

A REPORT REQUESTED  
BY THE  
MONTANA BOARD OF REGENTS  
OF HIGHER EDUCATION

ISSUES IN  
MONTANA HIGHER EDUCATION

OFFICE OF THE  
COMMISSIONER OF HIGHER EDUCATION  
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## PREFACE

At the direction of the Montana Board of Regents of Higher Education, the Office of the Commissioner of Higher Education has undertaken a study of various aspects of the Montana University System. The studies that follow were prepared by the Commissioner of Higher Education and his staff, with the assistance of campus personnel who provided data and feedback on earlier drafts.

It needs to be stressed that this document is a working document; it is not a final, unchangeable plan. The studies are intended to be a starting point for discussion; and while this discussion may be difficult, even painful, it nonetheless must occur if the Montana University System is to emerge from the current economic conditions as a healthy, responsive educational system.

For organizational purposes this report is divided into three parts. The first part provides general background information on the Montana University System, how it has come to be, and how it operates. The second group of chapters discusses a variety of topics that have general application to the System. The discussions focus on the financial aspects of each topic. The third and final part of this report treats the sensitive areas of program consolidation, campus merger, and unit closure. This last part also examines the relationship of the University System to the vocational-technical centers and the community colleges.

A special word of thanks is due to Professor Sue Hart of the Eastern Montana College faculty who assisted with the editing process.



## Chapter 1

### INTRODUCTION

Over the last several years the Montana University System has existed in an environment of limited financial resources and shifting state priorities. The signals of deteriorating quality are becoming apparent. Faculty and administrative turnover is high, and recruitment for open positions is difficult due to low salaries and the level of instructional support. A number of classrooms and laboratories are ill-equipped to prepare students for the modern-day workplace. Many students cannot complete required courses on schedule because classes are full. Library and operations budgets have been sharply curtailed, and needed maintenance seems to be continually deferred. Support for research and public service is severely limited at a time when both are needed to revitalize the state's economy. In short, the System is inadequately funded to offer the level of educational services it is attempting to provide, and serious problems are beginning to surface with continued accreditation of some of the professional programs.

The effects of decreasing quality have serious and long lasting consequences. Most important, graduates may not be competitive in the workplace, and they may not acquire the life-long learning skills essential for successful long-term careers in a constantly changing environment. Once an institution is perceived as declining in quality, parents and students may look elsewhere for college options. The brightest students may be lost to other states and many will not return. Loss of the highest ability students because of lowered standards would diminish institutional quality even further. Excellence in education is developed over a long period of time. Once lost, it

is not easily regained. The state is the loser -- economically, culturally, and socially.

The Board of Regents has become increasingly concerned about the long-term impact of limited resources on the University System. It acknowledges that either additional revenues must be appropriated by the state or services must be reduced. In April 1986, the Board devoted a two-day workshop to planning the future of higher education in Montana. Some of the basic assumptions underlying those discussions were

- 1) the difficult economic conditions in the state would continue at least through the next biennium;
- 2) there would be a relatively stable demand for higher educational services over the next several years;
- 3) there is a need for expanded efforts in regional planning; and
- 4) the University System must expand its efforts to assist the state in economic development.

The Board of Regents recognizes that it is necessary to adjust to the difficult economic conditions in the state. However, such a process must not impair the academic integrity of the System. To that end the Board adopted the following goals as a framework for planning:<sup>1</sup>

- 1) to enhance the quality of the instructional, research, and service functions of the University System;
- 2) to provide student access and improve achievement within the overall educational system;
- 3) to support the Board of Public Education in its efforts to ensure a high quality system of elementary and secondary education in the State of Montana;
- 4) to assure the citizens of Montana that the University System and the community colleges will be accountable for the efficient use of resources allocated;

- 5) to work closely with business, industry, and the governmental community for the economic revitalization of Montana;
- 6) to maintain the mission and integrity of the Montana University System; and
- 7) to preserve the state's investment in the physical facilities on the campuses of the University System.

The above goals can be accomplished even in the existing economic environment through programmatic changes within the System. The Constitution of Montana states "The government and control of the Montana university system is vested in a board of regents of higher education which shall have full power, responsibility, and authority to supervise, coordinate, manage, and control the Montana university system, and shall supervise and coordinate other public educational institutions assigned by law."<sup>2</sup> With the strong statement of governance and control in the Constitution, it is clear the Board of Regents is broadly empowered to make constructive programmatic and structural changes.

The Board of Regents has a strong commitment to the maintenance of quality educational opportunity in Montana. To that end, the Commissioner's office was "directed to conduct a study of the University System which would provide data on what savings or improvement of quality would occur as a result of any of the following actions":<sup>3</sup>

- 1) consolidating, merging, and/or closing facilities;
- 2) reducing support to intercollegiate athletics;
- 3) discontinuing summer sessions;
- 4) moving to the semester system at all units;
- 5) shutting down campuses during short time periods;
- 6) establishing admission requirements;
- 7) increasing tuition;
- 8) consolidating or reducing graduate programs;

- 9) raising student faculty ratios;
- 10) raising productivity ratios of faculty;
- 11) consolidating programs -- transferring selected programs from one unit to another (identifying the affected programs);
- 12) evaluating the role of higher education with respect to vocational-technical schools and community colleges;
- 13) evaluating the role of extended and continuing education in providing educational opportunities; and
- 14) coordinating services with the private schools and tribally controlled community colleges.

Soon after the Board's action in directing a study of the above issues, the financial condition of the University System worsened considerably because of the general economy of the State. Decisions made during the June 1986 special legislative session resulted in a 13 percent reduction in the amount of general fund monies appropriated to the System for FY 1987. The total System budget will be 6 percent less than anticipated at the beginning of the biennium.

It would be unrealistic to assume that budget reductions made in the special session are temporary. Rather, they must be considered base adjustments from which future appropriations will be calculated. Given the current outlook on the state's economy, little if any improvement can be expected in funding for higher education in the upcoming biennium.

## Chapter Footnotes

<sup>1</sup> Montana, Board of Regents, Workshop Minutes, April 17-18, 1986, pp. 6-7.

<sup>2</sup> Montana, Constitution (1972), Art. IX, Sec. 9.

<sup>3</sup> Montana, Board of Regents, Workshop Minutes, pp. 8-9.





Part One  
BACKGROUND



## Chapter 2

### PREVIOUS STUDIES OF MONTANA HIGHER EDUCATION

Since its inception, higher education in Montana has been the subject of political debate and controversy. In 1893, the state legislature had heated debates on the issue of how many institutions should be established and where they should be located.<sup>1</sup> On one side were those who held that there should be only one institution (apparently in Great Falls). On the other side were those who wanted separate institutions located in several communities. This latter group was composed of representatives of many communities which had earlier attempted to become the state capitol.

The issue of the number of institutions and their locations was settled by the Legislature in 1893, with the creation of four state supported institutions: the Agricultural College at Bozeman; the University at Missoula; the School of Mines at Butte; and the Normal School at Dillon.

The state's first constitution provided for a State Board of Education, with the duties of that board defined in statute in 1893. The legislation creating the institutions provided that each unit would have a local executive board. Controversy soon developed over the authority of the local executive boards vs. the authority of the State Board of Education. This issue was settled in 1909 when the Legislature made the local executive boards subordinate to the State Board of Education.

An integrated system of higher education was established in 1913 with the creation of the University of Montana, composed of the four original institutions. In that same year, legislative

authorization was provided for Northern Montana College, which opened in 1929. Eastern Montana College was authorized in 1925, and opened in 1927.

In 1916 the University of Montana system began to operate under a chancellor. The state board also had an appointed executive secretary. This administrative structure was in place until 1951. However, from 1933 to 1943 the position of chancellor was not filled, and the executive secretary of the Board served in the capacity of the chief administrative officer of the University of Montana system. In 1951 the position of chancellor was abolished, and the system once again operated with an executive secretary who was responsible to the State Board of Education. This arrangement continued until the adoption in 1972 of a new constitution creating a separate Board of Regents and the office of the Commissioner of Higher Education.

Most of the early issues affecting public higher education were dealt with directly in legislative sessions. Formal studies were begun in the early 1940s, and Table 2-1 gives a chronology of these studies.

TABLE 2-1  
Higher Education Studies

DATE	STUDY
1942	The Governor's Committee on Reorganization and Economy issued a report which recommended a unified university system and another report which proposed a department of education.
1944	The State Board of Education appointed the Montana Commission on Higher Education which recommended a new administrative plan for the higher education system.
1945	The State Board of Education submitted to the Legislature the "Melby Plan," a policy statement on the functions of the various units.

TABLE 2-1 - Continued

DATE	STUDY
1953	Montana's "Little Hoover" Commission reported on course duplication.
1958	The Governor's Committee on Education Beyond the High School and the Montana Legislative Council issued individual reports on higher education and joined together to sponsor a third study--the "Durham Report." The Montana Taxation-Education Commission sponsored a fourth study known as the "Peabody Report." The President's Committee on Education Beyond the High School initiated this activity when it asked Governor Aronson to appoint a committee similar to itself for Montana.
1960	The Montana Legislative Council proposed a recodification of the laws concerning higher education and a constitutional amendment creating separate boards of education. Neither proposal passed the legislature.
1962- 1963	The higher education system issued its <u>Master Plan Study</u> in 1962 and a revised edition of the plan the next year.
1968	The State Board of Education commissioned the "Flesher Report," a study of vocational-technical education in Montana. The Montana Legislative Council also reviewed the status of vocational education in the state.
1970	The Montana Legislative Council recodified the statutes concerning higher education, but made no substantive changes in the laws. In addition, the Montana Commission on Executive Reorganization submitted a comprehensive report to the legislature which included recommendations pertaining to post-secondary education, and the Montana Association of Community Colleges released its guidelines for community colleges.
1971- 1972	The Montana Legislative Council studied duplication of course offerings in the Montana University System.

TABLE 2-1 - Continued

DATE	STUDY
1972	The Montana Constitutional Convention Commission analyzed the Education Article of the 1889 Constitution. The Constitutional Convention later adopted a provision which created a separate Board of Regents.

Source: Montana, Commission on Post-Secondary Education, Review of Prior Studies of Post-Secondary Education in Montana (Staff Report No. 1), 1973, pp. 2-3.

The primary focus of studies previous to 1972 was upon governance and administration. Not unlike today, issues such as efficiency, the number of institutions, duplication of courses, and role and scope of institutions were major concerns.

Since 1972, when the new constitution placed the governance and control of the Montana University System under the Board of Regents, additional study of the issues in higher education has occurred. The most comprehensive study conducted external to the System was that of the Montana Commission on Post-secondary Education. This study was authorized and funded by the 1973 Legislature. The study group became commonly known as the "Blue Ribbon Commission."

The Montana Commission on Post-secondary Education made wide-ranging recommendations on goals, educational policies, governance, planning, financing, institutional missions, health care education, Native Americans, post-secondary education, and accountability.<sup>2</sup> In all, a total of 127 recommendations were made by the Commission. The most controversial issues in the Commission's deliberations were recommendations on closure of institutions and/or changing of institutional missions. This is supported by minority reports included in the final report.

