

Montana University System

## Board of Regents'



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<http://mus.edu/data/strategicplan.asp>

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## Preface and Introduction

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### History

This year the oldest units of the Montana University System celebrate their 117<sup>th</sup> anniversary. It would be an understatement, and a well-worn cliché, to say that much has changed since Montana's 3<sup>rd</sup> Legislature established four state colleges in Bozeman, Missoula, Butte, and Dillon. What may be more interesting is how much has not changed. Now, as then, education is a cornerstone of our society and our economy. An educated citizenry has been recognized as a foundation for our nation's success since the time our country declared its independence. The Morrill Act of 1862 (establishing the Nation's land grant colleges), the Second Morrill Act of 1892, and the GI Bill (which five decades later opened up the possibility of a college education for millions) consistently rank among the handful of major policies that have fundamentally shaped our country's prosperity during the last century.

What has changed is the minimum level of education necessary to successfully participate in our society and economy. Postsecondary education has long been a gateway to success for our best and brightest and more privileged citizens. Now it is essentially a requirement for almost everyone. Many years ago, an eighth grade education was recognized as sufficient for most citizens. This gave way to a standard that a high school diploma was necessary for entrance to the middle-class and the chance to have a comfortable life. In the 21<sup>st</sup> Century, the hurdle has plainly moved to where at least some postsecondary education is now necessary for even modest prosperity in any high-wage, industrialized economy.

Unfortunately, tuition remains the single largest factor in closing the gap between the cost of public higher education and the amount of funding provided by the state. Since no state institution of higher education can maintain a quality system of education in the face of declining funding, tuition has had to increase. And it has increased – a lot. In the past decade tuition has nearly doubled for Montana residents. Until the advent of the College Affordability Plan in 2007, the state's contribution per student – in dollars – has remained essentially the same for ten years, without increases for even some price inflation. Again, Montana has much company. During the past decade, average tuition increases for all U.S. public 4-year colleges almost precisely mirror Montana's increases.

But the higher education system in Montana is not entirely a blameless victim of the legislative budget ax. Elected officials are heavily persuaded by their respective constituents' input and always face difficult budget choices. For this, the higher education community has to shoulder some of the blame. Had the university system been more effective at consistently communicating the value of a strong public higher education system and the consequences of declining state funding, it is likely more support would have been forthcoming.

## Goals

The discussion of the Montana University System history is not meant to affix blame collectively or individually. The point is simply that the state's prosperity depends on a high-quality and accessible postsecondary education system and the university system's future likewise depends on the state's prosperity. This strategic plan focuses on just this symbiotic relationship with three fundamental goals:

- Increase the overall educational attainment of Montanans through increased participation, retention, and completion rates in the Montana University System.
- Assist in the expansion and improvement of the state's economy through the development of high value jobs and the diversification of the economic base.
- Improve institutional and system efficiency and effectiveness.

Maintaining the high quality of our institutions and the education provided to our students is not listed as an explicit goal. This is because it is THE MOST IMPORTANT consideration for every goal and initiative of the Montana University System and is considered to be an integral part of every component of this strategic plan.

The first goal reinforces what has always been the core mission of public higher education – to provide access to a quality postsecondary education for our citizens. In light of trends during the past decade, access requires affordability and this does mean, in part, increased state support. It also means the university system needs to do a better job of reaching remote, disadvantaged, and non-traditional students; using technology to deliver education; and working more closely with K-12 education to make the transition to college seamless.

The second goal recognizes the two critical roles that a university system must play, for both traditional industries and the “new-economy,” in an increasingly global marketplace. It must train a skilled workforce for the types of jobs that exist, or will exist, in the economy. It is also a principle source of research and technology that fuel the innovation vital for any successful company to grow.

The third and final goal gives a high priority to stewardship of the resources we have been provided to help attain these goals. How well the Montana University System manages costs, allocates resources, and tracks this accountability with hard data is critical for improving credibility and keeping higher education accessible for all our citizens.

## Change is Vital

The good news is that, despite some disturbing trends, Montana still has an excellent university system. For the past decade, enrollment has been increasing – a function mostly of a demographic bubble moving through our K-12 system – and growth can ameliorate otherwise visible financial troubles. Although students have been bearing an increasingly heavy financial burden, they have generally been able to work and borrow enough to pay for postsecondary education. Heavy debt has other consequences, particularly for post-education retention in the workforce, but it does mean most students can at least find a way to attend college. And, the university system has been able to raise non-resident tuition,

which is about 40% higher than costs, to help offset state support for resident students. Without these non-residents, resident tuition would be about 25% higher than it is currently.

But Montana now faces our own version of the perfect storm. The demographic bubble of 6-18 year olds in Montana has given way to a trough. Slowed population growth in this age group is a national phenomenon, but it is much more pronounced in our state. In the near future, Montana will experience a significant decline in the number of in-state high school graduates. In less than ten years it is projected that we will have about 1,500 fewer graduating high school seniors per year.

Also, for the first time, the average cost of higher education in the state has outstripped the capacity of many students and their families to fund higher education through savings and borrowing. Concurrently, the ability of our colleges to raise non-resident tuition to generate additional revenue may have reached its limit. Further large increases will make our tuition increasingly uncompetitive in the region and could lead to declining non-resident enrollments.

New forces in demographics and the global economy mean we can ill afford to proceed down the same path we have been following for the past decades. With this strategic plan, the Montana University System recognizes that we must work together with state government and our private sector to make significant changes in the manner in which we support each other. Our state deserves, and depends on, a collaborative and successful effort.

## **Taking Action**

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### **Postsecondary Education Policy and Budget Subcommittee**

The development of this strategic plan began with two primary initiatives. The first was to work more closely with the interim legislature to develop a set of mutually agreed upon accountability measures that would guide the Montana University System and evaluate progress. Working with the Postsecondary Education Policy and Budget (PEPB) subcommittee of the 57<sup>th</sup> Legislature, the Board of Regents did develop this set of accountability measures in July 2002. Subsequently, the PEPB subcommittee has updated the accountability measures. This latest set of agreed-upon measures evolved into “shared policy goals” and work to form one base for this strategic plan.

### **Shared Leadership for a Stronger Montana Economy**

The second initiative was to work with the PEPB Subcommittee to explore new ways for the Montana University System to take a more direct leadership role in the state’s economic development. This overall effort, called “Shared Leadership for a Stronger Montana Economy”, engaged a broad range of Montanans to prioritize specific initiatives that would help establish a new role for the Montana University System in strengthening the state’s economy. The Governor’s Office and several legislative interim committees were included in the effort. In July, 2004, the Board of Regents and the PEPB subcommittee met jointly and agreed on three priority initiatives for immediate implementation:

- Develop stronger business-university system partnerships for workforce training;
- Remove barriers to access for postsecondary education;
- Expand distance learning programs and training.

### **Strategic Plan Development**

Finally, the Board of Regents conducted a series of meetings with legislators, the Governor’s Office, campus leaders, and the public to determine the top priorities for the Montana University System. This work included two planning sessions, in July 2005 and January 2006, and the engagement of national experts in higher education policy. These experts included Dennis Jones, President of the National Center for Higher Education Management Systems, and Cecelia Foxley, former Commissioner of Higher Education for Utah and past President of State Higher Education Executive Officers.

This strategic plan was approved by the Board of Regents in July 2006. It combines the ongoing efforts with the legislature, particularly the PEPB subcommittee, and Shared Leadership. It describes what will be the university system’s priorities, how we will accomplish these priorities, and how we will measure our progress.

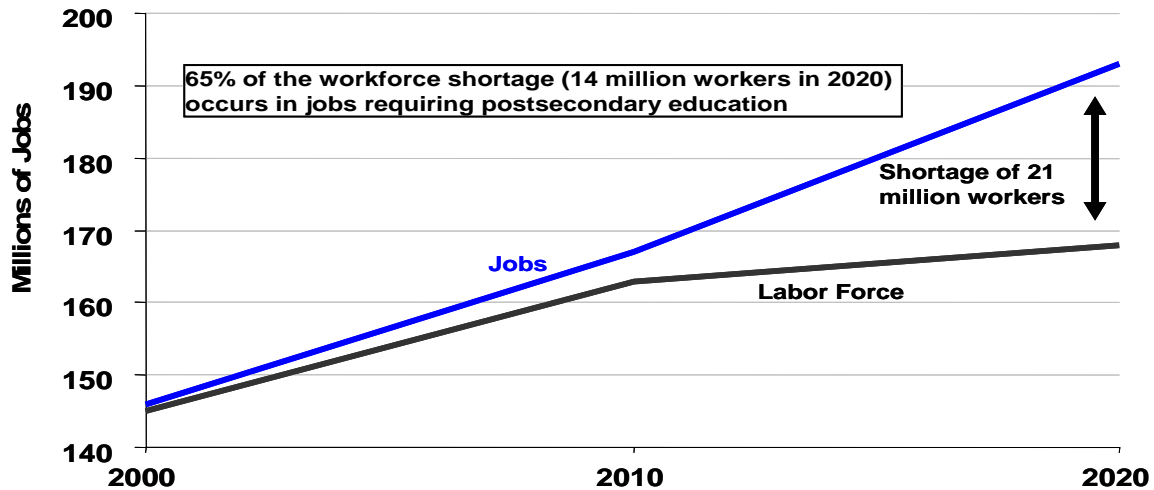
## Goal I: Increase the overall educational attainment of Montanans through increased participation, retention and completion rates in the Montana University System.

