the Director of the Office of Public Relations and Marketing to assure integrity and uniformity, usually following a thorough review by the Chancellor or appropriate Vice Chancellor. An example of Montana Tech's initiative to work with its constituents is provided in the *Vision 2025* document.

Montana Tech has several policies in place on communications with external constituencies. Section VI, paragraph 602 the [*Montana Tech Faculty and Staff Handbook*](#) provides that:

- » *Any member of the faculty or staff who expresses an opinion on a controversial subject shall preface his or her remarks so as to make clear that he or she is expressing a personal view and is not speaking on behalf of Montana Tech;*
- » *Any member of the faculty or staff who is asked to provide factual information in response to a request from an external constituency may do so, but must do so within the limits imposed by assigned responsibilities;*
- » *All public relations efforts are to be coordinated through the Director of the Office of Public Relations and Marketing; and*
- » *All statements representing the official position of Montana Tech shall come only from the Chancellor, the Director of the Office of Public Relations and Marketing, or from another individual designated by the Chancellor.*

Montana Tech also has adopted an advertising policy and a set of graphics standards, both administered by the Office of Public Relations and Marketing.

While Montana Tech continues to extensively publish recruitment and other publications in printed form, nearly all of these publications are also available on its website. In some cases, such as the catalog, the printed form of the publication is being phased out. This transition to electronic-only publications will permit Montana Tech to ensure the accuracy of its published materials while increasing their availability.

9.A.4 Institutional policy defines and prohibits conflict of interest on the part of governing board members, administrators, faculty, and staff.

Few items are more detrimental to the ability of an individual or an institution to carry out a mission effectively than the existence of a conflict of interest--regardless of whether that conflict is real or only perceived to be real. To avoid such conflicts, Montana statutes, Board of Regents policy, and Montana Tech policy all discourage or prohibit conduct that creates or gives the appearance of creating a conflict of interest.

As previously noted under Standard 9.A.1, [*MCA § 2-2-121*](#) covers rules of conduct for all employees of the State of Montana. Much of subsection 2 addresses conflicts of interest by prohibiting a public employee from:

- » *Using public time, facilities, equipment, supplies, personnel, or funds for private purposes;*
- » *Engaging in substantial financial transactions with any person whom the employee inspects or supervises in the course of official duties;*
- » *Assisting any person with fees, contingent fees, or other compensation in return for obtaining a contract, claim, license, or other economic benefit from the employee's agency;*
- » *Performing an official act that directly and substantially benefits a business or other undertaking in which the employee has a substantial financial interest or is engaged as agent, consultant, or counsel; and*

- » *Soliciting, negotiating, or accepting employment from a person whom the employee regulates in the course of official duties without first providing written notification to appropriate supervisors.*

These rules are reinforced by a number of the provisions found in the [Ethics Standards of Conduct for State Employees](#) which is promulgated by the Montana Department of Administration.

The Board of Regents has also addressed conflicts of interest in its [Policy 770](#). Intended to complement the previously noted items, this policy:

- » *Provides definitions of when conflicts of interest exist;*
- » *Requires each campus in the Montana University System to maintain a written conflict of interest policy;*
- » *Requires completion of annual disclosure statements in which all employees are required to state that no conflicts of interest exist or to disclose potential or actual conflicts of interest;*
- » *Requires completion of disclosure statements on potential or actual conflicts of interest before submitting proposals for contracts or grants;*
- » *Requires an independent process for assessing, managing, and for resolving conflicts of interest; and*
- » *Requires annual reports by each campus on all conflicts of interest disclosed, managed, and/or resolved.*

Montana Tech's conflict of interest policies can be found in Section II, paragraph 220 of the [Faculty and Staff Handbook](#) (for all employees) and in the [Principal Investigator's Handbook Inserts and Supplemental Information](#) (for employees engaged in research activities). Section II, paragraph 220 prohibits the following conduct:

- » *Accepting additional compensation for services that are normally part of the assigned duties of the employee;*
- » *Accepting compensation for tutoring students;*
- » *Recommending or approving a purchase from an entity coming from an employee who holds a financial interest in that entity without first making known the financial interest;*
- » *Recommending or approving a personnel action coming from an employee with a business association or a financial interest in the person who is the object of the personnel action without first making known the association or financial interest;*
- » *Distributing or using unpublished institutional research for the benefit of a consulting activity or private client; and*
- » *Supervising work performed by a student or staff member for an external entity during normal work hours.*

9.A.5 The institution demonstrates, through its policies and practices, its commitment to the free pursuit and dissemination of knowledge consistent with the institution's mission and goals.