Many of the recommendations of the Commission on Post-secondary Education have been implemented. Others were considered and rejected for a variety of reasons, perhaps political, economic, or because they were unworkable. The Commission's report was of real value to the Board of Regents during its deliberations in developing a Role and Scope document for the System. Those deliberations were begun in 1976, and led to the adoption of the System's Role and Scope document in 1979.

The emphasis of the Role and Scope study centered upon developing a more specific academic thrust for each institution; included were a review of doctoral programs and an examination of duplication of programs at the master's and baccalaureate levels. Since its adoption, the Role and Scope statement has been used as the primary guide for program approval in the System.

#### Chapter Footnotes

<sup>1</sup> Lincoln J. Aikins, "The Montana System, An Experiment in Integrated Higher Education" (Ph.D. dissertation, Montana State University, 1958), pp. 11-31.

<sup>2</sup> Montana, Commission on Post-Secondary Education, Final Report, 1974.





## Chapter 3

### SYSTEM ISSUES

Despite fiscal pressure, the Montana University System is as viable today from an educational perspective as it has been at any time in its history. It is under severe scrutiny at this point because of the economic conditions in the state, not because inferior service is being provided. The System's present character is a result of policy decisions made throughout its history. It is a dynamic enterprise under continuous modification in response to changing conditions and changing student needs. Even though the System has changed dramatically over the years, there is an apparent public perception that higher education is inefficient and overextended, both in number of programs offered and in number of institutions maintained. In order to measure the validity of such criticism, it is essential to place those issues in appropriate context. The following discussion will provide some basis for consideration of those generalized issues, including

- 1) a comparison of the number of institutions in Montana with the number in several other rural states;
- 2) enrollment demand on the System;
- 3) changing student characteristics;
- 4) efficiency in terms of student costs; and
- 5) the state's ability to provide resources for higher education.

Montana is not unique in the number of institutions existing within the state. Rural states generally have a higher proportion of institutions per population than urban states. Tables 3-1 through 3-4 summarize information on fourteen states regarding the number of institutions compared to population and square miles

contained within the states. These states were selected because they have populations or geographic characteristics similar to those of Montana.

Table 3-1 illustrates the ratio of the number of institutions to state population. It includes both public and private institutions, including tribally controlled community colleges, because all of the institutions have a direct bearing upon the availability of educational opportunity in a state.

TABLE 3-1  
Ratio of the Total Number  
of Higher Education Institutions  
to the State Population

RANK	STATE	RATIO 1:		RANK	STATE	RATIO 1:
1.	North Dakota	31,095		8.	Wyoming	58,750
2.	South Dakota	31,409		9.	Rhode Island	59,188
3.	New Hampshire	32,893		10.	Washington	65,587
4.	Maine	37,500		11.	Arizona	71,526
5.	Oregon	50,635		12.	Idaho	78,667
6.	Montana	52,467		13.	Nevada	88,889
7.	New Mexico	54,292		14.	Utah	104,357

Source: Constance Healy Torregrosa, ed., 1985 Higher Education Directory (Washington, D.C.: Higher Education Publications, Inc., 1985)

Table 3-1 indicates that relative to population, Montana ranks sixth of the selected states in the number of institutions of higher education available.

In Table 3-2 only the public institutions are used in computing the ratio of the number of institutions to state population. This table also indicates that Montana ranks sixth out of the fourteen states in the ratio of population to each institution. Wyoming, which is usually mentioned as having the "best" structure, has the fewest people per public institution.

TABLE 3-2  
Ratio of the Total Number  
of Public Higher Education Institutions  
to State Population

RANK	STATE	RATIO 1:		RANK	STATE	RATIO 1:
1.	Wyoming	58,750		8.	Washington	125,212
2.	North Dakota	59,364		9.	Oregon	125,381
3.	New Hampshire	76,750		10.	Nevada	133,333
4.	New Mexico	81,438		11.	Idaho	134,857
5.	Maine	86,538		12.	Arizona	143,053
6.	Montana	87,444		13.	Utah	162,333
7.	South Dakota	98,714		14.	Rhode Island	315,667

Source: Torregrosa, ed., 1985 Higher Education Directory.

Table 3-3 indicates the ratio of the total number of public institutions to square miles. Distance to a college or a university has a great bearing on student access and public service. A state with a large geographic area may require more institutions relative to population than a small state.

TABLE 3-3  
Ratio of Total Number of Public Institutions  
to Square Miles

RANK	STATE	RATIO 1:		RANK	STATE	RATIO 1:
1.	New Hampshire	775		8.	New Mexico	7,604
2.	Rhode Island	1,670		9.	Utah	9,440
3.	Washington	2,066		10.	South Dakota	11,007
4.	Maine	2,555		11.	Idaho	11,937
5.	Oregon	4,618		12.	Wyoming	12,239
6.	Arizona	5,969		13.	Montana	16,349
7.	North Dakota	6,424		14.	Nevada	18,423

Source: Torregrosa, ed., 1985 Higher Education Directory.

Table 3-3 shows that relative to geographic area, only Nevada has a larger ratio of square miles per institution than Montana. Whatever one's opinion might be relative to how the higher education system is structured in this state, the data would indicate that compared to other states, the number of units is not as extravagant as some make it out to be.

Table 3-4 includes the total number of public institutions in the states that were used for the calculations in Tables 3-1 through 3-3.

TABLE 3-4  
Number of Public Four-Year  
and Two-Year Institutions

RANK	STATE	NUMBER		RANK	STATE	NUMBER
1.	Washington	33		8.	Utah	9
2.	Oregon	21		9.	Montana	9
3.	Arizona	19		10.	Wyoming	8
4.	New Mexico	16		11.	South Dakota	7
5.	Maine	13		12.	Idaho	7
6.	New Hampshire	12		13.	Nevada	6
7.	North Dakota	11		14.	Rhode Island	3

Source: Torregrosa, ed., 1985 Higher Education Director.

The number of institutions necessary to serve the state's needs is a matter of policy, rather than any specific set of population or geographic criteria. The state could choose to have one institution or a dozen, and have high quality education in either case. While the availability of more institutions increases access for students, a corollary decrease may occur in efficiency unless enrollments in each institution are sufficient to attain reasonable costs per student.

No major enrollment changes are anticipated which would dramatically impact the number of institutions in the System. Table 3-5 illustrates the enrollment trends from 1965-66 through 1984-85, and the projections for the next two years.

The System experienced continual enrollment increases throughout the 1970s and the early 1980s. Since 1983, enrollments have decreased approximately 3 percent per year. A similar decrease is expected next year, followed by two years with very slight increases. Enrollments are expected to be stable during the period 1988 through 1992, and then show moderate increases through the turn of the century.

Over the past decade there have been significant changes in the characteristics of students enrolling at the institutions. Although the number of students graduating from high school each year has decreased, there has not been a comparable decrease in enrollments in higher education. This is attributable to the increasing number of females enrolling, as well as the increasing number of older students. If current trends continue, 40 percent of the student population of the future may be made up of those students who have typically been considered "non-traditional." Many of these students will attend on a part-time basis.

TABLE 3-5  
Total FYFTE Enrollments  
Montana University System  
Fiscal Year 1965-66 to 1984-85

YEAR	UM	MSU	TECH*	WMC	EMC	NMC	TOTAL
1965-66	5,927	6,108	580	1,002	2,467	1,190	17,274
1966-67	5,816	6,495	598	1,022	2,844	1,336	18,111
1967-68	6,578	7,061	568	1,056	3,199	1,417	19,879
1968-69	7,290	7,526	707	1,147	3,534	1,435	21,639
1969-70	7,984	8,050	848	1,253	3,839	1,530	23,504
1970-71	8,810	8,479	951	1,224	3,937	1,552	24,953
1971-72	9,009	8,373	846	1,086	3,417	1,388	24,119
1972-73	8,737	8,165	737	931	2,903	1,189	22,662
1973-74	8,362	8,174	683	721	2,815	1,067	21,822
1974-75	8,575	8,585	714	742	3,048	1,065	22,729
1975-76	8,496	8,965	894	735	3,306	1,225	23,621
1976-77	8,057	9,320	991	597	3,124	1,240	23,329

TABLE 3-5 - Continued

YEAR	UM	MSU	TECH*	WMC	EMC	NMC	TOTAL
1977-78	7,979	9,613	1,058	582	3,105	1,312	23,649
1978-79	7,868	9,555	1,139	643	2,910	1,149	23,264
1979-80	8,010	9,811	1,247	699	2,964	1,235	23,966
1980-81	8,283	10,338	1,531	825	3,177	1,382	25,536
1981-82	8,226	10,675	1,791	820*	3,329	1,542	26,383
1982-83	8,458	10,691	2,048	859*	3,494	1,663	27,213
1983-84	8,431	10,789	2,090	882*	3,538	1,745	27,475
1984-85	8,265	10,353	1,880	880*	3,468	1,707	26,553
1985-86	8,186	10,104	1,659	854*	3,480	1,693	25,976
1986-87**	8,093	9,714	1,658	861*	3,428	1,593	25,347
1987-88**	8,248	9,765	1,705	868*	3,607	1,648	25,841
1988-89**	8,162	9,858	1,674	861*	3,505	1,645	25,705

Source: Montana, Office of the Commissioner of Higher Education, Enrollment in Higher Education Institutions in the State of Montana, 1985, p. 61.

\*Semester calendar

\*\*Estimated FYFTE

Males account for 49.5 percent of students enrolled in higher education in Montana, and females account for 50.5 percent. Table 3-6 covers enrollment distribution by sex for only two years. This information must be viewed in the context that in 1972 the percentage of female enrollment was 39.8 percent.

TABLE 3-6  
Distribution of Higher Education Enrollment by Sex

INSTITUTION	NUMBER OF STUDENTS				FEMALES AS % OF TOTAL	
	FALL 1984		FALL 1985		1984	1985
	MALE	FEMALE	MALE	FEMALE		
<u>Montana University System</u>						
UM	4,698	4,515	4,569	4,420	49.0%	49.2%
MSU	6,310	4,725	6,041	4,669	42.8	43.6
MCMST	1,359	769	1,179	753	36.1	39.0
EMC	1,622	2,585	1,629	2,544	61.4	61.0
WMC	453	441	465	505	49.3	52.1
NMC	1,052	759	983	746	41.9	43.2
Total	15,494	13,794	14,866	13,637	47.1%	47.8%

TABLE 3-6 - Continued

INSTITUTION	NUMBER OF STUDENTS				FEMALES AS % OF TOTAL	
	FALL 1984		FALL 1985		1984	1985
	MALE	FEMALE	MALE	FEMALE		
<u>Independent Colleges</u>						
CC	582	938	587	914	61.7%	60.9%
CGF	575	764	513	565	57.1	52.4
RMC	234	269	200	228	53.5	53.3
Total	1,391	1,971	1,300	1,707	58.6	56.8
<u>Community Colleges</u>						
DCC	326	435	330	456	57.2	58.0
MCC	291	576	222	498	66.4	69.2
FVCC	609	1,347	618	1,413	68.9	69.6
Total	1,226	2,358	1,170	2,367	65.8	66.9
Grand Total	18,111	18,123	17,336	17,711	50.0%	50.5%

Source: Montana, Office of the Commissioner, Enrollment in Higher Education p. 14.