### Postsecondary Education is Critical

In Montana, and the entire United States, the global economy has made postsecondary education “the price of admission” to the middle class and increasing wages over time. For instance, 31% of manufacturing jobs -- traditionally the foundation of our middle class in America -- now require education beyond a high school diploma compared with only 8% thirty years ago. In virtually all industries, jobs that do not require high skill levels are moving to low-wage economies and those that remain increasingly require advanced training. During the next fifteen years, this country is projected to have a shortage of 21 million workers and two-thirds of these shortages will be in jobs requiring some postsecondary education. Demographic projections make it likely that shortage will be more pronounced, not less, in Montana relative to the rest of the country.

#### United States is Facing a Skilled Worker Shortage

Source: Educational Testing Service – “Standards for What?”



### Strategic initiatives we will undertake to achieve this goal

- Increase access and participation at two-year institutions by: growing dual enrollment opportunities, increase opportunities for non-traditional students, and promoting 2-year education as a low cost, viable entry point to a 4-year degree.
- Support K-12 collaboration by implementing priority themes: linking data, dual credit, and academic preparation.
- Continue to develop and grow on-line courses and programs, including the expansion of virtual college capabilities.

**Goal I (1): Prepare students for success in life through quality higher education.**

**Background**

According to Tom Mortenson of the Pell Institute, postsecondary education “has become the dominant factor in the growth of personal incomes and the living standards of people, families, cities and states.” It is a well accepted fact that more education correlates highly with increased wages. Over a forty year working career, those with some postsecondary education will earn about 75% more than those who have only a high school education. But the correlations between higher educational attainment and non-monetary benefits are equally strong. Improved health, decreased crime, higher charitable giving, and greater civic participation, among others, are all strongly related to the education of the individual and the overall education levels of a community. In addition to all the important things a university system does on a daily basis for the state and its communities, a central tenet of our mission must be to continue to prepare students for life by getting them into, and successfully through, a postsecondary education.

**1) Improve postsecondary education participation rates, with particular attention to Montana residents in MUS institutions.**

Table 1.1.1

**Montana College Continuation Rate**  
Percent of Recent Montana High School Graduates Enrolled in the Fall Semester  
Immediately Following Graduation

College Continuation Rates	1994	1996	1998	2000	2002	2004	2006	2008	2010 (goal)
# of MT High School Graduates (public & private)	10,009	10,594	11,035	11,372	11,075	11,101	10,838	11,202	10,794
<b>MT Continuation Rate</b> % of MT Grads Enrolling in College	55%	55%	57%	54%	55%	57%	57%	56%	
<b>WICHE Continuation Rate</b> % of Grads in WICHE states enrolling in College	52%	53%	50%	49%	49%	51%	56%	NA	

Montana High School Graduates	1994	1996	1998	2000	2002	2004	2006	2008	2010
% of MT Grads Enrolling in MUS institutions	35%	35%	36%	35%	35%	37%	38%	38%	43%
% of MT Grads Enrolling in College (Montana, non-MUS)	4%	4%	5%	3%	4%	5%	5%	5%	
% of MT Grads Enrolling in College (Out-of-State)	16%	16%	15%	16%	16%	15%	14%	13%	

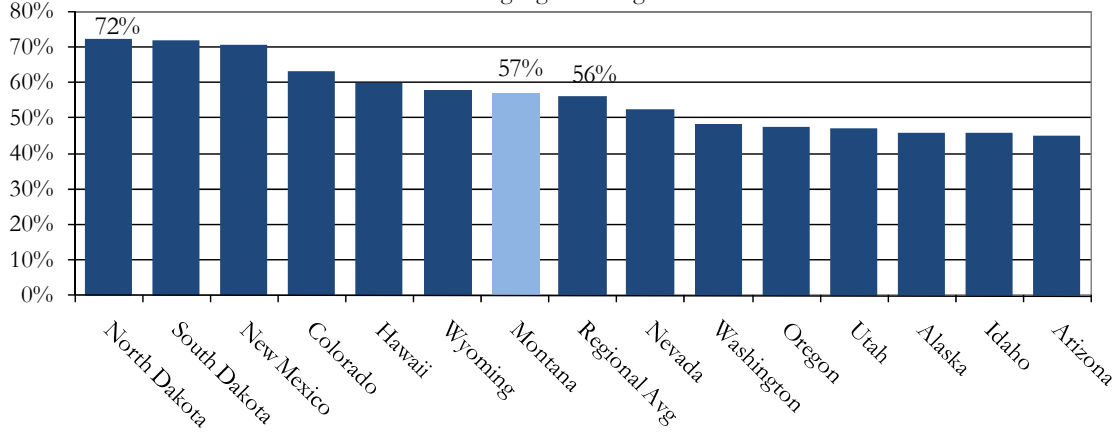
source: NCES, IPEDS Fall Enrollment Survey; high school graduates adjusted to equal WICHE, Knocking at the College Door 2006

Note: calculations for WICHE state exclude CA.; MUS calculations include community colleges



**College Continuation Rate, Fall 2006**

Percentage of high school graduates enrolling in college in the fall semester immediately following high school graduation



**2) Increase retention rates within the Montana University System.**

Table 1.1.2

**Freshmen Retention Rates**

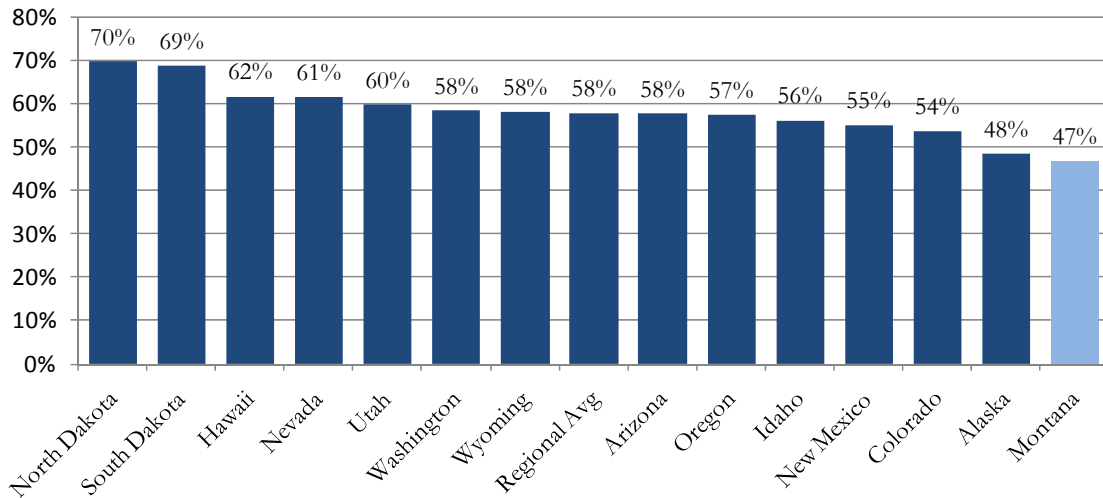
Percent of 1st-time, Full-time, Degree-seeking Freshmen Returning for a Second Year of Enrollment goal

Institutional Type	Fall 2003 Cohort (returning Fall 04)	Fall 2004 Cohort (returning Fall 05)	Fall 2005 Cohort (returning Fall 06)	Fall 2006 Cohort (returning Fall 07)	Fall 2007 Cohort (returning Fall 08)	Fall 2009 Cohort (returning Fall 10)
<b>4-year Institutions</b>						
MUS	68%	69%	69%	70%	69%	75%
WICHE* States	73%	73%	74%	70%	75%	
<b>2-year Institutions</b>						
MUS	57%	55%	52%	48%	47%	57%
WICHE* States	57%	57%	58%	56%	58%	

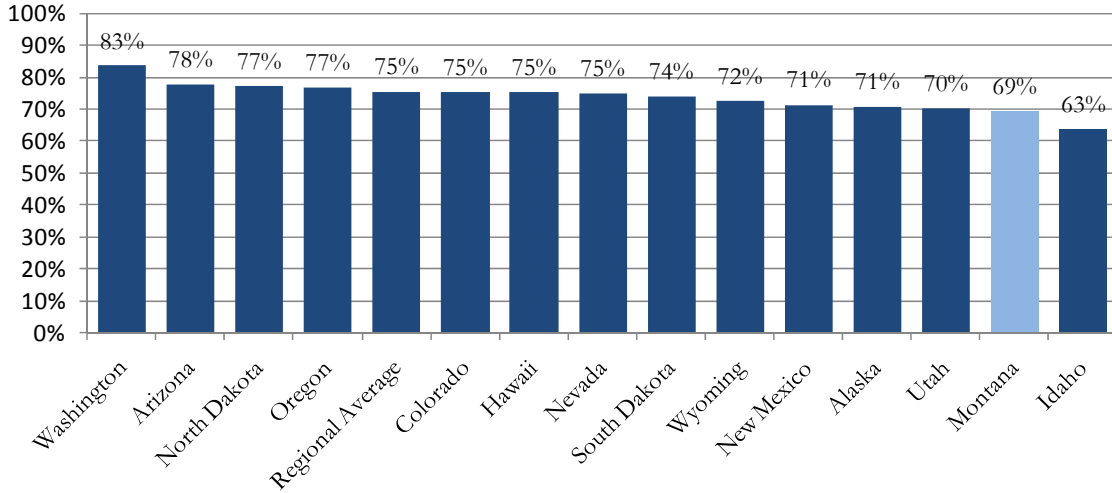
Note: data for WICHE states includes public, two and four-year, Title IV degree granting institutions only, minus CA; MUS '2-year Institutions' include comm. Colleges; source: IPEDS Fall Enrollment Survey