In [Policy 302](#), the Board of Regents adopted the classic, original 1940 Statement of Principles on Academic Freedom and Tenure of the American Association of University Professors, as revised both in November of 1989 and in January of 1990 by the American

SELF-STUDY 2010

Association of University Professors and the Association of American Colleges. It reads as follows:

1. *The portion of the 1940 Statement of Principles on Academic Freedom and Tenure of the American Association of University Professors set out below is endorsed by the Board of Regents of Higher Education. That statement was revised by the governing bodies of the American Association of University Professors and the Association of American Colleges in November 1989 and January 1990, in order to remove gender-specific references from the original text. Those revisions have been incorporated into the statement.*

Academic Freedom

- (a) *Teachers are entitled to full freedom in research and in the publication of the results, subject to the adequate performance of their other academic duties; but research for pecuniary return should be based upon an understanding with the authorities of the institution.*
- (b) *Teachers are entitled to freedom in the classroom in discussing their subject, but they should be careful not to introduce into their teaching controversial matter which has no relation to their subject. Limitations of academic freedom because of religious or other aims of the institution should be clearly stated in writing at the time of the appointment.*
- (c) *College and university teachers are citizens, members of a learned profession, and officers of an educational institution. When they speak or write as citizens, they should be free from institutional censorship or discipline, but their special position in the community imposes special obligations. As scholars and educational officers, they should remember that the public may judge their profession and their institution by their utterances. Hence they should at all times be accurate, should exercise appropriate restraint, should show respect for the opinions of others, and should make every effort to indicate that they are not speaking for the institution.*

The Regents place particular emphasis on paragraphs (b) and (c) of the above statement as they relate both to the responsibilities and to the privileges which members of the profession and professional organizations associate with this important concept of American life.

This statement is reiterated in Section II, paragraph 202 of the [Montana Tech Faculty and Staff Handbook](#). Article nine of the Collective Bargaining Agreement between Montana Tech and the North Campus faculty also address the notion of academic freedom on the Montana Tech campus.

As an educational institution and as a public institution, Montana Tech places high value on disseminating knowledge. This is exemplified by language of Montana Tech's publication policy, summarized on page 16 of [Montana Tech's Principal Investigator's Handbook](#) (which governs research activities). The summary reads as follows:

Montana Tech's sponsored activities are conducted as an integral part of the total educational program, and these activities often form the basis for articles in professional journals, seminar reports, presentations at professional meetings, and for student

dissertations and theses. Therefore, Montana Tech will only enter into contracts if the results can be published or otherwise disseminated. For development work that may be competition-sensitive, Montana Tech may enter into an information embargo agreement for duration not to exceed one year. Copyrights and publication rights belong to Montana Tech and/or the author. Montana Tech may allow the sponsor to retain ownership of information, as long as Montana Tech has the full publication rights described above and as long as the Principal Investigator signs a statement acknowledging such terms.