Table 3-7 illustrates the changing age of students attending the Montana University System. The average age of the student population is expected to continue to increase in the future. Presently, the lowest average age is found at Montana State University because MSU draws the largest percentage of freshmen directly from high school.

TABLE 3-7  
Average Age, By Sex  
Montana University System

INSTITUTION	FALL 1981	FALL 1982	FALL 1983	FALL 1984	FALL 1985
<u>Montana State University</u>					
Male	22.0	22.3	22.6	23.3	23.6
Female	23.2	22.5	23.8	23.6	23.9
All	22.5	22.4	23.1	23.4	23.7
<u>University of Montana</u>					
Male	23.7	24.0	24.1	24.8	25.0
Female	23.6	23.8	25.3	25.2	25.5
All	23.6	23.9	24.7	25.0	25.2
<u>Eastern Montana College</u>					
Male	23.6	24.8	25.1	25.6	25.7
Female	26.4	25.4	25.7	26.6	27.0
All	25.4	25.2	25.5	26.2	26.5
<u>Montana Tech</u>					
Male	23.3	22.9	23.4	24.1	25.6
Female	25.6	25.4	25.7	26.7	28.2
All	24.1	23.7	24.3	25.0	25.8
<u>Northern Montana College</u>					
Male	23.7	23.6	23.4	25.2	26.2
Female	24.4	24.2	25.7	26.4	27.2
All	24.0	23.9	24.3	25.7	26.6
<u>Western Montana College</u>					
Male	23.8	24.7	23.8	24.0	25.6
Female	26.5	28.7	26.9	25.5	28.2
All	25.2	26.8	25.3	24.8	27.0

Source: Montana, Office of the Commissioner, Enrollment in Higher Education, p. 15.

In its deliberations, the Board of Regents must take into consideration the relative efficiency of the existing System. If the System is already operating in a cost-effective manner, significant savings cannot be achieved without reducing the number of students served.



One of the primary measures of efficiency in higher education is the annual cost per student. By this measure the System continues to offer reasonably priced educational opportunities to Montana citizens. The first column of Table 3-8 illustrates the tax dollars appropriated per student (general fund and millage). The second column indicates the cost per student with tuition included.

Table 3-8 does not take into consideration the two percent budget reduction made in FY 1986. Even without that reduction, Montana ranked thirtieth on the basis of tax support per student (first column). When tuition is added, Montana ranks fortieth of the fifty states and the District of Columbia (second column). Accusations of inefficiency in the University System seem to be unwarranted.

Recent statistics published in The Chronicle of Higher Education indicate that for 1984-86 the University System had one of the smallest two-year funding increases in the nation (only Texas was lower).<sup>1</sup> The two-year gain was 5 percent, compared to the national average of 19 percent. That gain, plus part of the funding base, was lost in the 2 percent general fund rescission occurring in the 1986 budget and by the reductions made in the June 1986 special legislative session. In 1987, the System must operate with \$8,836,184, or 6.1 percent, less than was anticipated a year ago.

The funding problems facing the System go well beyond the budget reductions which have recently occurred. The System needs nearly \$22,000,000 in additional revenue if it is to maintain any degree of quality in all of the services it provides, including \$10,000,000 to update equipment and library resources and \$2,800,000 to bring faculty salaries to a competitive level with peer institutions.

TABLE 3-8  
Comparison of Cost Per Student

STATE SUPPORT ONLY			TUITION ADDED		
RANK	STATE	DOLLARS PER STUDENT*	RANK	STATE	DOLLARS PER STUDENT**
1.	Alaska	\$14,038	1.	Alaska	\$15,218
2.	Dist Col	7,715	2.	Dist Col	8,399
3.	Hawaii	6,697	3.	Wyoming	7,355
4.	Wyoming	6,664	4.	Hawaii	7,346
5.	New York	5,174	5.	Delaware	6,726
6.	Massachusetts	5,057	6.	New York	6,338
7.	California	4,666	7.	Rhode Island	6,129
8.	New Jersey	4,569	8.	New Jersey	6,082
9.	Connecticut	4,436	9.	Massachusetts	6,068
10.	South Carolina	4,406	10.	South Carolina	5,986
11.	Rhode Island	4,397	11.	Pennsylvania	5,952
12.	Idaho	4,205	12.	Vermont	5,788
13.	Alabama	4,055	13.	Connecticut	5,724
14.	Tennessee	4,025	14.	Michigan	5,396
15.	Delaware	4,011	15.	New Hampshire	5,345
16.	Georgia	3,958	16.	Alabama	5,251
17.	New Mexico	3,929	17.	Tennessee	5,231
18.	Utah	3,871	18.	Georgia	5,141
19.	Nevada	3,828	19.	California	5,123
20.	Minnesota	3,777	20.	Minnesota	5,005
21.	Pennsylvania	3,676	21.	Indiana	4,985
22.	Michigan	3,622	22.	Nevada	4,918
23.	Kentucky	3,547	23.	Maine	4,905
24.	Arkansas	3,527	24.	Wisconsin	4,883
25.	Wisconsin	3,514	25.	Idaho	4,878
26.	Florida	3,484	26.	Iowa	4,868
27.	Washington	3,476	27.	Utah	4,857
28.	Kansas	3,476	28.	Kentucky	4,770
29.	North Carolina	3,465	29.	Maryland	4,688
30.	Montana	3,459	30.	Ohio	4,663
31.	Maine	3,408	31.	Virginia	4,588
32.	Arizona	3,398	32.	Oregon	4,574
33.	Iowa	3,390	33.	Arkansas	4,569
34.	Illinois	3,384	34.	New Mexico	4,546
35.	Oregon	3,362	35.	Missouri	4,513
36.	Maryland	3,318	36.	Kansas	4,511
37.	Indiana	3,299	37.	Washington	4,490
38.	Missouri	3,261	38.	Arizona	4,393
39.	Virginia	3,222	39.	Colorado	4,324
40.	Texas	3,085	40.	Montana	4,296
41.	North Dakota	3,072	41.	Florida	4,241
42.	Oklahoma	\$3,055	42.	Illinois	\$4,206

TABLE 3-8 - Continued

STATE SUPPORT ONLY			TUITION ADDED		
RANK	STATE	DOLLARS PER STUDENT*	RANK	STATE	DOLLARS PER STUDENT**
43.	Ohio	\$3,016	43.	North Dakota	\$4,182
44.	West Virginia	2,986	44.	West Virginia	4,123
45.	Louisiana	2,938	45.	North Carolina	3,981
46.	South Dakota	2,768	46.	Texas	3,947
47.	Nebraska	2,725	47.	South Dakota	3,904
48.	Colorado	2,617	48.	Louisiana	3,848
49.	Mississippi	2,515	49.	Nebraska	3,757
50.	New Hampshire	2,283	50.	Oklahoma	3,684
51.	Vermont	1,912	51.	Mississippi	3,514
	United States	\$3,785		United States	\$4,902

Source: Kent Halstead, State Profiles: Financing Public Higher Education 1985-86 (Ninth Edition; Washington, D.C.: Research Associates of Washington, 1986), pp. 33 and 34.

\*The dollar figure reflects state education appropriation per student.

\*\*The dollar figure reflects state education appropriation plus estimated tuition per student.

The state of Montana faces serious budget problems as it enters the 1987 legislative session. Estimates of additional revenue needed to maintain existing state government services are as high as \$100,000,000. It seems there is little choice but to increase revenues to meet those needs. If the state had a broadened tax base, resources could be made available to overcome the existing financial problems. The first column of Table 3-9 indicates the tax capacity in Montana in comparison to other states. The second column indicates Montana's ranking for tax effort in comparison to other states.

Tax capacity as used in Table 3-9 is "the potential of state and local governments to obtain revenues for public purposes through various kinds of taxes. Measured by a 'representative tax system' that defines the tax capacity of a state and its governments, or the amount of revenue they could raise if all 50 state-local systems applied identical tax rates (national averages) to their respective tax bases."<sup>2</sup>

Tax effort as used in Table 3-9 is the "state and local tax revenue collected as a percentage of state and local tax capacity. Tax effort measures, as a percentage, how much state and local government tax capacity is actually used. The tax revenue collected for all states equals total tax capacity nationwide, so that the national effort, by definition, is 100 percent. Effort measures for the individual states indicate how they compare with the national average."<sup>3</sup>

Table 3-9 shows that Montana ranks nineteenth in tax capacity and twenty-seventh in tax effort in comparison with other states. It seems appropriate to conclude that the citizens are not unreasonably taxed in relation to citizens of other states, and additional resources could be made available to support higher education without placing an undue burden on taxpayers.

TABLE 3-9  
Estimated 1984 Tax Capacity and Tax Effort

TAX CAPACITY				TAX EFFORT			
RANK	STATE	DOLLARS PER CAPITA	INDEX	RANK	STATE	PERCENT	INDEX
1.	Alaska	\$3,146	241	1.	Alaska	161.5%	161
2.	Wyoming	2,282	175	2.	New York	158.8	159
3.	Nevada	1,928	148	3.	Massachusetts	138.3	138
4.	Connecticut	1,665	128	4.	Wisconsin	135.0	135
5.	Colorado	1,612	124	5.	Michigan	134.2	134
6.	California	1,574	121	6.	Minnesota	130.9	131
7.	Delaware	1,573	121	7.	Rh. Island	121.8	122
8.	Texas	1,555	119	8.	Illinois	113.4	113
9.	Dist Col	1,547	119	9.	Iowa	111.1	111
10.	New Jersey	1,494	115	10.	Wyoming	109.8	110
11.	Hawaii	1,468	113	11.	New Jersey	108.4	108
12.	N Hampshire	1,455	112	12.	Pennsylvania	106.6	107
13.	Oklahoma	1,442	111	13.	Maryland	106.5	107
14.	Massachusetts	1,442	111	14.	Massachusetts	106.4	106
15.	New Mexico	1,402	107	15.	Ohio	106.3	106
16.	N Dakota	1,397	107	16.	Hawaii	104.1	104
17.	Florida	\$1,371	105	17.	Utah	103.3%	103