**Freshmen Retention Rates at 2-year Public Institutions**

Students Entering Fall 2007, Returning Fall 2008



**Freshmen Retention Rates at 4-year Public Institutions**  
Students Entering Fall 2007, Returning Fall 2008



**3) Increase completion rates for MUS Campuses.**

Table 1.1.3

**Graduation Rates**

4-year Inst.: Percent of 1st-time, Full-time, Degree-seeking Students Earning Bachelor's Degrees within 6 Years  
2-year Inst.: Percent of 1st-time, Full-time, Degree-seeking Students Earning Associate Degrees within 3 Years and Certificates within 1.5 years

Institutional Type	Graduating Classes					
	2000-01	2004-05	2005-06	2006-07	2007-08	2009-10
<b>4-year Colleges</b>						
MUS	41%	41%	42%	41%	41%	45%
WICHE States	47%	50%	50%	49%	51%	
<b>2-year Colleges</b>						
MUS*	37%	38%	32%	31%	32%	40%
WICHE States	25%	28%	25%	24%	23%	

source: IPEDS Graduation Rate Survey

\*includes both integrated 2-year programs at MSU-Northern and UM-Western, as well as MUS community colleges

Note: data for WICHE states includes public, two and four-year, Title IV degree granting institutions only (minus CA)

**Goal I (2): Make higher education more affordable by offering more need-based financial aid and scholarships.**

**Background**

High tuition does not create as much of a barrier to education if it is coupled with relatively high tuition assistance. Virtually every state in the U.S. has a substantial need-based aid program, but Montana is behind other states in the region in the amount of aid provided our students. Montana appropriations for need-based aid are about \$120 per student as compared to \$254 per student for the other fifteen western states (2007-08).

Federal loan limits no longer provide many Montana students and families with sufficient lending capacity to satisfy the cost of education. For the first time, the cost of education (including room and board) now exceeds the amount of borrowing available to many Montanans. There simply isn't enough need-based aid to serve our Montana residents and this lack of aid impacts enrollment, persistence, and success in postsecondary environments.

Figure 1.2.1

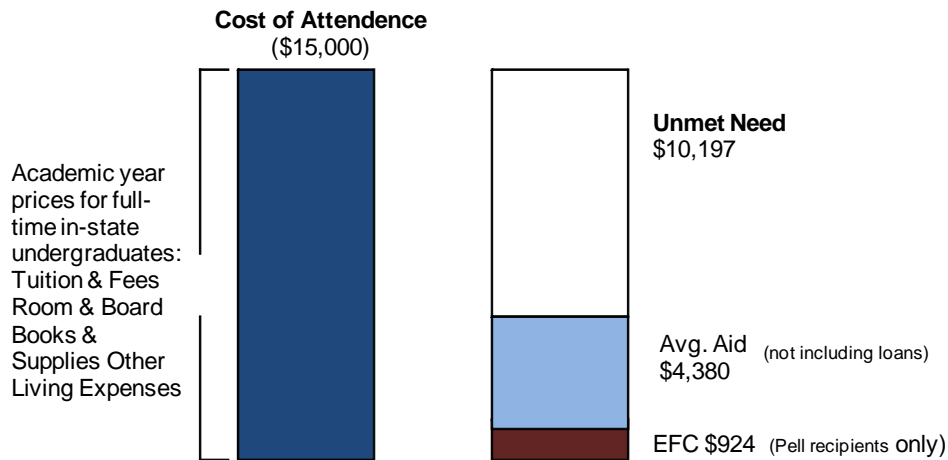
**1) Reduce the amount of unmet student need for financial aid.**

**Unmet Need of Students Receiving Pell Grants**

MSU & UM Figures (avg), 2006-07

(note: Pell serves as low-income, need-based indicator)

Cost of attendance – (expected family contribution (EFC) + average aid award to eligible students)



source: MUS Data Warehouse

**Total unmet need = \$70 Million** (N = 6,859 Pell Recipients)

**2) Increase the percentage of students who receive financial aid or scholarships.**

Table 1.2.2

**Percentage of First-time, Full-time Students Receiving Financial Aid**  
2003-04 to 2007-08

Type of Aid	MUS/Region	2003-04	2004-05	2005-06	2006-07	2007-08
Any Financial Aid*	MUS	79%	79%	81%	77%	78%
	Regional Avg	68%	69%	70%	68%	70%
Student Loans	MUS	52%	52%	52%	48%	51%
	Regional Avg	32%	32%	32%	31%	32%
Federal Grants	MUS	36%	35%	40%	30%	31%
	Regional Avg	29%	30%	27%	26%	27%
State & Local Grants	MUS	23%	22%	22%	23%	22%
	Regional Avg	22%	23%	22%	23%	26%
Institutional Grants	MUS	31%	35%	40%	34%	30%
	Regional Avg	31%	31%	34%	32%	35%

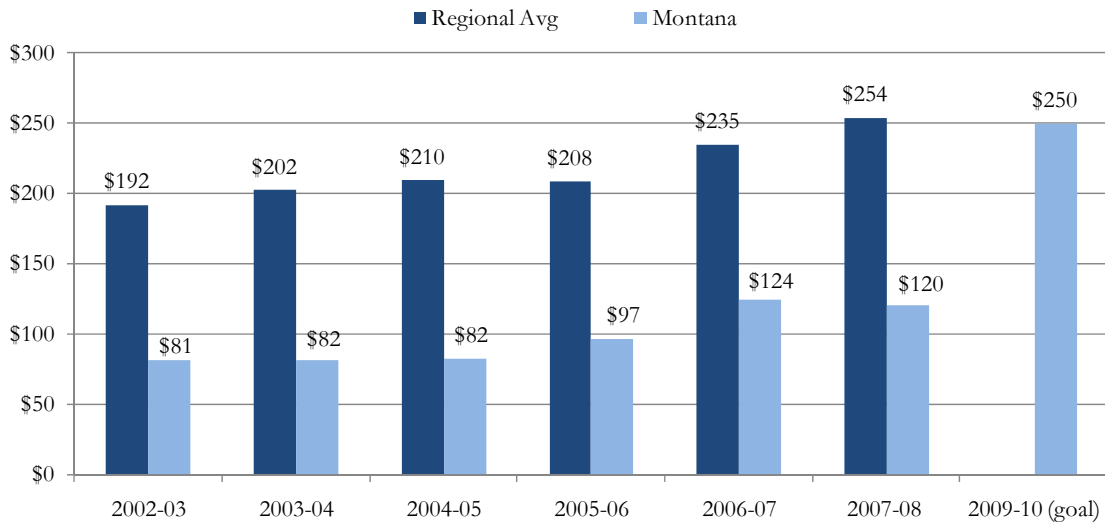
\*Grants, loans, assistantships, scholarships, fellowships, tuition waivers, tuition discounts, veteran's benefits, employer aid (tuition reimbursement) and other monies (other than from relatives/friends) provided to students to meet expenses.

source: IPEDS Student Financial Aid Survey; note: data for WICHE states includes public, two and four-year, Title IV degree granting institutions only and excludes CA; MUS 2-year institutions include community colleges.

**3) Increase the average aid/scholarship award amount.**

Figure 1.2.3

**State Funded Need-Based Aid per Student FTE**  
2002-03 through 2007-08



source: National Association of State Student Grant and Aid Programs

## **Goal I (3): Promote postsecondary education affordability.**

### **Background**

Like most states, Montana faces increasingly high postsecondary education tuition levels. Compounding the problem is the fact that Montana's median household income ranks among the lowest in the nation. Throughout most of the 1990's and into this decade the growth in resident, undergraduate tuition at two- and four-year colleges in Montana has outpaced aggregate tuition increases of the western states.

With the advent of the College Affordability Plan in 2007 and a partial tuition freeze again in 2009, tuition levels in the Montana University System are now more closely aligned with regional averages. In fact, an annual report from the Western Interstate Commission for Higher Education (WICHE) indicates that 2009-10 resident, undergraduate tuition and fees at four-year colleges in Montana are below the western regional average.

### ***Board of Regents' Tuition Targets***

In 2006, the Board of Regents set aggregate system tuition targets that should, over time, move Montana toward the regional (WICHE) average and continue to make two-year education a low-cost point of entry for students:

- Increase resident four-year tuition at no more than 5% per year;
- Maintain resident two-year tuition at current levels (0% per year);
- Increase non-resident tuition at no more than 5% per year.

Because these tuition targets are aggregate, system-wide targets, the tuition increases at individual campuses may be above or below the target levels based on the need and characteristics of a particular unit.

