

MONTANA UNIVERSITY SYSTEM

**Mission Review
of
Montana State University
Bozeman**



Memorandum of Understanding

This document serves as a Memorandum of Understanding between the Montana Board of Regents, the Montana University System Office, and Montana State University as a depiction of institutional role, characteristics, and system and statewide contributions. This agreement helps guide the system and the institution in developing strategic directions that build on distinctive strengths and the leadership role that Montana State University contributes to its affiliated campuses and the University System.

Paul Tuss, Chair
Montana Board of Regents

Clayton Christian, Commissioner
Montana University System

Waded Cruzado, President
Montana State University

MISSION STATEMENT

Montana State University, the state's land-grant institution, educates students, creates knowledge and art, and serves communities by integrating learning, discovery and engagement.

VISION STATEMENT

Montana State University is as remarkable as its setting. Created as a land-grant institution, it is a welcoming, adventurous community of students, faculty and staff distinguished by its commitment to address the world's greatest challenges. The university energizes individuals to discover and pursue their aspirations. It inspires people to engage with the university to improve the human prospect through excellence in education, research, creativity and civic responsibility.

1.0 INSTITUTIONAL CHARACTERISTICS

1.1 Profile

Montana State University is the state's land-grant institution with a tripartite purpose of providing undergraduate and graduate educational programs; conducting research and creative activity; and providing service through outreach to the state, region, nation, and world. As part of our land grant mission, MSU is home to MSU Extension and the Montana Agricultural Experiment Station. These units provide translational research and services to the citizens of the state, including all 56 counties and seven tribal colleges.

1.2 Role

Montana State University in Bozeman is a research institution within the Montana University System that offers high quality undergraduate and graduate programs through its nine academic colleges and related entities. MSU embraces its unique role as the state's land grant university and its commitment to the traditional educational areas associated with this status - agriculture, engineering, basic and applied sciences - without exclusion of the liberal arts. Additionally, MSU serves the state as the sole provider of educational programs in some professional fields (e.g., architecture) and is the home of WWAMI medical education program, the state's veterinary medicine program, and all graduate programs in nursing. As the administrative center of the four-campus Montana State University, MSU in Bozeman facilitates the collaboration among these campuses in maximizing service to students, administrative efficiencies, and academic coordination.

1.3 Distinct Characteristics & Strengths

Institutional Uniqueness: MSU is distinct from other MUS units in that it has three important classifications from the Carnegie Foundation for the Advancement of Teaching.

- 1) **Very High Research Activity:** MSU is one of only 108 universities out of more than 4,400 institutions nationally that has this classification which recognizes the significant research, scholarship and creative work done at MSU. MSU is the only top tier research institution in Montana, Wyoming, Idaho, and South Dakota, and its external research funding typically hovers around \$100 million annually.
- 2) **Very High Undergraduate Enrollment Profile:** MSU is one of just three institutions to hold the very high research distinction while maintaining a very high undergraduate enrollment profile, providing exceptional access for undergraduate students to meaningfully participate in hands-on, world-changing research and creativity.
- 3) **Community Engagement Institution:** MSU is also classified by the Carnegie Foundation as a Community Engagement Institution, demonstrating its role in service, outreach, and engagement with the entire state and world. MSU is also one of the very few institutions to have won the prestigious C. Peter Magrath University Community Engagement Award from the Association of Public and Land-grant Universities, beating out some of the largest universities in the nation.

This unique combination underlines our land-grant mission and commitment to the integration of learning, discovery, and engagement.

MSU is the only MUS unit to offer degrees in academic areas tied to our land-grant mission:

- Engineering: MSU's College of Engineering is the fastest growing college on campus and the second largest with 3,102 students. Engineering graduates play a vital role in many sectors of Montana's economy as well as provide important government services.
- Agriculture: With agriculture still playing a leading role in Montana's economy, MSU's College of Agriculture provides vital research and well-educated graduates to lead the state and nation in the many diverse facets of food production.
- Nursing: MSU's College of Nursing is home to the only public baccalaureate nursing program in the state and the sole provider of graduate nursing education in Montana.
- Architecture: MSU is home to the only architecture program in Montana. Through its Community Design Center, the MSU School of Architecture assists community groups and non-profit organizations representing underserved areas or under-funded projects as well as state, city and county governments to advance projects important to Montana.