TABLE 3-9 - Continued

TAX CAPACITY				TAX EFFORT			
RANK	STATE	DOLLARS PER CAPITA	INDEX	RANK	STATE	PERCENT	INDEX
18.	Louisiana	\$1,357	104	18.	Washington	100.5%	100
19.	Montana	1,343	103	19.	Oregon	100.2	100
20.	Nebraska	1,337	102	20.	Maine	97.8	98
21.	Kansas	1,311	100	21.	Indiana	97.7	98
22.	Washington	1,311	100	22.	Connecticut	96.5	96
23.	Maryland	1,298	99	23.	Arizona	95.1	95
24.	New York	1,286	99	24.	Mississippi	94.8	95
25.	Arizona	1,285	98	25.	Kansas	94.7	95
26.	Vermont	1,264	97	26.	S Carolina	94.5	94
27.	Virginia	1,259	96	24.	Montana	93.0	93
28.	Minnesota	1,252	96	28.	Vermont	92.5	93
29.	Oregon	1,239	95	29.	N Dakota	91.8	92
30.	Maine	1,232	94	30.	California	91.6	92
31.	Illinois	1,200	92	31.	W Virginia	90.8	91
32.	Michigan	1,161	89	32.	Nebraska	89.8	90
33.	N Carolina	1,160	89	33.	Georgia	89.8	90
34.	Georgia	1,159	89	34.	Kentucky	88.7	89
35.	Missouri	1,154	88	35.	Alabama	88.6	89
36.	Ohio	1,148	88	36.	Virginia	88.5	88
37.	S Dakota	1,147	88	37.	N Carolina	86.8	87
38.	Pennsylvania	1,141	87	38.	Missouri	86.0	86
39.	Wisconsin	1,141	87	39.	Idaho	85.5	86
40.	Rhode Island	1,140	87	40.	Arkansas	84.1	84
41.	Iowa	1,134	87	41.	S Dakota	81.9	82
42.	W Virginia	1,128	86	42.	New Mexico	81.7	82
43.	Indiana	1,108	85	43.	Colorado	80.6	81
44.	Idaho	1,082	83	44.	Tennessee	79.4	79
45.	Utah	1,075	82	45.	Delaware	79.3	79
46.	Tennessee	1,062	81	46.	Louisiana	78.8	79
47.	Kentucky	1,023	78	47.	Oklahoma	77.1	77
48.	Arkansas	1,009	77	48.	Florida	73.1	73
49.	S Carolina	996	76	49.	N Hampshire	69.1	69
50.	Alabama	977	75	50.	Texas	67.3	67
51.	Mississippi	905	69	51.	Nevada	61.8	62
	United States	\$1,305	100		United States	100.0%	100

Source: Halstead, State Profiles, pp. 32 and 34.

The Board of Regents is faced with major policy decisions as it charts the course of higher education leading into the twenty-first century. It is unlikely the System will obtain the necessary resources to continue all existing programs and services with a high degree of quality. The alternative is to consider constructive adjustments within the System. There are no easy solutions, but there are options which allow reasonable access while still retaining quality. Failure to take action soon will surely result in a University System of inferior value to the state's citizens.

#### Chapter Footnotes

1 "How the States Rank on 7 Scales", The Chronicle of Higher Education, 30 October, 1985, p. 13.

2 Kent Halstead, State Profiles: Financing Public Higher Education 1985-86 (Ninth Edition; Washington, D.C.: Research Associates of Washington, 1986), p. 33.

3 Ibid, p. 32.

## Chapter 4

### BUDGETING FOR HIGHER EDUCATION

Although there is justification for allocating resources to public colleges and universities based on enrollment, mission, and other factors, there is also a clear need to reward institutions that can demonstrate they are doing a good job of educating students. Institutions should be encouraged and rewarded in their efforts to increase the learning of those in their charge. Incentive funding will send a clear signal that policymakers expect and demand proven quality in higher education.<sup>1</sup>

Montana is one of at least twenty-six states using some form of formula budgeting to fund higher education. Some states distribute funding on the basis of full-time equivalent (FTE) student enrollment, while others fund on an incremental or base-plus basis.

Formula budgeting first appeared in the late 1950s and became popular in the 1960s because of the need for states to deal with large enrollment increases. Certainly, formulas are a useful tool during periods of enrollment growth, but they have significant disadvantages during periods of level or declining enrollments, especially when the factors are not adjusted regularly, or if the percentage of funding is less than 100 percent.

The commonly stated advantages of formula budgeting are

- 1) it provides an objective method of identifying the needs of higher education on an equitable basis;
- 2) it reduces political competition among state institutions;
- 3) it provides state legislatures and budget offices a simple and understandable way of handling the financing of state institutions; and
- 4) it enables institutions to project their income on a timely basis.

The most commonly stated disadvantages of formula budgeting are

- 1) it does not recognize quality;
- 2) it has a leveling effect on all institutions;
- 3) it does not address the problems of stable or declining enrollments; and
- 4) it provides no incentives for institutional economy or efficiency.

Budget policy has a significant influence on institutional attitude toward growth. Under formula budgeting there is intensive competition to enroll more students because an institution must grow just to stay even. The only case where this would not be true is when a formula has factors reflecting competitive salaries, the true inflation rate, etc., and is funded at 100 percent. If the state wants constructive change in its higher educational system, the state's financing policy must change first, not institutional attitudes. The policy must shift from financing enrollment to financing excellence.

It is not suggested that formula funding be totally abandoned; there is a need to recognize the cost relationships existing in the mix of programs offered at each campus. This should be considered in establishing a base level of funding for the institutions. Some of the disadvantages of formula budgeting can be eliminated by establishing enrollment ranges where the budget base will remain stable within the range. Adjustments would only be made in the base if enrollment falls out of the established range. The formula driven base must be adjusted each legislative session for increased costs of salaries and for other inflationary increases. With this flexibility built into an institution's budget base, there would be incentive to strengthen programs central to its mission. Much less emphasis would be placed on body-count.



The budgeting process should include provisions for incentive funding to solve immediate pressing problems. These funds would not become part of an institution's base, but would be available on a matching basis for such things as replacing essential instructional equipment, computers, library acquisitions, and other items needed to improve the quality of priority programs.

It is recommended that the Board of Regents request a joint study of funding for higher education involving the budget office, the fiscal analyst, members of the appropriations committee, campus representatives, and representatives from the Commissioner's office and the Board of Regents. The study could be completed between the 1987 and 1989 legislative sessions, with possible adoption in the 1989 session.

The Board is now considering a number of significant changes in the System which could have major impact upon enrollments during this next biennium. The legislature should be asked to maintain the System's funding base in the upcoming biennium so a reasonable transition can be made to the changes adopted by the Board. Unless stability can be assured, change and transition will be very painful to all concerned.

#### Chapter Footnotes

<sup>1</sup> National Governor's Association, Time for Results, The Governors' 1991 Report on Education (Washington, D.C.: National Governor's Association, 1986), p. 162.



## Chapter 5

### ADMISSION STANDARDS

#### General Discussion

The Montana University System has traditionally maintained "open admissions" at all of the institutions for Montana residents who have received a high school diploma or passed the General Educational Development test. By its very nature, "open admissions" allows students with a wide variety of academic preparations and abilities to enter the various units. At a time when all the units are being forced to curtail services, it is perhaps wise to examine whether the Montana University System should consider establishing admission requirements. There are four common reasons for adoption of admission standards:

- 1) control of enrollment;
- 2) enhancement of quality;
- 3) reduction of remediation; and
- 4) improvement of retention.

The latter three are clearly interrelated.

Surveys conducted by the National Association of Secondary School Principals,<sup>1</sup> the Connecticut Board of Higher Education,<sup>2</sup> and the Western Interstate Commission on Higher Education<sup>3</sup> indicate that thirty-eight states now have admission standards in at least some of their public colleges and universities. In almost all cases, the standards apply to four-year colleges and universities and not to community colleges which generally maintain open admissions. Twelve states require only the high school diploma for admission to any of their institutions.

Since 1983, twenty-five states having admission standards raised their requirements. While most of these increases involved additional college preparatory courses, two states increased score requirements to 21, and three additional states raised required high school GPA to 2.5 or 2.75. Several other states have studies of admission standards underway.

One of the most common admission requirements is completion of a college preparatory curriculum. In many cases this requirement must be met in combination with other elements such as GPA, test score, or class rank. A recent research report published by Educational Testing Service indicates that variation exists in admission standards throughout the country.<sup>4</sup> This study groups the prevailing standards into categories (in addition to the college preparatory course requirements):

- 1) Single-Index Minimum. In this model, a single index such as a test score, rank in high school class, or high school GPA is used to determine eligibility.
- 2) Multiple-Index Minimums. Here, two or more indexes are used in combination to determine eligibility. For example, students in the top half of their high school classes who also have test scores above some specified minimum may be considered eligible.
- 3) Either-or Minimums. This model allows for eligibility if a minimum is equalled or surpassed on either of two or more indexes. Students might be eligible for admission, for example, if in the top half of their high school class or if their SAT total score is 700 or above.
- 4) Sliding Scales. This model specified different minimums on different indexes at different levels of high school rank or test performance. An applicant can be eligible at the highest level, for example, if high school rank is in the top fifth. At lower levels of rank, test score minimums are imposed. The sliding scales are usually based on an eligibility index computed by formula, but table minimums are computed for publication in college catalogs.
- 5) Predicted Performance. Unlike the other models, this is based on the past performance of students in specific institutions. Usually, high school GPA (or rank) combined with a test score (or scores) to predict college

freshman GPA. A regression equation is developed from data on past students and is used to predict performance for applicants.

The author goes on to state that "of the five models examined, the predicted-performance model is clearly preferable in that it is the only model of the five that takes institutional differences into account."<sup>5</sup>

Most institutions with high admission standards allow exemptions for offsetting the impact on minority students, students coming from high schools with limited curricula, or for students with special talents and skills. These exemptions may be granted to from 5 to 15 percent of the entering freshman class. In order to admit students under the exemption, a broader student profile is usually completed which is intended to indicate a more thorough review of the students' chances for success at the institution.

When institutions admit large numbers of underprepared students, there is little choice but to commit extensive resources to remediation. The National Center for Educational Statistics indicates that 82 percent of all institutions in the United States offered at least one remedial course in 1983-84. On the average, two remedial courses were offered in each of the three basic skill areas, writing, reading, and mathematics.<sup>6</sup>

In Montana, all institutions have initiated remedial courses to assist underprepared students. This has been necessary because of the state's open admissions policy that permits a large number of students to enroll in the System who have not completed a college preparatory curriculum, and because of the increasing enrollment of older students whose academic skills have decreased since high school. Over 13,500 credit hours were produced in remedial instruction in the System in 1985. Using a conservative cost estimate of \$20.00 per credit, the System is spending approximately \$270,000 on remedial courses.

There are clearly two points of view on the appropriateness of remediation. On one side are those who believe that higher

education should not duplicate high school work -- students that are not prepared for college should not be admitted. On the other side of the issue are those who believe that everyone should have an equal opportunity to benefit from higher education. The latter has been the traditional basis of Montana's open admissions policy.

It is true that, under open admissions, access to the institution is assured. This does not imply equal opportunity for success or even access to many available programs. That open admissions impacts retention is shown by the fact that approximately 45 percent of those students entering as freshmen do not enroll for the sophomore year.<sup>7</sup> Many of those who do not re-enroll have not been successful academically. Just as it can be said that open admissions provides equal opportunity for access, it can also be said that many underprepared students are provided absolute opportunity for failure. The "Recommended College Preparatory Curriculum," recently adopted by the Montana Board of Regents, coupled with the adoption of more stringent graduation requirements by many high schools, will significantly reduce the problem of underprepared students, but it will not be totally eliminated.

Admission standards must be selected with care so students with definite potential are not eliminated. It seems imperative that more than one factor be used and that some time interval be established for compliance. The standards finally adopted must also be monitored carefully because the most important measure of effectiveness of the standards is the rate that entering students seeking degrees are maintained and graduated.