For resident students, the price of an education is generally governed by a simple relationship:

$$(\text{Cost of a Quality Education}) - (\text{State Support}) = (\text{Tuition \& Fees for Student}).$$

**1) Increase the amount of state support as a percentage of total personal income relative to peer states and historical levels.**

Table 1.3.1

**State Support for Higher Education Per Capita & Per \$1000 of Personal Income**

WICHE Peer States	State Support Per \$1000 of Personal Income (FY09)		State Support Per Capita (FY09)	
	Amount	Rank	Amount	Rank
Alaska	\$10.64	4	\$459	3
Arizona	5.70	13	189	13
Colorado	3.84	14	162	14
Hawaii	11.69	3	476	2
Idaho	8.65	7	279	8
Montana	6.14	10	211	11
Nevada	5.98	11	242	10
New Mexico	14.07	1	454	4
North Dakota	10.08	5	396	5
Oregon	5.78	12	209	12
South Dakota	6.69	9	251	9
Utah	9.94	6	302	6
Washington	6.78	8	287	7
Wyoming	11.90	2	589	1
Montana (FY95*)	8.18	11	198	7

source: 2009 Grapevine Report; SHEEO State Higher Education Finance Report  
 note: FY95 is adjusted for inflation

**2) Decrease tuition as a percentage of median household income.**

Table 1.3.2

**Ratio of Tuition and Fees to Median Household Income**

Public Institutions, 1993-94 thru 2009-10

Institutional Type	1993-94	1999-00	2004-05	2009-10
<b>2-year Institutions</b>				
Montana	5.0%	6.5%	8.0%	7.5%
WICHE States	3.4%	3.8%	4.5%	5.4%
<b>4-year Institutions</b>				
Montana	6.8%	8.7%	11.5%	11.0%
WICHE States	5.4%	6.2%	7.4%	8.4%
<b>Doctoral Institutions</b>				
Montana	7.6%	9.6%	13.2%	13.2%
WICHE States	6.2%	7.0%	8.4%	9.5%

source: WICHE

Note: Tuition and fees used in the calculation are the average resident tuition and fees for full-time undergraduates within each sector for each state. The WICHE average median household income was calculated as a simple average of the 15 member states (excluding CA).

**Goal I (4): Work collaboratively with the K-12 education system to increase high school academic preparedness, completion, and concurrent enrollment programs.**

**Background**

Many Montana students and families need additional support and assistance in order to aspire to, prepare for, and successfully complete postsecondary education. According to *The Education Resources Institute*, individuals from families with limited postsecondary experience are much less likely to have the personal or institutional connections through which students typically receive encouragement and guidance to pursue higher education. School counselors attempt to meet these needs for all students, but are often unable to do so as a result of limited time and resources. Montanans enrolling in postsecondary education sometimes also lack adequate preparation. The numbers of students taking college remedial courses is evidence of this problem.

Dual enrollment programs serve to promote more educational options, save students' time and money on a college degree, provide greater academic opportunities for students in small rural schools, and increase student aspirations to go to college at the two- or four-year level. However, Montana's dual enrollment programs are not offered in a consistent manner across the educational system. Consequently, a Montana student's access to dual enrollment is, to a large degree, dependent upon where they live and go to school.

Finally, it is important that Montana colleges are viewed as attractive options for our "best and brightest." As important as it is to improve college-going rates for our average students, it is equally important to retain more of our gifted students. The quality of an academic experience is greatly enhanced by diversity of the student body and by academic competitiveness among students. There is also a greater likelihood that students who leave the state for college will not return to our workforce. Clearly, it is in the interest of our students, colleges, and our economy that our public institutions are correctly viewed as a place to gain a world-class education at an affordable price.

**1) Expand outreach to at-risk and disadvantaged students as to the importance and accessibility of postsecondary education and the quality of the Montana University System.**

The Commissioner of Higher Education and the Board of Regents are working together with Montana's Student Assistance Foundation (SAF) and other partners to develop a statewide access network that will coordinate and promote access services throughout Montana. With assistance from the National College Access Network (NCAN), SAF, and the Department of Labor, a comprehensive Inventory and Gap Analysis has been completed in March 2006. This analysis identified and mapped career and college outreach services throughout Montana. With NCAN's continued support, this group is working to design and implement steps to eliminate gaps in student support & outreach within the state.

Also, in 2008 the Montana University System entered into an initiative coordinated by the National Association of System Heads (NASH). This voluntary project, dubbed the NASH Initiative on Access and Success, is aimed at increasing the participation and success of low income students and students of color in higher education. The initiative is centered on creating a nation-wide forum whereby system heads from participating states meet regularly to learn from each other, set goals, identify strategies, and publicly report outcomes. The primary focus of this collaboration is to find ways to link research and action. A2S baseline metric for Montana can be found at: [http://mus.edu/data/strategic\\_plan.asp](http://mus.edu/data/strategic_plan.asp)

**2) Expand outreach to top academic achievers graduating from Montana high schools**

Table 1.4.2

**Top Performing Students in the Montana University System**

Percentage of Montana High School Graduates Entering the MUS with ACT Scores in the Top Quartile\*

ACT Test Takers	Fall 2003	Fall 2004	Fall 2005	Fall 2006	Fall 2007	Fall 2008	Fall 2009
# of Freshmen with ACT scores	2,495	2,596	2,733	2,569	2,676	2,871	2,735
# of Freshmen with ACT scores in top quartile*	698	733	786	736	800	842	805
Percentage scoring in top quartile*	28%	28%	29%	29%	30%	29%	29%

\*score between 25-36

source: MUS High School Follow-up Report



3) Increase dual enrollment and advanced placement programs

Table 1.4.3(a)

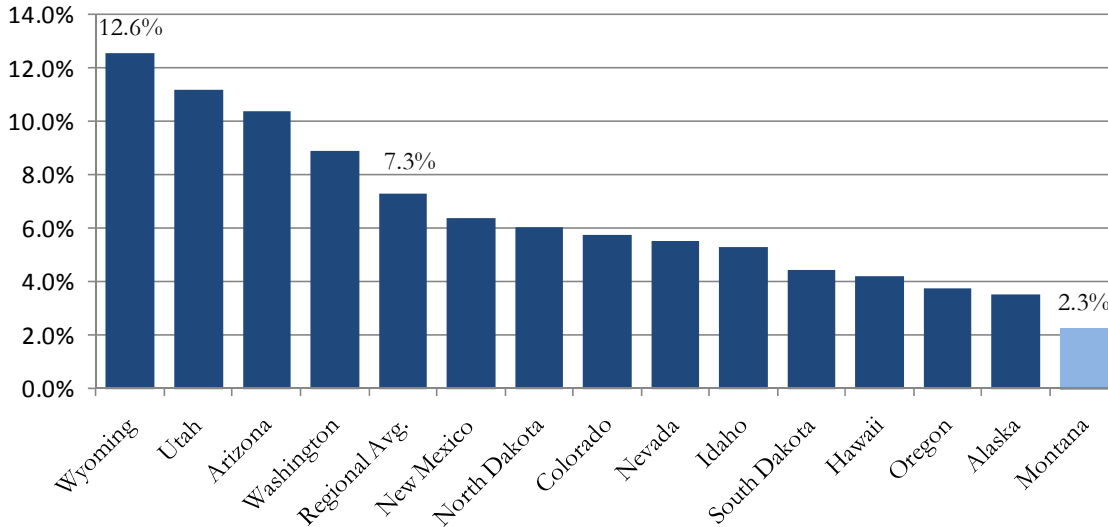
Advanced Placement Testing in Montana High Schools

AP: Participation & Performance	2001	2005	2006	2007	2008	2009	% CHG 01 to 09
# of Students Taking Exam	1,688	2,189	2,204	2,469	2,623	2,650	57%
# of Exams Taken	2,368	3,250	3,288	3,757	4,048	4,084	72%
# of Exams Scoring 3 or Higher	1,543	2,115	2,244	2,450	2,585	2,680	74%
% Exams Scoring 3 or Higher	65%	65%	68%	65%	64%	66%	1%

source: College Board, State Report

Figure 1.4.3(b)

Percent of Population 15 to 17 Years Old Enrolled in College  
Public & Private, Title IV Institutions, Fall 2007



source: NCES, IPEDS Fall Enrollment Survey (only available in odd numbered years); U.S. Census Bureau

4) Increase high school graduation rates.

Table 1.4.4

Public High School Graduation Rate

Percentage of 9th Graders Graduating from High School Four Years Later

States	High School Graduating Classes				
	1998	2000	2002	2004	2006
Montana	80%	78%	78%	79%	79%
WICHE States	70%	69%	70%	70%	69%

source: higheredinfo.org; Tom Mortenson PostSecondary Opportunity

Note: calculations for WICHE states exclude CA

**Goal I (5): Increase postsecondary enrollment of traditional and non-traditional students through expanded outreach programs, evening/weekend programs, and 2-year programs.**

**Background**

Despite Montana’s relatively low wages, our state has many high-paying jobs that go unfilled – in health care, construction, manufacturing, for example – due to a shortage of appropriately trained workers. A fundamental characteristic of the global and knowledge-based economy is that workers must be highly skilled in order to have the high productivity needed to command growing wages. This requires a good entry-level skill base and continual upgrading of skills over time as technology in the workplace changes – at an ever increasing rate. Certainly, some of this training is provided by employers in the workplace. But increasingly, due to increasing costs and complexity, businesses across the country are relying on a region’s higher education system to be active partners in providing the training needed.

The state’s demographics are also changing rapidly. Over the decade, we will have about 1,500 fewer high school graduates per year in Montana than we do today. It is simply not possible for the university system to sustain itself or our growing economy if we continue to rely on the traditional pipeline of students. Our campuses must expand outreach to non-traditional students, who are frequently place-bound or in rural areas, if they are to continue to support the economic growth of the state.