MSU's strengths are best illustrated by a small sampling of integrated learning, discovery, and engagement activities:

- Biomedical: Education and research programs directly improve lives, advance medical technologies, and prepare students for careers in a wide array of health professions. MSU is home to WWAMI medical education, the state's veterinary medicine program, movement science and human performance programs, and the state's only graduate programs in Nursing.
- Infectious disease: Researchers work with agriculture, the medical community, and other constituents to increase understanding and develop vaccines for threatening diseases.
- Energy: Ongoing research exploration and education in four key areas including fuel cells, wind, carbon sequestration and biofuels show promise for tomorrow's energy needs. These projects cross the disciplinary boundaries of agriculture, engineering, natural and physical sciences, and the social sciences.
- Optics and Photonics: Integration of physics, chemistry, mathematics and engineering curriculum and research to develop technologies such as radar and lidar, and finding new applications for computational, communication, sensor, or measurement that exceed state-of-the-art capabilities.
- Thermophiles (Yellowstone Microorganisms): Researchers and students from engineering, agriculture, physical and natural sciences, explore life in the extreme environments of the Yellowstone ecosystem to develop improvements in medicine, energy production and environmental concerns.
- Paleontology: Students pursue minor and major degree programs while interacting with world-class experts in the richest fossil deposits in the world.
- Snow Science: Research and educational programs using state-of-the-art laboratory facilities to understand extreme weather conditions.
- Science and Natural History Filmmaking: Our setting in the Greater Yellowstone ecosystem and world-renowned faculty in history, social science, natural and physical sciences, filmmaking, design, and music, affords many student opportunities to combine scientific knowledge and filmmaking skills.
- Local Government Center: Engaging faculty and professional staff from MSU to provide training, technical assistance, and research to local officials that in turn builds the capacity of Montana's local governmental units to deliver essential services.

- Sustainable Foods and Bioenergy Systems: Interdisciplinary curriculum and outreach programs including Towne’s Harvest community-supported-agriculture and partnerships with local food security programs.

STRATEGIC PLAN AND CORE THEMES

MSU’s strategic plan, Mountains and Minds: Learners and Leaders, was presented to the Board at its November 2012 meeting, with a year one progress report distributed in November 2013 and the year two progress report available at the September 2014 meeting. The plan underlines MSU’s role as the state’s land grant university. The full plan along with progress reports and supporting documentation can be found at www.montana.edu/strategicplan.

MSU has also identified Core Themes as part of the accreditation process, approved in November 2012. The two planning documents were developed in subsequent processes, involving hundreds of campus community members, and the goals, objectives, and metrics overlap substantially. In a separate agenda item, MSU will ask the Board to approve the strategic plan goals as our revised core themes for the purpose of accreditation, effectively combining the two very similar planning documents.

Strategic Goals/Core Themes

- Learning
- Discovery
- Engagement
- Integrations
- Access
- Stewardship

Specific metrics related to each Core Theme/Strategic Goal have been identified and the institution is monitoring progress towards mission fulfillment.

1.4 Areas of Commonality:

Montana State University shares areas of commonality with other units of the Montana University System in a number of educational, research, and outreach arenas. As the two doctoral research universities in the state, MSU and the University of Montana engage in similar and complementary activities in graduate education and research related to health, environmental sciences, energy and other disciplinary areas. The Montana University System Science & Technology Plan (<http://mus.edu/che/arsa/Research/MUSSTACplan.pdf>) details some of these areas of commonality.

1.5 Peer Institutions

Montana State University uses public institutions in our Carnegie Foundation classification (very high research institution) for most comparative analyses. While MSU is classified as Very High Research, it is the only institution to hold that classification along with a Very High Undergraduate profile and a Community Engagement Institution distinction. MSU also regularly uses western land grant universities for comparative studies. Within the Montana University System, the University of Montana is considered a peer institution for comparative purposes for topics such as performance funding, tuition and fee rates, expenditures by categories, and other financial and academic data. For non-resident tuition analyses, MSU uses competitors for non-resident applicants, derived from the National Student Clearinghouse. For facilities and other business process-oriented comparisons, MSU uses the flagship public institutions in the contiguous states, which are roughly similar in size and location. For salary comparisons, MSU uses Oklahoma State University Faculty Salary Survey participants within our Carnegie Classification and CUPA administrative and professional salaries from doctoral-granting survey participants.

2.0 ACADEMIC PROFILE

2.1 Academic Programs

At the undergraduate level, MSU offers nearly 60 bachelor's degree programs that span the breadth and depth of our academic expertise in response to student interest and societal demand. Many of these degree programs include options to allow for specialization within the discipline.

MSU, through Gallatin College, offers workforce certificates of less than one year, one year certificates, and associates degrees for career advancement and transfer.

MSU offers graduate degree programs at the masters and doctoral levels in over 50 distinct disciplines. The graduate degree programs are administered by 33 academic departments across nine colleges. Specific master's degrees include masters of arts, sciences, architecture, fine arts, education, nursing, professional accountancy, public administration, and science education. At the doctoral level degrees include the doctor of philosophy (PhD), doctor of education (EdD), and doctor of nursing practice (DNP).

General Education Program: When started in 2004, Core 2.0, MSU's general education program, was the first general education program at a public university to require an undergraduate research/creative experience for every student in its general education component. As a complement to this requirement are four inquiry courses, in the Arts, Humanities, Natural and Social Sciences.