One of the most important elements of admission standards should be the required completion of a college preparatory program. A study completed in 1983 by the Kentucky Council on Higher Education affirms the importance of a college preparatory curriculum to success in college. The study concludes

The kind of high school preparation does make a difference in several important dimensions of academic performance in college. Among all college students of

similar ability levels, those who had completed the requirements of the Pre-College Curriculum performed better in college. They achieved higher grade point averages, earned more credits per semester and for the academic year, had higher ACT test scores, and stayed in college longer.<sup>8</sup>

As indicated earlier, ACT test scores and class rank are commonly used as elements of admission standards. According to American College Testing Services, 5,645 Montana students (53% of seniors) took the ACT test in 1984-85. The composite test scores for all students taking the test are illustrated in Table 5-1.<sup>9</sup>

TABLE 5-1  
ACT Test Scores for Montana  
Graduating Class of 1985

SUBJECT	S C O R E		
	WOMEN	MEN	COMBINED
English	19.0	17.9	18.5
Math	17.3	19.6	18.4
Social Science	17.5	19.3	18.3
Natural Science	21.1	24.0	22.4
COMPOSITE	18.8	20.3	19.5*

Source: American College Testing Services, The High School Profile Report, H.S. Graduating Class of 1985, State Composite for Montana (Iowa City: 1986), pp. 2-4.

\*The national average on the ACT was 18.6.

Class rank alone is probably not a good admission criteria to use in Montana because of the size of the high schools in the state. Out of a total of 169 high schools, 43 have fewer than 50 students. An additional 37 have enrollments between 50 - 99. Class rank would appear to be somewhat meaningless for students coming from those small high schools.

In an attempt to estimate the impact of admission standards on the University System, an arbitrary standard was used to analyze the entering freshman class of Fall 1985. In this case the ACT

and class rank were used because that information was the most readily available for all students. Using the standards of a minimum ACT score of 18 or a ranking in the upper one-half of the high school graduating class, the following table indicates the number of students who would have been excluded from the System.

TABLE 5-2  
Impact of Admission Standards  
on the Freshman Class - Fall 1986\*

INSTITUTION	NUMBER OF ENTERING FRESHMEN	NUMBER WHO WOULD NOT HAVE BEEN ADMITTED	PERCENT WHO WOULD NOT HAVE BEEN ADMITTED
MSU	1,752	390	22%
UM	1,149	222	19
EMC	761	357	47
MCMST	276	66	24
NMC	323	138	43
WMC	152	55	36%

\*Minimum ACT 18, or upper one-half graduating class.

It is recognized that there is inconsistency in using an ACT score of 18 or the upper one-half of the graduating class as parallel criteria. However, the fact remains that a number of students enrolling in the University System have little chance of success without extensive remediation. This is more appropriately the role of the community colleges and state colleges than of the two universities or Montana Tech. With increased emphasis upon college preparation and the initiation of admission standards, the costs of remediation can be reduced.

#### Recommendation

It would be unwise for the Board of Regents to establish high admission standards at all institutions in the System because the state does not have the typical community college structure which



serves as the safety net for access. There continues to be a need to balance accessibility with the need for increasing quality. It is not unreasonable for the Board to consider some of the alternatives to maintaining open admissions throughout the system. The two most obvious alternatives are to

- 1) establish admission requirements at the two universities and Montana Tech, or
- 2) establish admission standards at all institutions.

Under the first alternative, open admissions at Eastern Montana College, Northern Montana College, and Western Montana College would be maintained. For Montana State University, University of Montana, and Montana Tech, the following admission standards could be adopted:

- 1) completion of a college preparatory curriculum with a minimum grade point average of 2.5; or
- 2) minimum ACT test score of 19.
- 3) Students may be exempted from the admission requirements if they can demonstrate ability to do college level work using other criteria. Such exemptions may not exceed 15 percent of the previous year's entering freshman class (FTE). Criteria should include such factors as
  - a) maturity and experience;
  - b) special talents;
  - c) motivation for college-level work; and
  - d) pattern of improving grades in high school.

Under alternative two, the following admission standards are recommended for Eastern Montana College, Northern Montana College, and Western Montana College:

- 1) high school graduation with a minimum GPA of 2.0 or GED equivalency; or

- 2) minimum ACT of 15.
- 3) An exception of 15 percent for the reasons indicated previously under Montana State University, University of Montana, and Montana Tech.

Under either alternative, admission of transfer students at all institutions should require an average 2.0 GPA in all course work attempted at other institutions of higher education. New admission standards should become effective with the entering class of Fall 1988. This parallels the effective date of the recommended college preparatory curriculum.

Another alternative the Board could consider is to shift the full cost of remediation to the students. This is not an uncommon practice throughout the country.

#### Impact

It is not possible to state with any degree of accuracy the number of students who would be excluded from the System if admission standards are adopted. The number would be lower, however, than might be anticipated initially, for several reasons:

- 1) a significantly higher number of high school students are now taking a college preparatory program;
- 2) the time lapse for implementation of the standards will allow students to take corrective action to eliminate deficiencies while in high school;
- 3) a high percentage of the students not admitted would be those most likely to drop out during their freshman year; and
- 4) the 15 percent waiver will still allow admission of students with potential even though the specific requirements are not met.

Even though there would be a drop in total enrollment, it is not unlikely the two universities and Montana Tech would experience an increased enrollment of high ability students. Higher standards tend to attract those with higher academic ability. At the present time, a significant number of those graduating in the upper 20 percent of their high school graduating classes are lost to out-of-state institutions.

Admission standards would reduce the number of students within the System. As stated earlier, it is impossible to estimate the number at this time. Assuming admission standards were adopted at all units as outlined above, and that three percent of the System enrollment is lost, the impact on the System's budget would be \$3,346,584 (779 students x \$4,296 from Table 3-8, second column). Auxiliary services would also be impacted through loss of residence hall revenues and food services, although the impact would vary from campus to campus.

#### Chapter Footnotes

1 Scott D. Thomson, College Admissions (Reston, Va.: National Association of Secondary School Principals, 1983).

2 Persis C. Rickes, Admission Standards: National Trends in Public Higher Education (Hartford: Board of Governors for Higher Education, State of Connecticut, 1983).

3 Karen Fisher and Norman Kaufman, "Admissions Standards in Public Higher Education in the Northwest; Recent Trends and Their Implications." Paper presented to the Pacific Northwest Higher Education Forum on Educational Preparation and Economic Revitalization, Seattle, Washington, November 18-19, 1982.

4 Hunter M. Breland, An Examination of State University and College Admissions Policies (Princeton: Educational Testing Services, 1985), pp. 7-9.

5 Ibid, p.5.

6 U.S., Department of Education, National Center for Educational Statistics, Many College Freshmen Take Remedial Courses, NCES Bulletin 85-211b (Washington D.C.: 1985), p. 1.

7 Calculation made from survival ratios developed by the Enrollment Task Force of the Montana University System.

8 Randall W. Dahl, High School Preparation and Collegiate Performance in Kentucky (Frankfort: Council of Higher Education, State of Kentucky, 1983), p.1.

9 American College Testing Services, The High School Profile Report, H.S. Graduating Class of 1985, State Composite for Montana (Iowa City: 1986), pp. 2-4.

## Chapter 6

### TUITION AND FEE WAIVERS

#### General Discussion

Every higher education governing board must give serious attention to the establishment of tuition rates and mandatory fees. Such fees have a direct bearing upon student access, especially for those students coming from the low-income and middle-income groups of society. Often overlooked is the fact that tuition and mandatory fees represent only about 20 percent of the actual cost of higher education for full-time residential students in Montana. Other costs such as room and board, books, and activity fees place an added financial burden on a large number of students.

The costs of attending college have increased significantly throughout the country since 1981. Between 1981 and 1985, the consumer price index rose a total of 17 percent. Over that same period, the average price tag on a college education increased by 35 percent. Much of this increase was in tuition and fees, which increased by 46 percent, nearly three times the rate of inflation.<sup>1</sup> Tuition within the Montana University System followed national trends. The increases amounted to nearly 53 percent from 1981-82 through 1985-86. Even with those increases, Montana continues to be a relatively low-tuition state. Of the fifty states, Montana ranks forty-first in tuition charges. All of the states used as peers rank below twenty-seventh in tuition rates.<sup>2</sup> High tuition charges are generally found in the East and the industrialized Mid-west. States with lower tuition charges are typically rural and agriculturally oriented.

Large increases in tuition since 1981 are partially a result of the fact that in the late 1970s tuition increases were relatively small, while most segments of the economy, and especially higher education, experienced the impact of double-digit inflation. Institutions have been forced to use

tuition to offset the losses of real income occurring in previous years. Specifically, the reason for rapidly increasing tuition is insufficient revenue from the state general fund. Costs for the institutions have risen because of

- 1) faculty and support staff wage increases;
- 2) a tripling of costs for utilities, books, periodicals, and supplies;
- 3) costs of computerization and replacement of outdated equipment;
- 4) capital investments, handicapped access, and asbestos abatement; and
- 5) tripling of social security costs and increases in fringe benefits.

Table 6-1 illustrates the increases in tuition and compares the rates with peer institutions. The 19.3 percent increase in 1985-86 reflects a substantial increase in mandatory health fees.

TABLE 6-1  
Tuition at MSU and UM

YEAR	T U I T I O N					
	R E S I D E N T			N O N - R E S I D E N T		
	TUITION	% OF INCREASE	% OF PEERS	TUITION	% OF INCREASE	% OF PEERS
1979-80	\$ 600		99.0%	\$1,967		111.0%
1980-81	604	.07%	93.0	1,972	.03%	106.0
1981-82	710	17.50	93.0	2,078	5.40	97.0
1982-83	782	10.10	92.0	2,222	6.90	94.0
1983-84	850	8.70	91.0	2,398	7.90	94.0
1984-85	910	7.10	91.0	2,604	8.60	98.0
1985-86	1,086	19.30	102.1	2,850	9.40	101.3
1986-87	\$1,158	6.60%	101.8%	\$2,976	4.40%	100.3%

Source: Compiled by the Office of the Commissioner of Higher Education.

As indicated earlier, tuition rates today seem to be most reflective of shortfalls in appropriated revenue. From a historical perspective, the rates are set in consideration of several economic factors. One of the most common of these factors is a comparison of rates established in adjoining states, or the use of "peer groups." A review of tuition charges throughout the nation indicates definite similarities within regions such as the northeast, southwest, midwest, and northwest. This undoubtedly is reflective of similar economic conditions which prevail within those regions. Other economic factors include utilization of the consumer price index, changes in per capita income of a state's residents, and the availability of student financial aid.

Several states have adopted goals of setting tuition on the basis of a percentage of the cost of instruction, or on the cost of education. Such policies do maintain a balance between tuition and general fund appropriations. However, unless agreement can be reached with the legislatures responsible for appropriations, the goals cannot be maintained.

A large body of evidence exists which indicates that high tuition and limited financial aid work in opposition to access and equal opportunity. The American Association of State Colleges and Universities has reported on several studies which show that "the percentage of high school graduates going directly on to any college is generally low in states with high tuition."<sup>3</sup> The studies further indicate the amount of available federal and state student assistance is not adequate to meet the needs of students from either lower-income or middle-income families.