**1. Increase enrollment in two-year programs.**

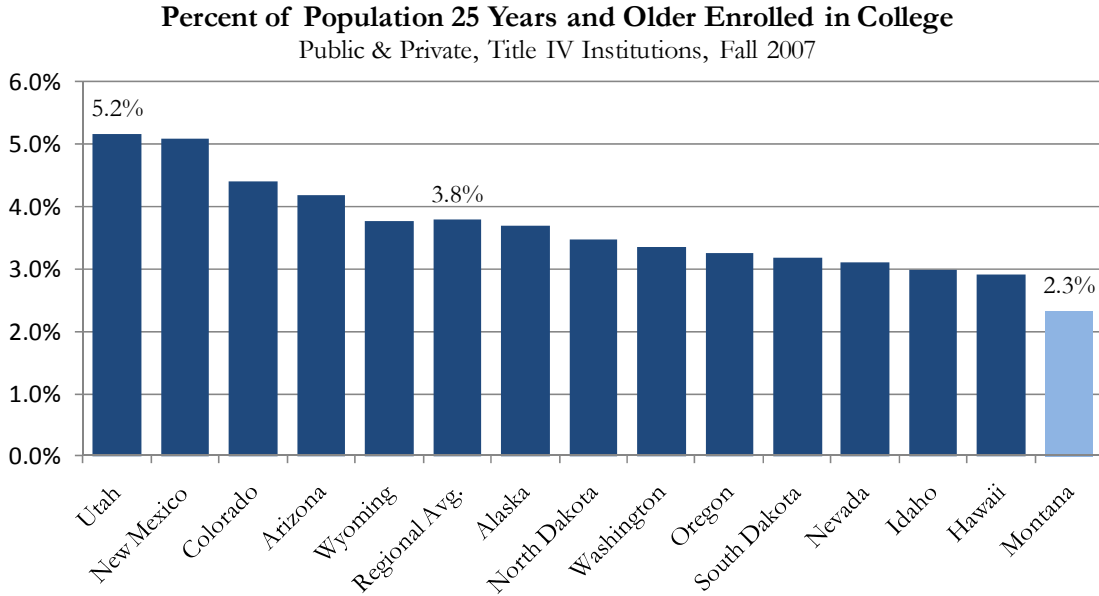
Table 1.5.1

**Enrollment at 2-year Institutions**  
Student FTE

Montana University System Educational Units	Fiscal Years								
	2001	2002	2003	2004	2005	2006	2007	2008	2009
<b>College of Technology</b>									
Billings COT	474	510	580	660	667	668	699	706	658
Great Falls COT	834	952	1,053	1,098	1,093	1,186	1,212	1,213	1,353
Missoula COT	797	802	886	896	917	1,019	1,098	1,276	1,423
MT Tech COT	286	295	232	260	280	303	304	349	331
Helena COT	724	736	738	749	684	733	719	734	806
<b>Total COT</b>	3,114	3,294	3,489	3,663	3,641	3,910	4,033	4,277	4,570
<b>Year-to-year % change</b>	1.6%	5.8%	5.9%	5.0%	-0.6%	7.4%	3.1%	6.1%	6.8%
<b>Community Colleges</b>									
Dawson CC	413	445	415	450	497	500	401	401	451
Flathead Valley CC	1,174	1,289	1,414	1,642	1,457	1,369	1,265	1,360	1,557
Miles CC	506	509	473	509	542	469	454	446	459
<b>Total CC's</b>	2,093	2,243	2,302	2,601	2,496	2,338	2,119	2,206	2,468
<b>Year-to-year % change</b>	0.6%	7.2%	2.6%	13.0%	-4.1%	-6.3%	-9.4%	4.1%	11.9%

**2. Increase programs and classes for non-traditional students, including evening and weekend programs.**

Figure 1.5.2



source: NCES, IPEDS Fall Enrollment Survey (only available in odd numbered years); U.S. Census Bureau

**Goal I (6): Improve distance and on-line learning by coordinating online delivery of education across the entire Montana University System.**

**Background**

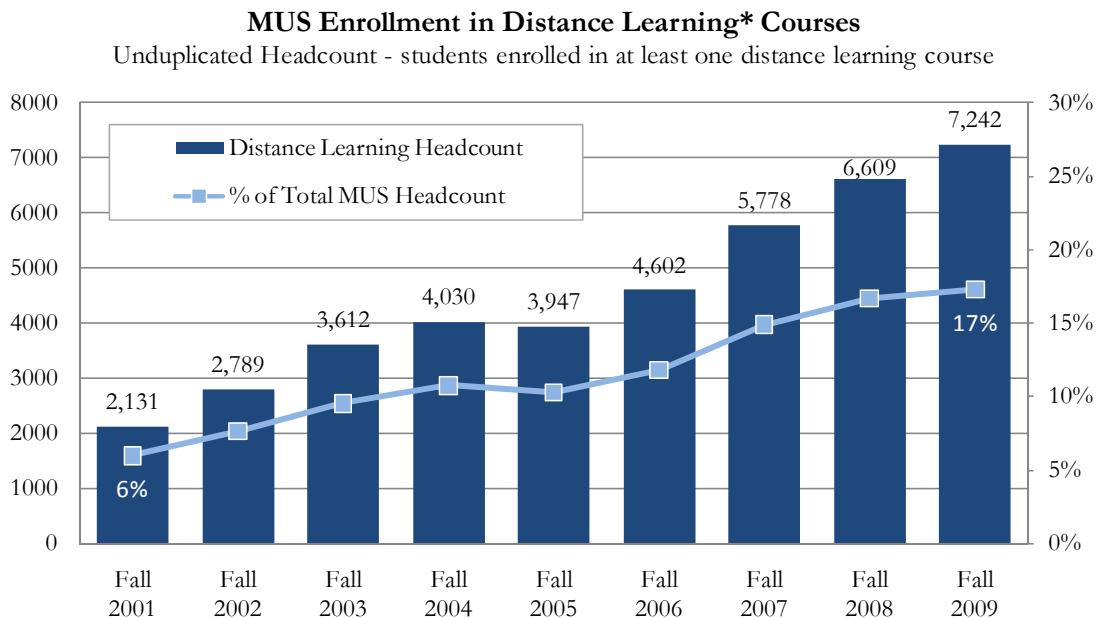
In the 2005 and 2007 legislative sessions, the Montana Legislature appropriated funds specifically aimed at increasing the availability of distance learning and the development a more centralized, coordinated approach in the Montana University System.

With these funds (\$300,000 in 2005, \$900,000 in 2007) the university system invested in distance learning resources, faculty, and infrastructure. As a result, Montana universities and colleges now offer more than 50 online degrees and nearly 500 internet classes. Some of the major accomplishments in the area of distance learning include:

- development of centralized website for single point of access to on-line courses across the system;
- centralized advertising efforts of online courses and programs;
- adoption of common learning management system for all MSU campuses;
- system-wide strategic planning and assessment of distance learning efforts; and
- elimination of on-campus fees for “solely” on-line students

**1. Increase student enrollment growth in online courses**

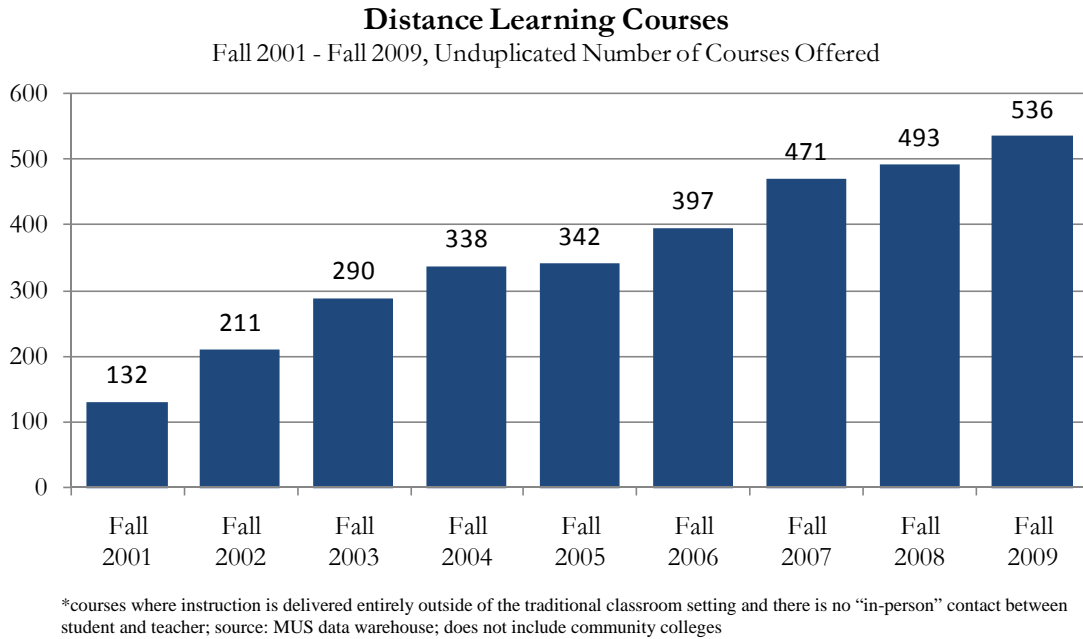
Figure 1.6.1



\*courses where instruction is delivered entirely outside of the traditional classroom setting and there is no “in-person” contact between student and teacher; source: MUS data warehouse; does not include community colleges