Similar to other MUS campuses, MSU's general education program covers fundamental topics in terms of subject areas and learning outcomes, so its courses should be easily transferable from one institution to another. Since 2012 MSU has been transitioning Core 2.0 assessment from a periodic review of course inputs to a program of direct assessment of student outcomes.

Class Size and Student-Faculty Ratios: Despite recent growth, class size and student- faculty ratios remain low enough to ensure a high quality, hands-on learning experience for students at MSU. The median undergraduate section has fewer than 30 students. Even large courses have small discussion sections and labs to engage students in their learning experience.

Undergraduate Class Size, Fall 2013

Section Size	Number of Sections	Percent of Sections
2-9	139	10%
10-19	443	31%
20-29	266	18%
30-39	217	15%
40-49	152	10%
50-99	151	10%
100+	82	6%
Total	1450	100%

Source: Common Data Set

Student/Faculty Ratios, Fall 2009-13

Fall 2009	Fall 2010	Fall 2011	Fall 2012	Fall 2013
16:1	17:1	17:1	18:1	19:1

Source: Common Data Set

2.2 Technology and Instruction

Montana State University promotes and supports the use of technology to increase access to MSU through 600 online sections and over 20 online programs, as well as resources and support for faculty who wish to enhance their blended and on-campus courses with established and emerging learning technologies, both in and outside of the physical classroom.

MSU continues to design innovative learning spaces in new and existing buildings to connect faculty and students on campus, across the state, and around the world. These spaces provide opportunities for enhanced collaboration, team-based interactions, and informal learning in a technology-rich environment.

2.3 Alternative Scheduling

Student needs for alternative scheduling are addressed through various programs, including but not limited to workforce development programs offered off-campus in evening and weekend formats, Core at Night for in-person course delivery of the general education core, online delivery of the Liberal Studies degree program, and the hybrid Master of Science in Science Education program for place-bound teachers. MSU has been expanding the class day, added a course scheduling slot on Tuesdays and Thursdays to increase capacity, and is currently exploring expansion of summer options for year-round students.

3.0 STUDENTS

3.1 Student Characteristics and Student Services

Appendix C1 contains information regarding MSU's student body. Appendix C2 contains information regarding student success measures. The student body has been growing over the last five years as more students from Montana and around the world choose MSU and stay at MSU through graduation. As MSU has grown in new students, retention of continuing students has also increased in recent years, due in part to student support services in and out of the classroom including supplemental instruction and tutoring, active learning and technology-assisted instruction, cultural events and lectures, career counseling and placement, residence life

and dining services, clubs and organizations, intramural and varsity athletics, student health and counseling centers, financial aid and financial literacy, and service, outreach and engagement opportunities.

3.2 Retention and Graduation Rates

Appendix C3 shows a five year summary of fall-to-fall retention rates and six-year graduation rates. MSU has seen improvements in retention and graduation rates over the last five years following conscientious investment in curricular innovation as well as out-of-class student support.

3.3 Student Satisfaction and Student Learning

MSU's participation in the National Survey of Student Engagement for Spring 2011 shows the following:

- 82% of seniors would attend this institution if they started over again
- 84% of seniors rated their entire educational experience as good or excellent
- 86% of seniors reported that other students were friendly or supportive

Happily, the last two metrics show a slight increase since our last NSSE administration in 2008. The first is even with 2008 values.

MSU's learning outcomes assessment process places the primary responsibility on departments to clearly articulate learning goals for their majors and to plan, implement, and report an appropriate process for measuring how these goals are being met. Departments must update plans at least every two years and must report annually on how plans were implemented and how, if appropriate, the department will respond to any shortcomings identified through the process.

3.4 Enrollment trends, projections, and challenges

Resident enrollment figures increased significantly in the Fall 2013 semester compared with prior years. MSU has experienced strong growth in all categories of students while maintaining or improving the academic profile of incoming classes.

MSU's enrollment projection model is based on rolling three-year average progression ratios of Montana high school graduates, nonresident students, transfer students, and continuing/returning students.

Challenges associated with our current growth pattern include accommodating that growth within our physical space and maintaining appropriate funding levels per student.

3.5 Student Finances

Tuition and fees remain low relative to peer states, approximately \$6,700 compared to the WICHE state average of \$10,920 for universities in our Carnegie class; however, Montana as a state ranks near the bottom in the amount of need-based funding provided, which adversely impacts our students. Approximately 30% of our students qualify for Federal Pell Grants. MSU's Financial Aid Office and the Office of Financial Literacy are statewide models in addressing the financial needs of our students. Despite average debt amounts that are even with state and national averages, MSU's default rate is the lowest in the state and less than half the national average.