The American Council on Education recently completed two studies on "How Low-Income Families Pay For College"<sup>4</sup> and "How Middle-Income Families Pay For College."<sup>5</sup> In those studies, only dependent students were considered. Low income families were identified as those with an adjusted gross income below \$15,000, while middle income families were those with an adjusted gross income below \$35,000. (In 1983, approximately 71 percent of all families earned less than \$35,000; 39 percent earned under \$20,000; and 16 percent earned below \$10,000.) Low income

families are typically eligible for grant assistance for about one-half of college costs. This obviously means the other one-half must come from student and family resources. Due to the fact that low income families have few discretionary financial resources, most of the remaining costs are met through student employment and student and parental loans.

Students from middle income families are qualified for only limited financial aid. These students are usually responsible for between two-thirds and three-fourths of the costs of college. In fact, students from many families with incomes over \$25,000 qualify for no grants under the federal aid programs.

Family resources and student earnings continue to be the major source of support for college students. However, family support is limited because of available savings and discretionary income. Students fund about one-third of the costs with their own savings and income from employment. It is estimated that about 40 percent of all full-time undergraduate students hold jobs during the academic year.<sup>6</sup> The balance of college costs are made up from grants, loans, and scholarships.

A major shift is occurring in the philosophy of federal student aid programs. There continues to be much greater emphasis upon the Guaranteed Student Loan Program (GSLP) for general student assistance, than on the basic grant programs. Table 6-2 illustrates this trend.



TABLE 6-2  
Federal Student Aid Trends

GRANT PROGRAM	PARTICIPATION RATE			AVERAGE AWARD		
	1979-80	1981-82	1982-83	1979-80	1981-82	1983-84
PELL GRANT	66.3%	56.6%	43.9%	\$1,090	\$ 958	\$1,168
SEOG	31.3	30.0	23.1	718	766	819
NDSL	43.0	36.8	28.9	830	948	1,003
CWSP	41.5	45.4	37.8	818	978	1,133
GSLP	23.5%	58.3%	73.6%	\$1,724	\$2,176	\$2,252

Source: Julianne Still Thrift, "Presentation of Findings Student Aid Recipient Data Bank 1983-84", Proceedings of the second annual MASSGP/NCHELP Research Conference, Washington D.C., May 31 - June 1, 1985 (Springfield: Illinois State Scholarship Commission, 1985) p. 186.

As the impact of recent changes in federal student assistance programs is identified, it will be even more clear that the burden of financing higher education is swinging back to the students themselves. In previous generations, parental savings and parental loans provided a larger portion of the funding for their children's education. Today, the GSLP is the primary financial aid source available to many students. This means students taking advantage of the GSLP will graduate with substantial debts which are expected to be paid during a period when these young people will have limited resources because of entry-level salaries, expenses of beginning a family, etc. This may be one reason for a shifting of student interest to high paying careers and away from low paying careers in humanities and social services.

The average debt for student loans is already greater than \$5,000, and more and more students have been borrowing the maximum \$2,500 permitted annually under the GSLP. It appears that beginning this year, the annual borrowing limits will be raised to \$3,000 for freshmen and sophomores, \$4,000 for juniors and seniors, and \$7,500 for graduate students. Although students have demonstrated a strong desire to avoid borrowing more than

necessary for their college education, it is not unlikely the average student debt will approach \$10,000 in the near future. The percentage of students who work part-time during the school year has increased significantly. They also use every means possible to reduce expenses. This includes living at home, sharing rental apartments, sharing books, skipping meals, etc. Reduced participation in campus life, which traditionally has been a valuable part of the college learning experience, is also clearly evident.

If all factors are taken into consideration, it can be concluded that even after adjustments for inflation, costs of a college education have increased while family income and aid per student have not. College has become more difficult for families to afford. It can be further concluded that increases in college costs reduce college attendance rates more among low income students than for those at higher income levels. Even with the availability of need-based financial assistance, low income families have difficulty funding the balance of the costs of education. Minority students are especially impacted by rising costs.

Minority enrollments in college increased dramatically in the post-World War II period to a percentage equaling that of White students by the mid-1970s. Since 1975, declines in minority enrollments have been equally significant. The American Council on Education indicates that college enrollment of Black students as a percentage of the number of Black high school graduates has declined from 32 percent in 1975 to 27.8 percent in 1980. For Hispanics, the decline has been from 35.4 percent in 1975 to 29.9 percent in 1980.<sup>7</sup> It appears that this decline has continued since 1980. Rapid increases in college costs will drive the attendance rates of these minority groups even lower. At the same time, these minority groups continue to become a larger percentage of our total population.

To some extent tuition rates are impacted by the number of fee waivers provided. If not funded from general appropriations, the

costs of such waivers are spread over the balance of the student population. In some cases fee waivers actually reduce the amount of federal financial aid for which a student might otherwise qualify. Table 6-3 illustrates the various fee waivers provided by the University System.<sup>8</sup> The \$2,726,638 provided by fee waivers is equal to 12 percent of the amount collected in tuition and fees in 1985-86.

In 1981, the Commissioner of Higher Education appointed a task force to study and report on the issue of fee waivers. Apparently no action was taken on this report. However, many of the recommendations appear to have been valid then and appear more valid today. Some of the fee waivers are clearly discriminatory. Others are uncontrollable because they cannot be limited to Montana residents. For example, Montana statutes contain broad provisions directing that veterans "shall have free fees and tuition in any of the units of the Montana University System"<sup>9</sup> if the veteran has met four conditions:

- 1) he was honorably discharged;
- 2) he served in a war;
- 3) he has exhausted his federal veterans' educational benefits; and
- 4) he was a resident of Montana when he entered the service.

The Board of Regents has adopted a fee waiver policy that in large part parallels the statutes. Because of a recent United States Supreme Court decision (New York v. Soto-Lopez<sup>10</sup>) the use of veterans' fee waivers is likely to expand beyond acceptable limits. In Soto-Lopez the Court struck down a limitation in New York State's veterans' employment preference act. The New York statute restricted the veterans' preference to veterans who had been residents of the state when they entered the service. The Court said that this provision was unconstitutional because it restricted veterans' right of free interstate migration (also called the right to travel). The logic of the Court in reaching

its decision would seem to apply with equal force to the identical residency requirement in the state's fee waiver provisions. This means that any veteran, from any state, can now come to Montana and immediately lay claim to a waiver of university fees and tuition (provided, of course, he meets the other, presumably still valid, requirements). Changing the Regents' policy on fee waivers is only a necessary first step in repairing this breach in the revenue dike. An amendment of Regents' policy without a parallel change of statute is an invitation for a lawsuit.

TABLE 6-3

**MONTANA UNIVERSITY SYSTEM  
COMPARATIVE SUMMARY OF SCHOLARSHIPS AND FELLOWSHIPS BY CATEGORY  
FISCAL YEAR 1985-86**

Category	FISCAL YEAR 1984-85			FISCAL YEAR 1985-86		
	<u>FTE Waivers</u>	<u>Dollar Amount</u>	<u>Percent</u>	<u>FTE Waivers</u>	<u>Dollar Amount</u>	<u>Percent</u>
In-State 6%	420.28	\$ 245,949	9.7%	330.53	\$ 229,223	8.4%
Out-of-State:						
Athletic						
In-State Portion	77.45	45,311	1.8%	74.21	51,431	1.9%
Out-of-State Portion	283.21	438,187	17.3%	276.04	445,210	16.3%
Graduate						
In-State Portion	14.64	8,566	0.3%	13.00	9,009	0.3%
Out-of-State Portion	208.69	335,013	13.2%	210.22	352,213	12.9%
Undergraduate						
In-State Portion	17.00	9,945	0.4%	10.00	6,930	0.3%
Out-of-State Portion	67.89	99,542	3.9%	86.50	135,902	5.0%
WICHE						
In-State Portion	0.00	0	0.0%	0.00	0	0.0%
Out-of-State Portion	21.71	35,160	1.4%	18.00	137,871	5.1%
Indian Students	417.89	244,378	9.7%	459.59	220,461	8.1%
Veterans	139.69	81,721	3.2%	130.53	81,032	3.0%
War Orphans	7.00	4,359	0.2%	5.00	3,664	0.1%
Prisoners of War	0.00	0	0.0%	0.00	0	0.0%
Senior Citizens	19.46	11,767	0.5%	23.59	16,211	0.6%
Custodial Students	1.00	585	0.0%	2.00	1,386	0.1%
Community Colleges	9.00	5,154	0.2%	13.00	9,019	0.3%
Faculty and Staff	121.43	70,802	2.8%	111.86	77,628	2.8%
Athletic In-State	491.10	287,554	11.4%	442.39	306,702	11.2%
High School Honor	468.08	273,746	10.8%	422.66	292,600	10.7%
National Merit	27.00	15,890	0.6%	15.00	10,372	0.4%
Graduate Students (In-State)	544.31	318,007	12.6%	490.29	339,774	12.5%
Other	0.00	0	0.0%	0.00	0	0.0%
<b>TOTAL WAIVERS</b>	<b><u>3,356.83</u></b>	<b><u>\$2,531,636</u></b>	<b><u>100.0%</u></b>	<b><u>3,134.41</u></b>	<b><u>\$2,726,638</u></b>	<b><u>100.0%</u></b>

Over 50 percent of the graduate students in the System are now granted fee waivers or assistantships. In many cases these are given to students as partial compensation for teaching and research assistantships which are a benefit to the institution and save costs in instruction.

A number of states have graduate tuition rates higher than those for undergraduates. This is in recognition of the fact that graduate education is significantly more expensive than undergraduate instruction. About one-half of the WICHE states have higher graduate tuition rates than undergraduate rates.<sup>11</sup>

#### Recommendation

It is apparent the recent trend of tuition rising at a rate two to three times faster than the rise in inflation cannot continue. There is sufficient evidence in the literature to indicate that the present costs of higher education are already impacting enrollments of students from low income and minority families. Even with the availability of the GSLP, many students are unwilling to assume extensive debt burdens to obtain a degree. Many families are also beginning to question the value of a college degree in terms of the cost/benefit in future employment.

The Montana University System should maintain tuition rates which take into consideration the low per capita income of the citizens of the state. This is a reasonable barometer of the resources available to students for meeting college expenses.

The following fee waivers should be considered for elimination in statute and/or board policy:

- 1) Indian students;
- 2) honorably discharged veterans;
- 3) war orphans;
- 4) dependents of prisoners of war;
- 5) senior citizens;
- 6) custodial students; and
- 7) faculty and staff.

A portion (20-30 percent) of the discretionary fee waivers at each campus can be reserved for minority students. Fee waivers for graduate students should be retained, but guidelines for the award of such fee waivers should be developed by the campuses.

Alternatives the Board may wish to consider with respect to tuition policy include

- 1) continuing to consider multiple factors in the establishment of tuition and fees including peer comparisons, consumer price index, availability of financial assistance, etc.;
- 2) eliminating the flat rate tuition charge for credits between twelve and eighteen hours; and
- 3) establishing a 25 percent higher tuition rate for graduate students compared to the undergraduate rate.