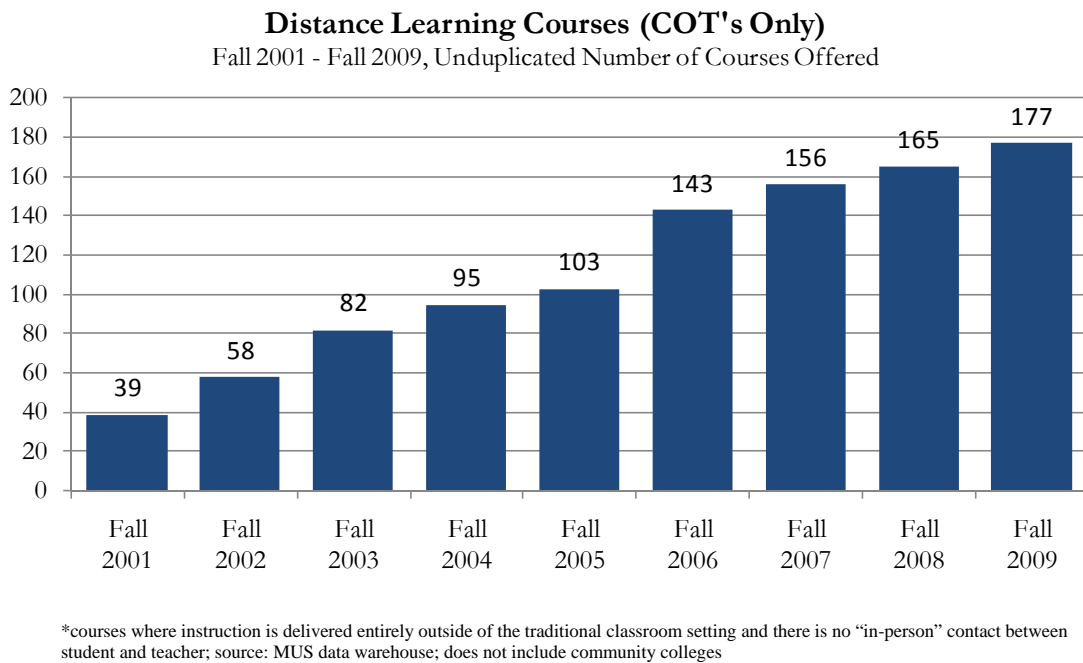
**2. Increase number of online courses and degree programs offered**

Figure 1.6.2



**3. Increase number of workforce development degree programs and certificates offered**

Figure 1.6.3



**Goal II: Assist in the expansion and improvement of the state's economy through the development of high value jobs and the diversification of the economic base.**

---

The state ranks 49<sup>th</sup> in the nation in average wages and is generally in the bottom ten states in terms of per capita income, household income and other measures of wealth per person. But with low unemployment, it is not the number of jobs in the state that need to increase. Montana needs more high-paying jobs.

In an economy that continues to globalize, Montana companies must compete with lower wage economies around the world. Higher wages can only be sustained if the value of a person's work is increased. Global competitiveness demands that, over the long-term, wages will reflect the value of the labor performed. The term for this is "productivity" and there are fundamentally two ways it increases – by increasing the skill level of the worker and/or through the use of new technology. In both of these areas, the Montana University System plays a large role in advancing the state's economy and creating more high-paying jobs.

**Strategic initiatives we will undertake to achieve this goal**

- Expand education for healthcare workers and coordinate programs across the university system to ensure a comprehensive approach to worker shortages in the state.
- Continue to invest in critical equipment and technology, particularly those that train workers for high demand occupations within the Montana economy.
- Continue to support the use of indirect cost recovery by the research campuses to support expanded infrastructure for research and commercialization.
- Develop the necessary inter-agency agreements and create a comprehensive statewide education tracking system for students from K-12 through postsecondary education and into the workforce.

**Goal II (1): Increase responsiveness to workforce development needs by expanding and developing programs in high demand fields in the state.**

**Background**

The availability of a skilled workforce has become one of the most important issues for attracting, retaining, and growing businesses that provide higher paying jobs. Workforce skill level is a key driver of innovation and productivity improvement across all industries. The success of Montana's economy depends on our ability to provide the skilled workers needed for jobs that exist, or will exist, in our state. The Montana University System is by far the largest source of educated and trained workers for our businesses. If our programs are not responsive to the changing needs of Montana businesses, we cannot hope to retain our citizens or grow our income levels.

In an environment of limited funding support, however, it is critical that we align limited resources for public higher education with the needs of the economy. Traditional liberal arts education must remain a foundation of the system, because the general skills it imparts are central to business innovation and individual success. And, given the expenses involved in technical education, there simply are not enough resources to provide high-quality training for every job that might exist in the state. The highest priority must be given to student and employer demands in fields where current or projected job creation outstrips the capacity of the higher education system to produce trained graduates.

**1) Increase employer satisfaction with graduates.**

***Method:***

- 1) Measure employer satisfaction at the program level within each institution and provide periodic summary reports to the Board of Regents (common template to be designed by Two-Year Council).
- 2) Measure enrollment in customized training and continued education at the institutional level and provide periodic summary reports to the Board of Regents.

***Results:***

2007-08 Results: [http://mus.edu/data/employer\\_satisfaction.asp](http://mus.edu/data/employer_satisfaction.asp)

**2) Increase degrees and certificates awarded in high-demand occupational fields.**

Table 2.1.2(a)

**Degrees & Certificates Awarded in Healthcare Fields**

Degrees	1994-95	1999-00	2004-05	2005-06	2006-07	2007-08	goals
							2009-10
2-year degrees & certificates	288	313	482	517	598	515	740
4-year degrees & above	337	278	327	394	367	387	450
Total	625	591	809	911	965	902	1190

note: data include community colleges  
 source: IPEDS Completions Survey  
 Healthcare Related Degrees include the following 2000 CIP Codes: 51.0000

Table 2.1.2(b)

**Degrees & Certificates Awarded in Construction-related Fields**

Degrees	1994-95	1999-00	2004-05	2005-06	2006-07	2007-08	goals
							2009-10
2-year degrees & certificates	151	201	212	188	202	250	249
4-year degrees & above	177	177	170	162	137	146	177
Total	328	378	382	350	339	396	426

note: data include community colleges  
 source: IPEDS Completions Survey  
 Construction Related Degrees include the Following 2000 CIP Codes:  
 14.0800 Civil Engineering, 15.0000 Engineering Technologies/Technicians, 46.0000 Construction Trades, 47.0100 Electrical/Electronics Maintenance Technology, 47.0200 Heating, Air Conditioning, and Ventilation Technology/Technician, 47.0300 Heavy/Industrial Equipment Maintenance Technologies, 48.0500 Precision Metal Working, 49.0202 Construction/Heavy Equipment/Earthmoving Equipment Operation

**3) Increase job placement rates.**

Table 2.1.3

**Job Placement - Construction & Healthcare Related Majors**

Students graduating in construction and healthcare related programs that enter the workforce in Montana within six months of leaving the institution (students may not have earned a degree or certificate)

	# Graduating	Employed in MT Following Graduation		Employed Graduates Working in Field of Study	
	2006-07	#	%	#	%
Construction	323	224	69%	52	23%
Healthcare	866	640	74%	453	71%

source: MUS Data Warehouse, Unemployment Insurance Wage Records, Quarterly Census of Employment and Wages



**4) Increase the number of certificates and degrees conferred in 2-year programs.**

Table 2.1.4(a)

**Associate Degrees Conferred**

Associate of Arts, Associate of Science, & Associate of Applied Science, 1999-00 to 2007-08

Institutional Type	goal									
	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2009-10
Colleges of Technology <sup>1</sup>	632	674	687	764	800	772	782	837	832	
Community Colleges	450	392	408	448	511	523	497	345	355	
Integrated 2-year Programs <sup>2</sup>	153	145	148	188	175	166	148	139	122	
Total	1235	1211	1243	1400	1486	1461	1427	1321	1309	1570
% Change (annual)		-1.9%	2.6%	12.6%	6.1%	-1.7%	-2.3%	-7.4%	-0.9%	

Table 2.1.4(b)

**Certificates Conferred**

Certificates of Achievement Awarded (below the baccalaureate level), 1999-00 to 2007-08

Institutional Type	goal									
	1999-00	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2009-10
Colleges of Technology <sup>1</sup>	239	168	127	140	122	138	167	266	281	
Community Colleges	33	18	20	36	132	54	107	49	64	
Integrated 2-year Programs <sup>2</sup>	-	-	-	-	-	-	2	6	9	
Total	272	186	147	176	254	192	276	321	354	304
% Change (annual)		-31.6%	-21.0%	19.7%	44.3%	-24.4%	43.8%	16.3%	10.3%	

Notes

1) includes associate degrees conferred at MT Tech & MSUB

2) UM-Western & MSU-Northern

source: IPEDS Completions Survey

**Goal II (2): Establish collaborative programs among institutions, the private sector, and the state to expand research, technology transfer, the commercialization of new technologies, and the development of our entrepreneurs.**

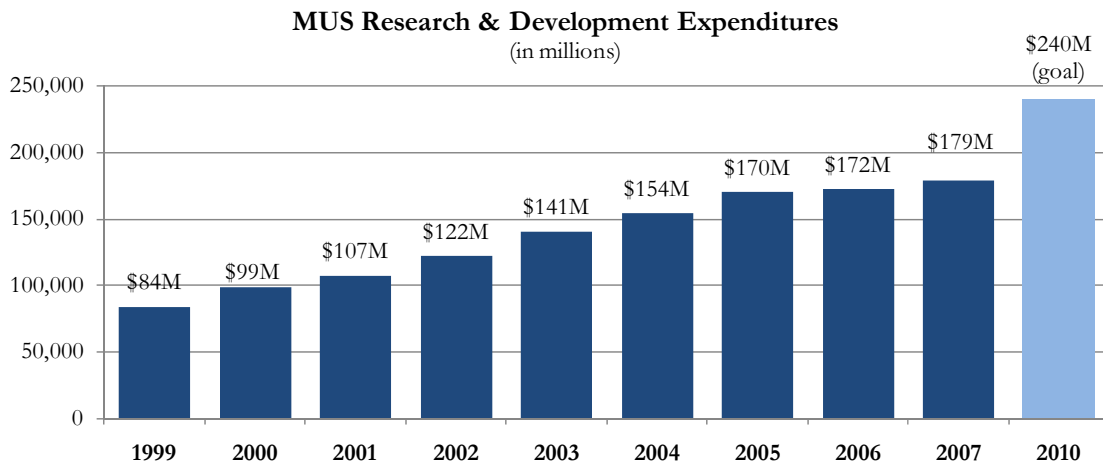
**Background**

Because Montana lacks the large corporate headquarters that typically conduct private sector research, a large portion of our state's expenditures for research derive from the university system or its partnerships with our state's businesses. This research is in itself a large industry, putting approximately \$179 million (2007) of "outside" money directly into the Montana economy. Growing research in the university system increases high-paying jobs. To fully leverage this research, however, we must continue to work hard to commercialize that innovation in our own economy.