4.0 PUBLIC OUTREACH, RESEARCH, & TECHNOLOGY TRANSFER

4.1 Outreach programs

To carry out its land grant mission, MSU has an abundance of outreach programs designed to disseminate knowledge and education throughout the state and beyond:

- Montana State University is home to three of five agencies under the Montana University System. MSU houses MSU Extension, the Montana Agricultural Experiment Station, (MAES), and the Fire Services Training School. The University of Montana houses the two other agencies: the Montana Bureau of Mines and Geology, and the Forestry and Conservation Experiment Station. All of the agencies have their own appropriation line in the state budget and do not derive their state funding from the general “lump sum” provided to the Montana University System as a whole. This poses unique challenges to the agencies in fulfilling their mandated responsibilities.
 - MAES: At the seven MAES centers around the state many crop varieties are tested in the field – the centers are living laboratories for a wide range of agricultural research that is used to advance Montana’s agricultural economy.
 - MSU Extension: Working in partnership with all 56 counties and the seven reservations, MSU Extension has agents and specialists that provide the latest information on a wide range of issues – agriculture included – to the Montana citizenry across the state. MSU Extension’s work includes 4-H, the largest youth development program in the state.
 - Fire Services Training School: FSTS provides education in fire prevention and mitigation for communities and the mostly volunteer fire suppression departments across Montana.
- The Montana Manufacturing Extension Center is a statewide manufacturing outreach and assistance center that provides technical assistance to businesses in a variety of industries. MMEC has a proven record of positive impact for client firms and the economy.
- Extended University works with campus partners to promote lifelong learning and provide educational opportunities beyond the campus to meet academic, professional, and learning goals.
- The Museum of the Rockies, a Smithsonian Institution affiliate and a federal repository for fossils, showcases the rich natural and cultural history of America's Northern Rocky Mountains. The Museum reaches diverse communities with engaging exhibits, educational programs, and original research that advance public understanding of the collections. It maintains sister relationships with multiple museums as close as Ekalaka, MT, and as far away as Japan.
- KUSM, Montana Public Television, serves more than 150 communities around the state with locally-produced, award-winning programming alongside internationally syndicated public television programs to enrich Montana’s communities.
- Montana Shakespeare in the Parks brings professional productions, at no cost to the public, to communities throughout Montana, northern Wyoming, eastern Idaho, and western North Dakota.
- Gallatin College works with local industry partners to deliver applied certificate and degree programs to meet workforce needs.
- Every academic college supports formal outreach programs for students, including rural health programs, public health initiatives, reservation-based drinking water engineering projects, student business consulting services, language, music and art programs in the K-12 schools, and community-based design projects.

4.2 Funded research program profile

Montana State University is one of only 108 universities in the US to achieve recognition as a “research university with very high research activity” in the Carnegie university classification system. MSU has exceptional research strengths in agriculture, human health, energy, computational sciences and engineering. The direct economic impact of our research is evident locally and across the state and country. Information on research and sponsored programs follows:

Montana State University Research and Other Sponsored Programs, Fiscal Year 2013 Expenditures by Colleges and Departments

College of Agriculture	
Dean's Office	\$50,204
Agricultural Economics and Economics	\$224,285
Agricultural Education	\$66,542
Animal and Range Sciences	\$1,175,763
Plant Sciences	\$3,831,579
Land Resources and Environmental Sciences	\$4,342,986
Research Stations	\$576,115
Immunology & Infectious Diseases ⁽¹⁾	\$6,195,536
SUBTOTAL	\$16,463,010

College of Arts and Architecture	
Dean's Office	\$66,312
Architecture	-----
Art	-----
School of Film and Photography	-----
Shakespeare in the Parks	\$79,296
SUBTOTAL	\$145,608

College of Business	
SUBTOTAL	\$5,001

College of Education, Health & Human Development	
Dean's Office	\$799,102
Education ⁽²⁾	\$617,207
Health and Human Department	\$2,288,741
SUBTOTAL	\$3,705,050

College of Nursing ⁽⁴⁾	
SUBTOTAL	\$5,385,844

College of Engineering	
Dean's Office ⁽³⁾	\$306,801
Chemical Engineering	\$887,157
Civil Engineering	\$111,964
Computer Science	\$365,142
Electrical and Computer Engineering	\$1,644,370
Industrial and Mechanical Engineering	\$1,534,101
Center for Biofilm Engineering	\$2,574,166
MT Manufacturing Extension Ctr.	\$1,312,074
Western Transportation Institute	\$7,372,854
SUBTOTAL	\$16,108,629

College of Letters and Science	
Cell Biology and Neuroscience	\$2,158,519
Chemistry and Biochemistry	\$8,007,254
Earth Sciences	\$1,336,148
Ecology	\$2,817,751
English	\$15,866
History and Philosophy	\$51,504
Mathematical Sciences	\$936,456
Microbiology	\$895,370
Modern Languages	-----
Native American Studies	-----
Physics	\$6,025,927
Political Science	-----
Psychology	\$314,226
Sociology	\$318,246
SUBTOTAL	\$22,877,267