Impact

With the present level of enrollment and credit hour production, each \$1.00 increase in tuition generates approximately \$831,250 (after fee waivers are excluded). The Board could choose to increase the rate of tuition to raise a given amount of revenue. However, the Board should first consider the impact of the alternatives listed above, as shown in Table 6-4.

TABLE 6-4  
Impact of Tuition/Waiver Actions

A C T I O N	I M P A C T
Eliminate the flat rate tuition charge for credits between 12 and 18 hours	\$4,200,000
Eliminate fee waivers previously indicated	400,000
Raise graduate tuition 25 percent higher than undergraduate tuition	110,000

Chapter Footnotes

1 Michael O'Keefe, "College Costs Have They Gone Too High Too Fast?," Change 18 (May/June, 1986) p.6.

2 Ken Halstead, State Profiles: Financing Public Higher Education 1985-86 (Ninth Edition, Washington, D.C.: Research Associates of Washington, 1986) p. 34.

3 American Association of State Colleges and Universities, Low Tuition Fact Book (Washington, D.C.: American Association of State Colleges and Universities, 1983) p. 5.

4 Scott E. Miller and Holly Hexter, How Low-Income Families Pay For College (Washington, D.C.: American Council on Education, 1985).

5 Scott E. Miller and Holly Hexter, How Middle-Income Families Pay For College (Washington, D.C.: American Council on Education, 1985).

6 Frank Newman, Higher Education and the American Resurgence Princeton: The Carnegie Foundation for the Advancement of Teaching, 1985) p. 71.

7 American Council on Education, Minorities in Higher Education (Washington, D.C.: Office of Minority Concern, American Council on Education, 1984) p.10.

8 Montana University System, Operating Budget 1985-86, June 1985, Schedule 4.

9 Montana, Montana Codes Annotated, Sec. 10-2-311.

10 New York v. Sato-Lopez, 106 S.Ct. 2317 (1986).

11 Western Interstate Commission for Higher Education, Tuition and Fees in Public Education in the West 1985 Boulder: Western Interstate Commission for Higher Education, 1986).

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## Chapter 7

### DISCONTINUATION OF SUMMER SESSIONS

#### General Discussion

Historically, the primary focus of summer session offerings was to provide educational services to the K-12 teachers in Montana. Many school districts required or at least encouraged continuing education and/or pursuit of advanced degrees. While this is still the case today, the educational scope of summer sessions has evolved into serving a much broader spectrum of students. More students are now starting college directly upon graduation from high school rather than waiting until Fall quarter. Other students are taking a wide spectrum of core curriculum courses in order to avoid delays in graduation. Remedial courses are also provided in the summer so students can meet requirements for the sequential curriculum courses in the Fall without incurring delays.

In 1985-86, the University System summer session generated 1,732 full-time equivalent students or about 7 percent of the academic year enrollment. These enrollments help the institutions meet some of the fixed costs associated with campus operations. Some examples are principle and interest payments on bonds, overhead costs of dormitory operations, computer fees, and food service operations. If summer sessions were cancelled, the costs that are now being covered in the summer would have to be borne by students during the academic year period. This would mean higher building fees and higher rates for dormitory rentals and food services.

The Montana University System has a multi-million dollar investment in its facilities. From a management point of view it is not a wise decision to allow those facilities to remain unused for one-fourth of the year. By spreading the student load over a longer period, summer sessions reduce the need for facilities, thereby helping to hold down construction costs and allowing

institutions the opportunity to offer courses and field experiences that are only possible during summer months.

Summer session employment is an important factor in the retention of faculty. Although all faculty are not employed each summer, such employment provides an opportunity for supplements to low salaries. In addition, many faculty who are not employed use the summer period to do research. This requires access to library services and computer facilities which would not be available if summer sessions were discontinued. Without these opportunities faculty turnover could be expected to increase.

The largest number of summer students continues to be K-12 teachers who must upgrade their academic expertise and pedagogical skills. For many of those teachers the only opportunity to obtain additional training is in the summer when the public schools are not in session. By offering summer programs, the University System makes its greatest contribution to the public school system. The key to quality in the elementary and secondary schools is a well-trained teaching force. Without that, the preparation of students entering the University System will be seriously lacking.

#### Recommendation

As long as summer sessions attract a sufficient enrollment to continue to offer cost effective instruction, they should be retained.

#### Impact

The income generated for the various revenue projects is significant for the retirement of bonded indebtedness and the maintenance of campus facilities.

## Chapter 8

### EXTENDED AND CONTINUING EDUCATION

#### General Discussion

The mission of continuing education at the units of the Montana University System has been to provide educational opportunities to adults who cannot access the traditional academic programs of the collegiate campus because of geographic or time constraints. The units have delivered educational services to these students by offering credit courses at off-campus locations and tailoring formats and schedules to meet the needs of non-traditional clients.

During the past several years, professional associations in the United States have increased the importance of lifelong learning by requiring continuing education of their members (e.g., lawyers, accountants, pharmacists, engineers, teachers, nurses, and other medical professions). Education is seen as a vehicle for coping with change and a way to gain or upgrade skills, acquire new knowledge, or prepare for a new career. Continuing education administrators have to be innovative in developing educational programs that meet the needs of specific audiences and that respond quickly as these needs change. It is important for the State of Montana and the University System to recognize the growing need for continuing education throughout the entire state. The System should be an educational resource for the state which is accessible to citizens of all ages and circumstances. This educational resource includes all public post-secondary units, colleges, universities, community colleges, and vocational-technical centers. For too long Montana has considered continuing education as an adjunct of the campus with funds generated from student fees and/or sponsors. The continuing education offices are an integral part of the institutions,

similar to the graduate schools, and filling an important educational role. The office of continuing education is designed to facilitate a variety of programs on or off campus with multiple sources of funding.

Providing continuing educational opportunities to distant audiences is a challenge in a large, sparsely populated, rural state the size of Montana. Other rural states have been more aggressive in the use of non-traditional delivery systems to some distant and isolated learners (Alaska, Oregon, and Oklahoma, to name a few). The current economic problems in Montana should not deter the System from planning for and seeking funds to expand educational opportunity and non-traditional delivery methods for Montanans.

Tables 8-1 through 8-3 show the number of continuing education courses offered, headcount enrollment, and student credit hours generated for the System in 1985-86.

TABLE 8-1  
Number of Continuing Education  
Courses Offered 1985-86

TERM	NUMBER OF COURSES					
	UM	MSU	EMC	WMC*	TECH*	NMC
<u>Credit Courses</u>						
Summer	25	34	39	13	0	5
Fall	37	19	28	6	0	7
Winter	30	20	28			5
Spring	71	47	33	16	0	11
Total	163	120	128	35	0	28
<u>Noncredit Courses</u>						
Summer	15	19	0	0	0	0
Fall	20	26	24	8	0	0
Winter	24	24	20			1
Spring	44	29	0	10	0	1
Total	103	98	44	18	0	2

Source: Compiled by the Office of the Commissioner of Higher Education from data supplied by the campuses.

\*WMC and Tech operate on a semester calendar.

TABLE 8-2  
Student Headcount Enrollment in  
Continuing Education Courses Offered 1985-86

TERM	NUMBER OF STUDENTS					
	UM	MSU	EMC	WMC*	TECH*	NMC
<u>Credit Courses</u>						
Summer	306	751	575	0	0	85
Fall	539	297	315	57	0	87
Winter	508	202	376			260
Spring	<u>1,246</u>	<u>1,096</u>	<u>505</u>	<u>263</u>	<u>0</u>	<u>263</u>
Total	<u>2,599</u>	<u>2,346</u>	<u>1,771</u>	<u>320</u>	<u>0</u>	<u>690</u>
<u>Noncredit Courses</u>						
Summer	390	685	0	0	0	0
Fall	683	547	328	0	0	0
Winter	849	510	354			23
Spring	<u>1,550</u>	<u>644</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>13</u>
Total	<u>3,471</u>	<u>2,386</u>	<u>682</u>	<u>0</u>	<u>0</u>	<u>36</u>

Source: Compiled by the Office of the Commissioner of Higher Education from data supplied by the campuses.

\*WMC and Tech operate on a semester calendar.

TABLE 8-3  
Student Credit Hour Generation in  
Continuing Education Courses Offered 1985-86

TERM	NUMBER OF STUDENT CREDIT HOURS					
	UM	MSU	EMC	WMC*	TECH*	NMC
<u>Credit Courses</u>						
Summer	673	2,204	1,508	0	0	207
Fall	1,240	695	808	95	0	157
Winter	1,270	598	910			102
Spring	<u>2,270</u>	<u>2,924</u>	<u>1,266</u>	<u>354</u>	<u>0</u>	<u>490</u>
Total	<u>5,453</u>	<u>6,421</u>	<u>4,492</u>	<u>449</u>	<u>0</u>	<u>956</u>

Source: Compiled by the Office of the Commissioner of Higher Education from data supplied by the campuses.

\*WMC and Tech operate on a semester calendar.

### Recommendation

If the delivery of educational services using the new electronic technologies becomes commonplace, then there has to be a source of funds other than continuing education fees to support program development and acquisition of the necessary equipment. Therefore, the campuses should be allowed to use state dollars to support off-campus programs. The credit hour production would be incorporated into the funding formula.

The Board should provide an organizational structure for greater coordination and cooperation among outreach programs of the University System and the community colleges. Such a structure would eliminate the traditional territorial stance of the campuses and could result in the establishment of a System external degree program.

The Office of the Commissioner of Higher Education in cooperation with the campuses should develop new guidelines for quality control for short courses and workshops.

### Impact

Although a precise estimate of the cost to the general fund or other state funding sources is not available, it is clear that a substantial sum will be needed to acquire the needed technology to provide off-campus delivery of educational services, especially to rural areas of the state. Based on the 1985-86 figures, as shown in Table 8-3 and a state Systemwide support figure of \$3,378 per FYFTE, the cost to the general fund of state support of continuing education would be approximately \$1,350,000 for a year.

## Chapter 9.

### COST/BENEFIT ANALYSIS OF A QUARTER TO SEMESTER CALENDAR SWITCH

#### General Discussion

The choice of an academic calendar at an institution of higher learning has both academic and economic implications. In the discussion that follows, academic considerations will be noted, but the analysis will focus on the financial implications of the academic calendar. However, in the final analysis, the choice of a calendar should be driven by academic considerations and be based on campus consensus.

The principal forms of the academic calendar are

- 1) traditional semester;
- 2) early semester;
- 3) 4-1-4; and
- 4) quarter.<sup>1</sup>

Each calendar has its advantages and disadvantages. The 4-1-4 will not be considered as it lends itself best to a small college setting rather than to a state system. The most popular calendar nationwide at present is the early semester which is already in use at Western Montana College and Montana College of Mineral Science and Technology. The following table shows national calendar usage in 1985:

TABLE 9-1  
Calendar Usage

CALENDAR	PERCENTAGE USING
Traditional Semester	4%
Early Semester	58
4-1-4	8
Quarter	24%

Source: "Popularity of 'Early' Semester Calendar Gains; 71 Colleges Switch This Year", The Chronicle of Higher Education, 13 March, 1985, p. 14.