SELF-STUDY 2010

SUPPORTING DOCUMENTATION FOR STANDARD NINE

REQUIRED EXHIBITS

1. Statement or policies on academic freedom.
 - » Board of Regents [*Policy 302, "Academic Freedom,"*](#) (see Exhibit 9.R.I).
 - » "Academic Freedom" (Section II, paragraph 202 of the [*Montana Tech Faculty and Staff Handbook*](#)), (see Exhibit 9.R.II).
 - » Collective Bargaining Agreement, (see Exhibit 9.R.III).
2. Statements or policies on conflict of interest.
 - » Board of Regents [*Policy 770, "Conflicts of Interest,"*](#) (see Exhibit 9.R.IV).
 - » "[*Conflict of Interest and Financial Disclosure Policy,*](#)" (see Exhibit 9.R.V).
 - » Section II, paragraph 220 of the [*Montana Tech Faculty and Staff Handbook*](#), "Conflicts of Interest," (see Exhibit 9.R.VI).
 - » [*Principal Investigator's Handbook Inserts and Supplemental Information*](#) (pages 16-27), (see Exhibit 9.R.VII).
 - » Board of Regents [*Policy 401.1, "Consulting Services – Faculty,"*](#) (see Exhibit 9.R.VIII).
 - » Section II, paragraph 219 and Appendix E of the [*Montana Tech Faculty and Staff Handbook*](#), "Consulting," (see Exhibit 9.R.IX).
 - » Board of Regents [*Policy 760, "Service on Outside Governing Boards,"*](#) (see Exhibit 9.R.X).
3. Policies which guarantee fair treatment of faculty, administration, staff, and students.
 - » Section V, paragraph 518 of the [*Montana Tech Faculty and Staff Handbook, "Montana Tech Minority and Gender Equity Achievement Plan,"*](#) (see Exhibit 9.R.XI).
 - » [*2009-2010 Student Handbook and Calendar*](#) (page 2), (see Exhibit 9.R.XII).
 - » Section III,, paragraph 313 of the [*Montana Tech Faculty and Staff Handbook*](#), "Equal Education Opportunity Policy," (see Exhibit 9.R.XIII).
 - » Section V, paragraph 501 of the [*Montana Tech Faculty and Staff Handbook*](#), "Hiring Procedures," (see Exhibit 9.R.XIV).
 - » [*2009-2010 Student Handbook and Calendar*](#), "Montana Tech Minority and Gender Equity Achievement Plan," (page 141), (see Exhibit 9.R.XV).
 - » [*2009-2010 Student Handbook and Calendar*](#), "Affirmative Action/EEO and Americans with Disabilities Act" and "Access for Persons with Disabilities," (pages 146-147), (see Exhibit 9.R.XVI).
 - » [*2009-2010 Student Handbook and Calendar*](#), "Discrimination Complaints," (page 149), (see Exhibit 9.R.XVII).
 - » Section V, paragraph 507 of the [*Montana Tech Faculty and Staff Handbook*](#), "Grievance Policy and Procedure," (see Exhibit 9.R.XVIII).
 - » Section V, paragraph 508 of the [*Montana Tech Faculty and Staff Handbook*](#), "Montana Tech Community Expectations Program," (see Exhibit 9.R.XIX).
4. Copies of print and electronic promotional materials.
 - » [*Montana Tech website*](#), (see Exhibit 9.R.XX).

- » Montana Tech website pages directed at future students, (see Exhibit 9.R.XXI).
 - » Catalogs (1993-1995 through 2009-2010), (see Exhibit 9.R.XXII).
 - » Issues of MNews (August 2005 to present), (see Exhibit 9.R.XXIII).
 - » Issues of Beyond Marcus (November 2008 to present), (see Exhibit 9.R.XXIV).
 - » Press releases database (May 5, 2008 to present), (see Exhibit 9.R.XXV).
 - » Section VI, paragraph 602 of the Montana Tech Faculty and Staff Handbook, “News Releases and Public Statements,” (see Exhibit 9.R.XXVI).
 - » Media and advertising policies, (see Exhibit 9.R.XXVII).
 - » Graphics standards, (see Exhibit 9.R.XXVIII).
5. Code(s) of conduct, statements of ethical behavior.
- » Ethics Standards of Conduct for State Employees, (see Exhibit 9.R.XXIX).
 - » Section V, paragraph 519 of the Montana Tech Faculty and Staff Handbook, “Standards of Conduct for State Employees,” (see Exhibit 9.R.XXX).
 - » Code of Expectations for the Montana Board of Regents of Higher Education, (see Exhibit 9.R.XXXI).
 - » Section II, paragraph 203 of the Montana Tech Faculty and Staff Handbook, “Faculty Code of Conduct,” (see Exhibit 9.R.XXXII).
 - » 2009-2010 Student Handbook and Calendar, “College Community Expectations Program,” (page 137), (see Exhibit 9.R.XXXIII).
 - » Section V, paragraph 508 of the Montana Tech Faculty and Staff Handbook, “Montana Tech Community Expectations Program (Student Judicial System),” (see Exhibit 9.R.XXXIV).
 - » College Community Expectations Program Manual, (see Exhibit 9.R.XXXV).



MontanaTech

THE UNIVERSITY OF MONTANA



Design by Gloria Alvarado Carter
Photos Courtesy of Lisa Wareham, Montana Tech Staff,
Faculty, and Students
Copyright 2010