University Programs	
SUBTOTAL	\$29,063,067

GRAND TOTAL	\$93,753,476
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⁽²⁾ includes Science Math Resource Center

⁽³⁾ for FY13, includes American Indian Research Office

⁽⁴⁾ includes Area Health Education Center (AHEC)

Montana State University Research Expenditures by Sponsor- FY2010 through FY2013

Agency	FY10 Exp	FY10 % of total	FY11 Exp	FY11 % of total	FY12 Exp	FY12% of total	FY13 Exp	FY13% of total
Department of Defense (DOD)	\$1,763,136	1.6%	\$8,863,832	8.6%	\$7,946,623	7.08%	\$8,389,284	8.95%
Department of Interior (DOI)	\$3,216,774	2.9%	\$3,323,480	3.2%	\$2,258,553	2.01%	\$2,089,098	2.23%
Health & Human Services (HHS)	\$29,267,994	26.7%	\$27,668,688	26.9%	\$38,171,419	33.99%	\$24,390,119	26.01%
National Aeronautics & Space Administration (NASA)	\$6,601,338	6.0%	\$7,408,686	7.2%	\$7,325,847	6.52%	\$6,007,910	6.41%
National Science Foundation (NSF)	\$15,323,038	14.0%	\$16,246,081	15.8%	\$17,296,711	15.40%	\$15,305,666	16.32%
US Agency for International Development (USAID)	\$230,023	0.2%	\$130,059	0.1%	\$0	0.00%	\$0	0.00%
US Department of Agriculture (USDA)	\$6,933,163	6.3%	\$8,043,818	7.8%	\$6,504,556	5.79%	\$5,882,745	6.27%
US Department of Commerce (USDOC)	\$1,589,575	1.5%	\$1,279,922	1.2%	\$712,104	0.63%	\$1,133,600	1.21%
US Department of Education (USDOED)	\$1,813,775	1.7%	\$1,118,720	1.1%	\$848,883	0.76%	\$1,086,026	1.16%
US Department of Energy (USDOE)	\$12,068,406	11.0%	\$6,757,404	6.6%	\$10,526,865	9.37%	\$7,469,738	7.97%
US Department of Homeland Security (USDOHS)	\$0	0.0%	\$0	0.0%	\$107,532	0.10%	\$88,267	0.09%
US Department of Transportation (USDOT)	\$5,026,932	4.6%	\$6,250,711	6.1%	\$5,579,225	4.97%	\$5,450,539	5.81%
US Environmental Protection Agency (USEPA)	\$1,120,598	1.0%	\$903,392	0.9%	\$805,313	0.72%	\$1,018,575	1.09%
Other Federal	\$10,494,885	9.6%	\$1,874,888	1.8%	\$1,283,140	1.14%	\$1,169,212	1.25%
Federal Agencies Total	\$95,449,637	87.1%	\$89,869,681	87.1%	\$99,366,771	88.48%	\$79,480,779	84.77%
Private Total	\$10,247,252	9.4%	\$10,095,735	9.8%	\$9,797,640	8.72%	\$10,715,119	11.43%
State Agencies Total	\$3,784,805	3.5%	\$2,801,875	2.7%	\$3,139,859	2.80%	\$3,560,124	3.80%
Total	\$109,481,694	100.0%	\$102,767,291	100.0%	\$112,304,270	100.00%	\$93,756,022	100.00%

4.3 Inventions, patents, and spin-off companies

	FY10	FY11	FY12	FY13
R&D Expenditures	\$109,481,694	\$102,767,291	\$112,304,270	\$93,756,022
Number of New Invention Disclosures Filed	22	17	17	17
Number of new start-up companies which have licensed or commercialized university-developed IP	1	0	1	1
Number of new IP licenses issued	50	43	52	37
Total IP licenses in effect at the close of the fiscal year	191	200	205	208
Total gross revenues from IP licenses	\$466,181	\$322,051	\$853,384	\$533,394
Patents Issued	9 patents, 2 PVP	11 patents	6 patents	5 patents
US Patents Filed	29	27	28	25
Active Licenses (Total)	191	200	205	208
Active Licenses (MT Companies)	109	98	87	73
Percent Licenses w/ MT Companies	57%	49%	42%	35%
License/Patent Revenues	\$256,690	\$181,473	\$622,781	\$414,627
Reimbursed Patent Costs from Licenses	\$209,491	\$140,579	\$230,603	\$118,767

4.4 Community engagement

A core goal of the strategic plan drives MSU to actively encourage student, faculty, and staff involvement in community engagement. MSU was awarded the Carnegie Classification for Community Engagement in 2010. Engagement efforts encompass teaching, research, and service and result in mutually beneficial outcomes for both the institution and the community or partner. A few examples include Towne's Harvest Garden, providing a source of local sustainably-grown food for campus and communities, Engineers Without Borders, a student-led group providing clean water supply to villages in Kenya, and Student Community Outreach ProjEct (SCOPE), a student organization designed to help bridge the gap between MSU student research and Montana communities.