Of course, no quality research university will ever be able to find a home for all its technology in the local economy. Cutting edge research is by its nature global, and Montana will never have all the resident companies needed to commercialize all of our research. But the Montana University System does generate considerable intellectual property that is suitable for development within the state. With very limited resources, the university system has already established a number of quite successful partnerships with Montana businesses. What the state does not have is many resources to identify and coordinate new, or currently unidentified, opportunities – particularly with businesses that are not physically located near one of the major research campuses.

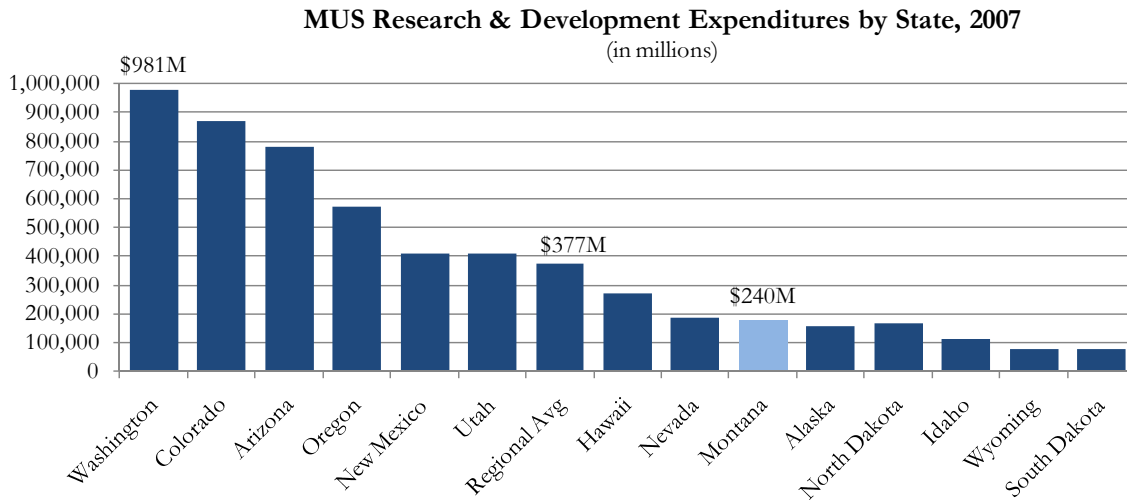
**1) Increase research & development receipts and expenditures.**

Figure 2.2.1(a)



source: National Science Foundation (NSF)

Figure 2.2.1(b)



source: National Science Foundation (NSF)

**MUS Research & Development Expenditures by Institution**  
FY 2006 - FY 2009

Campus	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010
MSU Bozeman	\$103,048,865	\$102,116,323	\$96,150,553	\$98,431,691	goal
MSU Billings	\$713,093	\$625,580	\$818,395	\$314,253	
MSU Northern		\$61,337	\$334,556	\$434,634	
UM Missoula	\$60,070,832	\$62,119,445	\$62,405,729	\$67,116,785	
UM MT Tech	\$7,842,753	\$7,141,492	\$7,882,940	\$8,408,515	
<b>MUS Total</b>	<b>\$171,675,543</b>	<b>\$172,064,177</b>	<b>\$167,592,173</b>	<b>\$174,705,878</b>	<b>\$240,000,000</b>

source: MUS Annual Research Report

## 2) Increase technology licenses with Montana businesses.

Table 2.2.2(a)

**MUS Technology Transfer Activity**

Montana State University	FY 2006	FY 2007	FY 2008	FY 2009
Patents Issued	3	11	10	18
Active Licenses (Total)	109	130	153	184
Active Licenses (MT Companies)	68	81	89	105
Percent Licenses w/ MT Companies	62%	62%	59%	57%
License/Patent Revenues	\$49,949	\$69,165	\$221,614	\$290,690
Reimbursed Patent Costs from Licenses	\$169,982	\$138,562	\$442,630	\$267,142
University of Montana	FY 2006	FY 2007	FY08	FY09
Patents Issued (annual)	22	28	2	5
Active Licenses (Total)	23	24	22	21
Active Licenses (MT Companies)	14	15	16	12
Percent Licenses w/ MT Companies	64%	63%	73%	57%
License/Patent Revenues	\$0	\$0	\$0	\$19,203
Reimbursed Patent Costs from Licenses	\$0	\$0	\$0	\$4,000

source: MUS Annual Research Report

Note: NSF and MUS Annual Research Report data are not directly comparable. NSF data includes state, pass through, and student support service funds that are not included in the MUS Annual Research Report.

### **Goal III: Improve institutional and system efficiency and effectiveness.**

---

The Montana University System is more than a \$1 billion per year enterprise providing employment for about 7,000 Montanans. Clearly, in any enterprise of this size there will be some inefficiencies and imperfections. The university system realizes, however, that unless it does everything reasonably possible to be effective with its current resources it cannot credibly ask for much-needed higher levels of sustained funding and support. Even though General Fund appropriations comprise only about 16% of total university system revenues, the taxpayers still contribute about \$210 million per year (FY 2009) and have a right to demand accountability for this spending. Our students, who bear a large portion of the cost of their public education, also deserve a system that provides a high quality education as efficiently as possible and allows them to have reasonable portability among the institutions in the system.

A critical ingredient of accountability is being able to accurately measure changes in the system and progress toward long-term goals. This includes the ability to measure student success and financial efficiency. To that end, the university system has invested in a centralized data warehouse in order to maintain and continue to develop system-level measures of efficiency and effectiveness.

#### **Strategic initiatives we will undertake to achieve this goal**

- Continued implementation of the Transferability Initiative.
- Maintain and improve the centralized data warehouse.
- Consider possible revisions to the MUS funding formula and allocation model.
- Maintain the proportion of spending for instruction, academic support, and student services (aggregated) above 70% of total expenditures.

**Goal III (1): Improve the accuracy, consistency and accessibility of system data, including the continued development of a comprehensive data warehouse.**

**Background**

Good policy begins with good information. Policymakers, inside and outside the university system, need to have reliable data that will provide an accurate picture of performance and conditions in their state.

The university system has invested in a unit record level, student data warehouse. The capabilities of the system are vast, ranging from the ability to track and monitor student success, compare pathways of transfer students versus non-transfer students, and link information with other state agencies, such as the Department of Labor and Industry and the Office of Public Instruction. Recently, the university system completed the finance side to the data warehouse, allowing system staff to complete the majority of annual operating budget reports, as well as generate a variety of ad hoc reports.

A great deal of progress has been made in establishing a comprehensive information management tool and the MUS continues to evolve into a data driven organization capable of providing the Board of Regents, as well as a variety of external constitutions, with the information needed to make informed decisions and the data necessary to demonstrate accountability.

**How we will measure our progress:**

**Goals:**

- Enhance/expand OCHE reporting capabilities using the MUS student data warehouse, to include a systematic means for tracking students, measuring student success, and addressing transferability issues.
- Expand OCHE's student data warehouse to encompass all public, postsecondary enrollments in Montana, including student records from the community colleges.
- Develop linkages between K-12, postsecondary, and labor information in order to produce a method for annually tracking student cohorts from high school to college to the workforce.
- Design and implement human resource and financial aid components of OCHE's data warehouse.

See Appendix A - Information Technology Strategic Directions, pg. 34.

**Goal III (2): Deliver efficient and coordinated services.**

**Background**

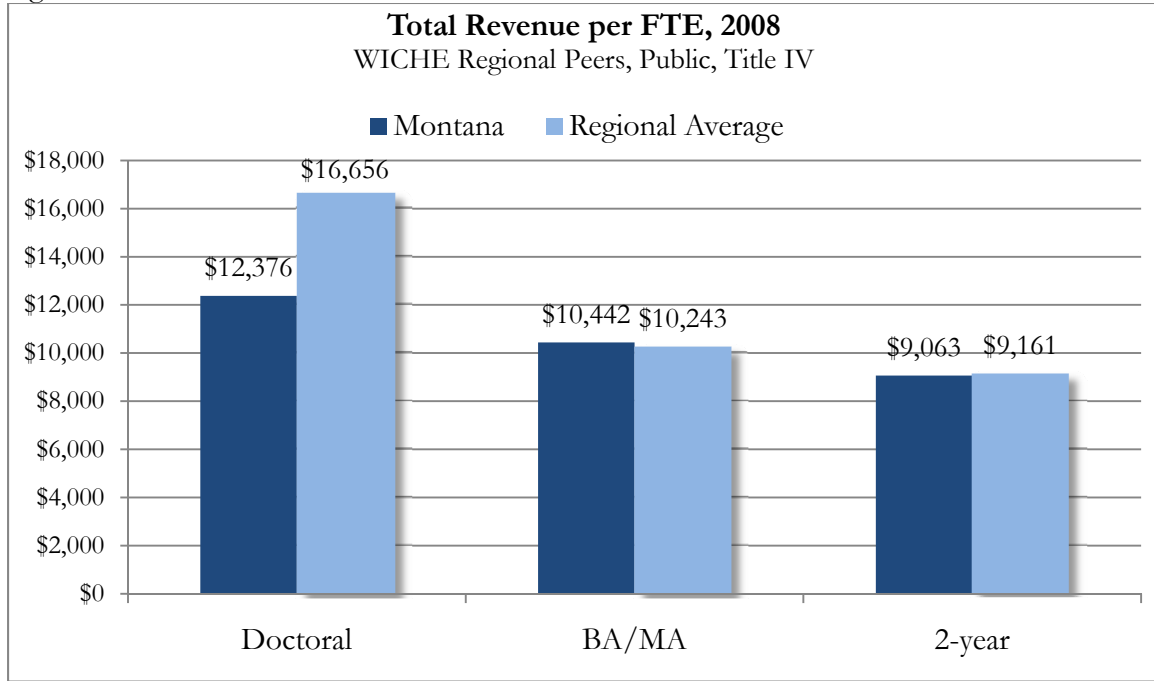
In order for the university system to maintain credibility and continually improve its ability to serve the citizens of this state it must be efficient in the use of its resources. But measuring efficiency in higher education can be difficult. Typical business-like measures of increasing through-put and “profit center” accounting can have significant and deleterious effects on quality. Yet, the taxpayers and our students deserve accountability for the way in which we spend their money.

One reasonable measure of financial accountability is how much it costs to educate a student over time and relative to our peer institutions. While these are certainly imperfect measures of efficiency, the Montana University System needs to evaluate its costs relative to other institutions that have missions similar to our own. The system must also be diligent in ensuring that it allocates the resources it does have in a way that remains focused on its primary missions. A common criticism of all public education, higher education and K-12, is that too much money is spent on overhead or administration and not enough for student education. True or not, this issue demands that higher education evaluate constantly and communicate effectively the manner in which it allocates and uses its resources.

Another measure of efficiency is how well the university system is coordinating among its various campuses. A good measure of this is how effectively students can move between these campuses. Montana has eleven university system campuses, three community colleges, and seven tribal colleges located throughout the state. It is important to maintain these campuses because we have a geographically large state and proximity of a postsecondary institution correlates positively with participation in higher education. A consequence of this is, however, that we have a number of relatively small institutions that cannot possibly offer all the training and education that every student at that campus requires. In our state more than 40% of bachelor degree graduates have transferred between institutions at least once.

1) Expenditures per student relative to peer institutions and history.

Figure 3.2.1



source: IPEDS Finance Survey

Note: in order to develop a reliable comparison with regional peers, total revenue was used instead of expenditures. In this analysis, but revenue and expenditures represent funds derived from state and local appropriations, as well as tuition and fees.

2) Percentage of expenditures in instruction, research, public service, academic support, student services, institutional support, plant operation and maintenance, and scholarships.

Table 3.2.2

MUS Expenditures by Category

Expenditure Program Areas	1985	1995	2005	2010 (budgeted)
Instruction	53%	54%	52%	49%
Research	1%	1%	1%	1%
Public Service	0%	1%	1%	1%
Academic Support	11%	11%	12%	12%
Student Services	9%	9%	7%	8%
Institutional Support	10%	9%	9%	10%
Operation of Plant	13%	12%	12%	12%
Scholarships/Fellowships/Waivers	2%	4%	7%	8%
<b>Instruction + Acad. Support + Stud. Services</b>	<b>74%</b>	<b>74%</b>	<b>71%</b>	<b>68%</b>

**Goal:** Instruction + Academic Support + Student Services remains above 70%

**3) Improve articulation and transferability among all 2-year and 4- year institutions, including community colleges and tribal colleges as measured by:**

- a. All undergraduate courses in the Montana University System will go through the process of common course numbering

*Benchmarks:*

- 12 disciplines completed by January 1, 2009
- 10 additional disciplines completed by June 30, 2009
- All disciplines completed by June 30, 2011

- b. All courses deemed to be significantly similar must possess the same prefix, course number, title and credits; and directly transfer on a one-to-one basis

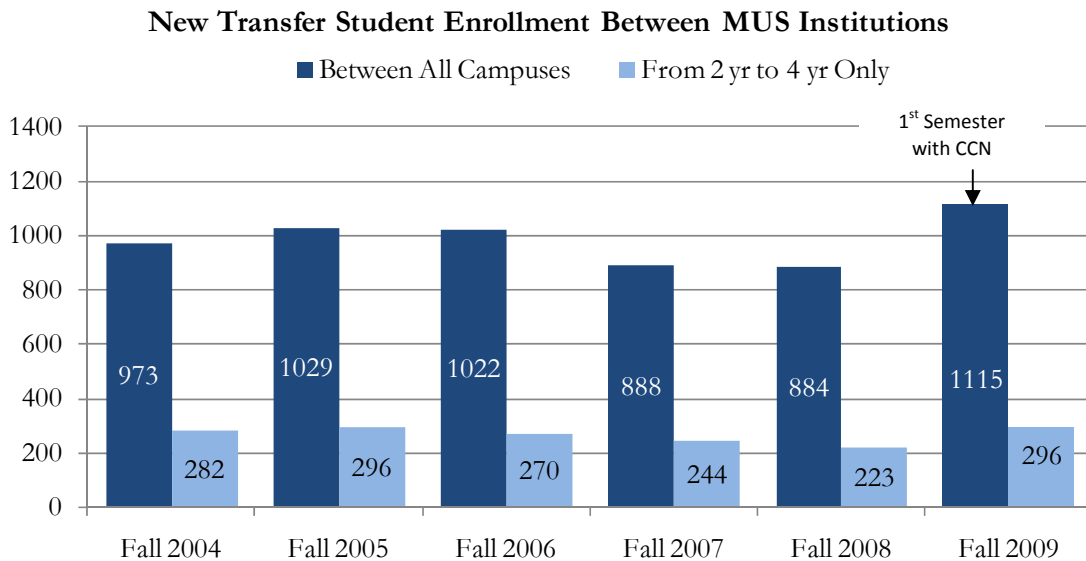
See BOR Policy 301.5.5 – [Equivalent Course Identification and Numbering](#)

- c. Common course numbering will result in a transparent computerized program that demonstrates transferable courses across the university system

*Benchmark:*

Link to [Common Course Numbering Transfer Guide](#)

Table 3.3.1



source: MUS Data Warehouse (includes Community Colleges)



**Goal III (3): Biennial review/update of the budget allocation model consistent with state and system policy goals and objectives.**

**Background**

The Montana Legislature allocates the vast majority of funding for our education units in a “lump sum” that is then allocated by the Regents to the individual institutions within the system. How these funds are allocated is central to every strategic objective of the Board. The current allocation model is more than a decade old and is, at best, complicated and difficult to understand. In order to achieve the goals and objectives in this strategic plan, the basic funding allocation model must be continually analyzed. To be an effective tool for achieving our strategic goals, the allocation model should, at a minimum:

- Focus on financing for the state system, not only funding for the individual campuses;
- Be transparent as to the policy choices of the Regents, Legislature, and executive branch;
- Provide a framework for dealing with allocations to institutions, tuition revenues, financial aid, and mandatory fee waivers;
- Have a specific fund dedicated to furthering Regents’ priorities;
- Reward institutions for aggressively seeking revenues from sources other than students and the state;
- Protect institutional viability by moderating the short-term effects of enrollment changes;
- Provide incentives for institutions to collaborate as a system;
- Ensure equity of funding among all institutions;
- Maintain an adequate base of funding and education quality for all institutions;
- Maintain a differential between 2-year and 4-year tuition.

**Appendix A:**  
Information Technology Strategic Directions

In order to meet the three primary goals outlined in the Board of Regents' Strategic Plan, the Montana University System will strive to implement the following Information Technology Strategic Directions:

1. Enterprise Information Systems

Develop an integrated information system with the goal of maximizing administrative efficiencies, allowing for seamless student enrollment between campuses, and promoting consistent business practices across all institutions.

Assumptions:

- The MUS will continue to make incremental steps toward developing a single integrated information system.
- Incremental steps include, but are not limited to, the following:
  - Utilizing a single instance of the administrative information software that is hosted and managed by the main campus on each side of the system (i.e. UM and MSU host a single instance of Banner for their affiliated campuses, with the potential for including the community colleges, as well as tribal colleges).
  - Allowing for multi-institutional functionality to enable (for example): enrollments from more than one campus on students' schedules and transcripts, financial aid based on combined enrollment at more than one institution, centralized administrative services, such as, a single source for payroll generation.
  - Standardizing codes and data elements, as well as aligning business rules and practices.

2. Network Connectivity

Continue to develop and improve an education network that provides high speed telecommunication capabilities that link MUS institutions, provide connectivity to national research and education networks, and expand the reach of the MUS to remote areas of Montana.

3. Data Warehousing

Maintain and work to improve a system-wide data warehouse for the purpose of measuring the goals in Board of Regents' Strategic Plan, collecting and reporting official enrollment, developing linkages with K-12 and workforce data, and producing and monitoring the MUS Operating Budget.