4.5 Special recognition

- 20 NSF Career Awards for faculty since 1995
- 23 National Fellows
- MSU has produced 61 Goldwater scholars for math, science and engineering. MSU is one of only 15 institutions in the nation and the only university in the northwest with this many scholars.
- Eleven MSU graduates are Rhodes Scholarship winners.
- MSU has seven Udall scholars, including Emery Three Irons in 2014, the first MSU student selected in the Tribal Public Policy category.
- Nine MSU students have been named Truman Scholars and MSU students have also won the prestigious Marshall, Mitchell (2) and Gates- Cambridge Scholarships.
- Twenty-four MSU students received Fulbright grants from 1997-2014.
- Seventeen NSF Graduate Research Fellowships have been awarded to MSU graduates since 2000.

- In Fall 2013, 60% (127 out of 211) of the Montana University System High School Honors scholars attended MSU.
- The Montana State University Center for Faculty Excellence was recognized as a 2014 Exemplary Teaching and Learning Center at the 25th International Conference on Teaching and Learning.
- MSU was among just 234 schools to earn a spot on U.S. News & World Report's inaugural list of best colleges for veterans.
- MSU won the 2011 C. Peter McGrath University Community Engagement Award from the Association of Public and Land Grant Universities (APLU) in recognition of the contributions its students have made in bringing clean water to a region in Kenya through the work of the MSU chapter of Engineers Without Borders.
- MSU graduates serving in the US Peace Corps contribute to a ranking 16 for volunteer participants nationally.

4.6 Peer comparisons

- MSU is classified as a Research University - Very High Research Activity by the Carnegie Foundation for the Advancement of Teaching. MSU is one of only three top research institutions that also maintain a Very High Undergraduate profile. MSU is the only institution to be classified as very high research, very high undergraduate, and engaged with the community.
- MSU ranks in the top 120 research institutions nationally for federally funded research expenditures.
- MSU's academic departments' instructional expenditures per FTE in FY12 were 76% of the average for research institutions, as measured by the Delaware Study of Instructional Costs and Productivity. MSU's departments taught 27% more credit hours and 36% more sections per faculty member.
- Montana State University faculty salaries are significantly lower than peers within our Carnegie classification, at 77% of average for the 2013 Oklahoma State University Faculty Salary Survey. Administrative salaries are 59% of doctoral-granting institution averages according to CUPA's 2013 administrator salary survey.

5.0 SYSTEM COLLABORATION

5.1 Collaborations with K-12

MSU faculty members work with teachers and administrators at the local and statewide level (including many tribal communities) to address issues specific to the needs of K-12 teachers and students. This includes undergraduate and graduate teacher training (including on-line masters programs), in-service teacher education, increased dual enrollment offerings in area high schools, summer programs for students (including fully-funded research opportunities), outreach programs to schools, summer research experiences for teachers (often funded through NSF's Research Experience for Teachers program), subject-specific curriculum development across the university, and a number of federally supported programs to enhance teacher effectiveness in specific disciplines. A recent highlight is the I LEAD (Indian Leadership Education and Development) program, for which Montana State University has been awarded three grants totaling \$3.9 million from the US Department of Education, Office of Indian Education, to recruit, educate, and train Native American teachers to become school principals and superintendents.

5.2 Program Partnerships

- PhD degree in Materials Science, a collaborative graduate program with Montana Tech and the University of Montana, currently accepting its first cohort of students
- Joint graduate degree with the University of Montana- Missoula in Fish & Wildlife Biology
- Joint graduate degrees with the University of Montana- Missoula in Neuroscience

- Lead institution in the Montana Medical Laboratory Science Training Program with UM
- Joint Master of Public Administration with MSU-Billings
- Great Plains IDEA Network (GP IDEA): An alliance of eleven universities offering online graduate degrees, certificates, and courses in the human and agricultural sciences.

5.3 Participation in System Initiatives

- Performance Funding
- Complete College Montana
- Common Course Numbering
- Program Tuning (Business)
- Financial Literacy, Affordability, and Financial Aid
- Veteran Student Support and Success
- General Education
- Developmental Education
- EPSCoR/Institute on Ecosystems
- Strengthening Workforce Alignment in Montana's Manufacturing and Energy Industries (SWAMMEI)
- Trade Adjustment Assistance Community College And Career Training Grants (TACCT)
- K-20 Longitudinal Student Data System

5.4 Support for Campuses Affiliated with the University

MSU's campuses are engaging shared work on student success through regularly convened OneMSU summits and task forces on student success topics like advising, retention, transfer, and degree completion. The four campuses have also engaged an enterprise policy project, and the Enterprise Information Technology Governance system is a model for other four-campus integration processes.

Additionally, MSU in Bozeman has provided significant centralized operational support to its affiliated campuses in the following categories:

- Budget Office
- Financial Reporting
- Business Office
- Communication Services
- Financial Systems
- Accounting Operations
- Enterprise Information System
- Human Resources
- Institutional Research
- Facilities

5.5 Support/Collaboration with other campuses (Community Colleges, Tribal Colleges, other)

MSU faculty have traditionally been active in attracting federal funding to support work that either directly or indirectly supports Montana's Tribal Colleges and their students. This includes programs such as The Center for Native Health Partnerships and Montana INBRE (IDeA Network of Biomedical Research Excellence), a collaborative project in which MSU is the lead institution.

The Institute on Ecosystems is a first-of-its-kind experiment for Montana to build a state-wide institute on ecosystem sciences, working collaboratively with partners throughout the state including MUS institutions and Aaniiih Nakoda College and Blackfeet Community College and state and federal offices.

Articulation agreements between community colleges and MSU have been developed for specific academic programs to aid student transfer and support advising services at the community colleges.

6.0 OPERATING BUDGET

REPORTING METRIC: EXPENDITURES PER STUDENT

	FY10 Actual	FY11 Actual	FY12 Actual	FY13 Actual	FY14 Budgeted
Montana State University					
MSU Bozeman	\$12,826	\$12,244	\$12,418	\$12,910	\$13,427
MSU Billings	\$9,240	\$8,788	\$8,858	\$9,610	\$9,860
MSU Northern	\$12,269	\$12,371	\$12,371	\$12,399	\$12,783
MSU Great Falls College	\$7,231	\$7,189	\$7,110	\$7,470	\$7,780
University of Montana					
UM Missoula	\$10,526	\$10,564	\$10,929	\$11,937	\$12,996
MU MT Tech	\$10,994	\$11,055	\$11,631	\$11,747	\$12,178
UM Western	\$9,421	\$9,020	\$9,312	\$9,363	\$10,114
UM Helena College	\$6,872	\$6,024	\$6,328	\$7,473	\$7,570
Community Colleges					
Dawson	\$8,963	\$9,497	\$10,998	\$12,899	\$12,979
Flathead Valley	\$7,151	\$7,478	\$8,474	\$8,985	\$9,715
Miles	\$10,713	\$10,793	\$11,102	\$12,480	\$15,219

Source: MUS Individual Campus Operating Budget Metrics, FY14

Following the adoption of the strategic plan, MSU is focused on coupling budgeting with planning more explicitly. Increases in instructional budgets have risen in response, as have efforts to raise funds from all sources.

By all nationally recognized measures, Montana State University remains an exceptionally low cost, highly efficient research university. The Delta Cost Project reports education and related spending in FY2010 averaged \$15,951 per FTE student at research universities nationally. The figures in the table above are inclusive of additional spending areas yet are less than two-thirds of that national figure.

The University budget is driven by numerous expense components that have been subject to significant inflation in recent years: specifically, medical benefits, energy commodities, and academic journals. Despite these factors, expenditures per FTE student have increased only 4.7% since 2009-2010, or an average annual increase of just over 1%.

APPENDICES

Appendix B -Academic Profile

B-1- Undergraduate Degrees Awarded by College, 2012-13

College/Department	Number	Percent
Agriculture	125	6%
Arts & Architecture	209	11%
Business	200	10%
Education, Health and Human Development	257	13%
Engineering	331	17%
Gallatin College	61	3%
Letters and Science	600	30%
Nursing	202	10%
Total	1985	100%

Source: OCHE Student Data Warehouse, Graduation Table

B-2- Graduate Degrees Awarded by College, 2012-13

College/Department	Number	Percent
Agriculture	32	6%
Arts & Architecture	65	11%
Business	31	5%
Education, Health and Human Development	119	21%
Engineering	51	9%
Div. Graduate Education	125	22%
Letters and Science	128	22%
Nursing	26	5%
Total	577	100%

Source: OCHE Student Data Warehouse, Graduation Table

B-3- Faculty Characteristics and Faculty Productivity

Faculty Characteristics

Faculty Type	Headcount	% Fulltime	FTE	% Women
Professor	193	92%	185.19	21%
Associate	152	95%	149.19	41%
Assistant	137	98%	134.67	48%
Gallatin College Faculty	11	91%	10.65	45%
Non Tenure Track	432	19%	224.55	63%
Research	52	58%	38.47	33%
Ag Exp. Station	15	93%	14.48	60%
Extension	96	90%	91.19	60%
Total	1,088	63%	848	49%

Source: MSU Office of Planning and Analysis, HR Snapshot

Faculty Productivity

Productivity Measure	Average Departmental Percent of Research Institution Peers
Student Credit Hours Taught per Faculty FTE	127%
Organized Course Sections Taught per Faculty FTE	138%
Research Expenditures per Tenure-Track Faculty FTE	234%
Service Expenditures per Tenure-Track Faculty FTE	510%

Source: Delaware Study of Instructional Costs and Productivity, AY2012

Appendix C: Students

C-1- Fall 2013 Headcount Enrollment by Demographic Variables

	Undergrad	Graduate	Total	Percent
Total	13,264	2,030	15,294	100%
Male	7,273	944	8,217	54%
Female	5,991	1,086	7,077	46%
Hispanic	415	44	459	3%
African American	93	9	102	1%
American Indian*	182	35	217	1%
Asian	134	19	153	1%
Native Hawaiian/Pacific Islander	11	1	12	0%
White	11,460	1,646	13,106	86%
Two or more races	395	73	468	3%
International	464	144	608	4%
Unknown	110	59	169	1%
Average Age	22	33	N/A	N/A
Resident	8,828	1,239	10,067	66%
WUE	713	--	713	5%
Nonresident	3,723	791	4,514	30%
Full Time	11,012	537	11,549	76%
Part Time	2,252	1,493	3,745	24%

*Federal Race and Ethnicity categories count non-resident aliens first, then anyone who indicates Hispanic as Hispanic, then multiple races, then single-race categories. As a result, students who indicate they are American Indian/Alaska Native with another ethnicity or racial affiliation are counted as Hispanic or multi-racial. When any student indicating an affiliation as American Indian/Alaska Native is counted in that category regardless of other affiliations, the Fall 2013 number is 558, or 4%.

Source: MSU Quick Facts, OCHE Student Data Warehouse, Enrollment Table

C-2- Freshmen ACT scores distributed by ranges (<18, 18-20, 21-24, 25-29, 30+)/ same for SAT; % of entering class requiring remediation, in either English, in math, or both

Fall 2012 Freshmen Requiring Remediation by Subject

	Writing	Math	Both	New Freshmen
Percent	2.0%	16.5%	3.1%	21.5%

Source: CCA Progress Metric 1

Freshman ACT/SAT Scores, Fall 2013

ACT Comp	<18	18-20	21-24	25-29	>= 30	TOTAL
Number	138	309	643	729	252	2071
Percent	7%	15%	31%	35%	12%	100%
SAT						
Number	57	146	347	443	105	1098
Percent	5%	13%	32%	40%	10%	100%

Source: OCHE Student Data Warehouse, Admissions Table

C-3- Retention & Graduation Rate of First-time, Full-time Freshmen

	2008-09	2009-10	2010-11	2011-12	2012-13
Retention	72.2%	74.4%	74.1%	74.3%	76.4%
Six Year Graduation	48.3%	47.1%	50.9%	48.9%	49.5%

Source: MSU CSRDE

C-4- Student FTE by Residency & Level

	Fall 2009	Fall 2010	Fall 2011	Fall 2012	Fall 2013
Resident					
Undergraduate	7,057	7,522	7,817	7,989	8,152
Graduate	684	694	690	623	642
TOTAL RESIDENT FTE:	7,741	8,216	8,506	8,612	8,793
Non-Resident					
Undergraduate	2,307	2,664	2,865	3,241	3,477
WUE	363	441	492	618	738
Graduate	214	207	229	284	294
TOTAL NONRESIDENT FTE:	2,884	3,312	3,585	4,143	4,509
TOTAL FALL FTE	10,626	11,528	12,091	12,754	13,302

Source: OCHE Student Data Warehouse, Enrollment Table

C-5- Student Headcount by New Student Status

	Fall 2009	Fall 2010	Fall 2011	Fall 2012	Fall 2013
First-time Freshmen	2,316	2,623	2,669	2,710	2,921
New Transfer Students	794	914	969	989	915
First-time Undergrad Student	87	60	96	84	62
First-time Graduate Student	541	553	497	542	533
First-time Non Degree	246	265	265	256	331
Total New Students	3,984	4,415	4,496	4,581	4,762

Source: OCHE Student Data Warehouse, Enrollment Table

C-6- Degrees Awarded by Type

	FY09	FY10	FY11	FY12	FY13
Certificate			13	28	56
Associate			9	31	28
Bachelor's	1,889	1,835	1,809	1,794	1,924
Master's	440	471	491	538	505
Specialist's		3	1		
Doctoral	45	45	56	53	49
Total Degrees Awarded	2,374	2,354	2,379	2,444	2,562

Source: OCHE Student Data Warehouse, Graduation Table