From the table it seems clear that the early semester approach is the most convenient from the point of view of student transfers.

Four campuses of the System (Northern Montana College (NMC), Eastern Montana College (EMC), Montana State University (MSU), and the University of Montana (UM)) presently use the quarter system. Because fewer registration and grading periods are involved, the operating costs under a semester system are lower than those under a quarter system. There are, however, costs associated with a switch of calendars. Additionally, there are other fiscal matters that must be considered. Some of these matters are relatively easy to evaluate. Others require assumptions that are not easily validated and analysis that is subject to many variables. The focus will be on the cost/benefit analysis of a switch from quarters to semesters.

Such a switch would provide economic benefits by either decreasing expenses or enhancing income.<sup>2</sup> For example,

- 1) a reduction in the number of registration periods and a reduction in catalog size because of fewer course offerings would lower costs; and
- 2) enhanced income would result from acceleration of fee collection, increased retention of students, and increased attendance at early fall sports events.

Similarly, there are factors that will impose a cost because of increased expenses or decreased income,<sup>3</sup> including

- 1) increased expenses due to conversion to a new calendar, increased retention of students, increased need for financial aid, and possible mid-semester mailings; and
- 2) decreased income due to reduced book store sales.



There may also be changes in utility costs due to differentials in energy needs in early September versus June because of the shift in starting and ending dates of the academic year accompanying a calendar change. Additionally, utility costs may be subject to reduction if it is feasible to close a substantial portion of the campus during the period between the fall and spring semesters. Since this period corresponds to cold weather months, there is a possibility of some significant savings. Amounts actually realizable will vary from campus to campus.

The four campuses presently on the quarter system have attempted to provide rough estimates of the initial costs of converting to a semester system and the anticipated benefits to the annual operating budgets.<sup>4</sup> These results are shown in Table 9-2.

TABLE 9-2  
Campus Cost/Benefit Analysis

CAMPUS	INITIAL COST	ANNUAL BENEFIT
NMC	\$30,000	\$ 0
EMC	36,300	21,400
MSU	57,500	39,100
UM	\$40,000	\$28,000

Two significant aspects that are not reflected in Table 9-2 are increased income due to improved student retention<sup>5</sup> and estimates of inter-semester utility savings. Increased student retention may result in added instructional and support costs, but this is difficult to estimate. Even small changes in retention can have substantial impact because of FTE funding by the state and added tuition revenue.<sup>6</sup> This is shown in Table 9-3, along with utility savings estimates for those campuses able to provide such figures.

Table 9-3  
Effects of Increased Student Retention  
and Utility Savings

CAMPUS	ADDED REVENUE DUE TO INCREASED RETENTION*		SAVINGS DUE TO REDUCED UTILITIES
	FORMULA FUNDING	TUITION	
NMC	\$ 25,641	\$ 6,783	
EMC	50,048	16,848	
MSU	161,568	58,716	\$25,000
UM	\$127,920	\$45,220	\$20,000

\*The figures used in the "Added Revenue" portion of the table were arrived at as follows: Using FTE enrollments for spring, winter, and fall quarters of the 1985-86 academic year (AY), an average AY FTE was computed (sum of the quarter FTEs divided by 3). It was then assumed that increased retention would be the equivalent of a 1/2% increase in AY FTE. The increase in AY FTE was then multiplied by the 1985-86 figure for state support per FTE for each unit (to produce the figure under formula funding) and the 1985-86 AY resident tuition (for 12-18 quarter credits) for each unit (to produce the figure under tuition).

As Tables 9-2 and 9-3 indicate, there is a potential for a positive economic impact by converting from the quarter system to the semester system.<sup>7</sup> With this in mind, it is useful to examine some of the academic implications of semesters versus quarters. The principal difference can be summed up as depth of study under the semester system compared to breadth of study with quarters. Because the majority of American colleges utilize some form of semesters, textbooks are generally written with the semester system market in mind. The longer semester may be better suited to courses involving laboratory work and extensive writing assignments, while the quarter system may facilitate placement in off-campus activities such as internships or cooperative education. The early semester more closely corresponds to the public school calendar, thereby making practice teaching assignments coincide with the academic year in the fall. The quarter system offers students the opportunity for more variety by increasing the

number of courses that may be taken. Because instruction time is frequently lost at the beginning and close of an academic term due to administrative needs and other concerns, the semester system (with fewer academic terms) should offer somewhat more instructional time over the course of an academic year.

#### Recommendation

Because preliminary analysis indicates there is an opportunity for significant savings with the semester system, each campus presently on the quarter system should establish a campus-wide committee of administrators, faculty, staff, and students to examine in more detail the economic, administrative, and academic implications of conversion to the semester system and to recommend whether such a conversion should occur. The recommendation as to conversion should be made in the context of a report to the unit President no later than July 1, 1987, following the opportunity for campus-wide input and discussion. The unit President should submit his recommendation along with the report to the Commissioner no later than October 1, 1987.

If conversion to a semester system is recommended, the President's report to the Commissioner should include a proposed transition schedule.

#### Impact

Although there are up-front costs of conversion from quarters to semesters, there should be a positive economic effect on all campuses, with the possible exception of NMC.

## Chapter Footnotes

1 The traditional semester divides the academic year into two roughly equal parts. The first or fall semester begins in late September and ends in late January. The second or spring semester begins in early February and ends in mid June. There is frequently a week's break between semesters. The entire Christmas-New Year's holiday period falls during the first semester. The early semester likewise involves division of the academic year into two terms. However, the first semester begins in late August or early September and finishes prior to Christmas. The second semester commences in early January and concludes in mid May. The 4-1-4 approach involves dividing the academic year into two semesters separated by a one month interim period. The academic year begins in early September and finishes in late May. The quarter approach divides the academic year into three segments. The first quarter begins in mid September and ends prior to the Christmas break. The second quarter begins in early January and ends in late March. Following a short break, the third quarter begins in April and ends in mid June. There will be slight variations from campus to campus in the actual beginning and ending dates for these various approaches. Under these four calendars, the summer session is considered a separate academic term.

2 The factors giving rise to economic benefits can be broken down somewhat for purposes of analysis. The following breakdown is not meant to be all-inclusive:

- a. Reduction in the number of registration periods:
  - Reduction in computer time in scheduling classes and rooms.
  - Reduction in staff hours devoted to registration.
  - Reduction in number of grade report mailings.
  - Reduction in number of peak periods at bookstore.
  - Reduction in number of enrollment reports to be generated.
  - Reduction in number of course schedules to be published.
- b. Acceleration of collection of fees with increased interest earnings.
- c. Increased retention of students with resulting additional income from tuition, fees, and state funding and better dormitory and food service utilization.
- d. Early start of academic year permitting increased attendance at home football games.
- e. Reduction in catalog size because of fewer course offerings.

3 Increased costs, as in the case of benefits, result from several factors. A list of such factors include:

a. Conversion to a new calendar:

Reprinting of all forms and publications that are keyed to the quarter system or academic year.

Reformatting and reprogramming all computer programs that are keyed to the quarter system or academic year.

Time and staff required for systematic evaluation of all course offerings and rewriting course descriptions.

Faculty time to revise course materials and to provide increased advising for students during transition period.

Preparation of a manual to guide all parties during transition.

b. Fewer academic terms:

Reduced book store sales.

Increased costs for part-time faculty due to larger fall load.

Need for increased financial aid deferred fee payments because of higher up-front costs to students.

Need for mid-semester grade reports and additional mailings to students.

4 The estimates for Northern Montana College are based on the following factors identified by campus officials:

With respect to initial cost -  
Conversion costs (\$30,000)

With respect to annual benefits -  
Savings due to fewer registration periods (\$15,000)  
Loss of faculty workload flexibility (\$15,000, this is a cost)

The College also identified a phenomena of spring quarter dropout due to farm responsibilities. If this occurs the distribution of income may vary, but over time there should not be a loss of FTEs.

The estimates for Eastern Montana College are based on the following factors identified by campus officials:

With respect to initial cost -  
Computer program modifications (\$4,800)  
Conversion manual (\$1,500)  
Staff time for conversion (\$30,000)

With respect to annual benefits -  
Savings on registration forms (\$150)  
Savings on staff time due to one less fee payment period  
(\$4,600)  
Savings on grade reports and other reports (\$1,500)  
Savings on bookstore operations (\$5,800)  
Increased interest earnings on fees (\$10,600)  
Savings on catalog (\$1,300)  
Additional utilities (\$2,500, this is a cost)

The estimates for Montana State University are based on the following factors identified by campus officials:

With respect to initial cost -  
Reprogramming costs (\$5,000)  
Staff time for conversion (\$50,000)  
Conversion manual (\$2,500)  
With respect to annual benefits -  
Savings to registrar's office (\$20,500)  
Savings to admission's office (\$6,300)  
Savings to computing center (\$1,000)  
Reduced printing of course schedules (\$3,000)  
Savings to controllers office (\$2,700)

The estimates for the University of Montana are based on the following factors identified by campus officials:

With respect to initial cost -  
Conversion costs (\$40,000)  
With respect to annual benefits -  
Savings to the registrar's office (\$23,000)  
Savings to the controller's office (\$3,000)  
Savings to physical plant operations (\$2,500).

<sup>5</sup> Better student retention occurs for several reasons. For one thing, there is one less registration period during which attrition can occur. Additionally, the greater length of the semester may provide more support for borderline students to bring their grades to passing levels, thereby decreasing academic withdrawals. This is discussed in the "Report of the Academic Calendar Subcommittee to the Committee on the Improvement of Instruction" (1973) prepared at Miami University, Oxford, Ohio.

<sup>6</sup> An interesting study on the effects of quarter to semester calendar change can be found in Daniel Coleman, John Bolte, and Leroy Franklin, "Academic Calendar Change Impact on Enrollment Patterns and Instructional Outcomes", Research in Higher Education 20 (1984): 155. The authors note that a decrease in average student credit load (with resultant FTE implications) and an

increase in percentage of course withdrawals occurred at some institutions following a change to a semester calendar. These factors could have an adverse impact on the economic advantages of a calendar switch and need to be considered in any detailed cost/benefit analysis.

7 This study has not attempted to analyze the economic impact on students of a switch from quarters to semesters. There will be both costs and benefits associated with such a switch from a student's perspective. Any campus contemplating a calendar change should take this into consideration.





## Chapter 10

### SHUTTING DOWN CAMPUSES DURING SHORT PERIODS

#### General Discussion

The chief fiscal officers were requested to identify the ramifications of shutting down campuses for short periods of time as a cost saving measure. The apparent savings or efficiencies that might result from such action usually focus on energy conservation along with some labor savings through reduced need for student services. A closer review of the consequences of temporary shutdown greatly diminishes this alternative as a viable cost saving measure.

The most likely time to initiate a shutdown would be during the Christmas season when energy consumption is high and the students are on break. However, other campus programmatic activities continue during these breaks. The most obvious one is research. There are several types of research projects involving humans, animals, plants, viruses, fungi, etc. that require specific temperature and climatic control: Thus, energy needs are critical. Because most of the buildings are not separately zoned for temperature control, there would be a limit to the actual amount of energy savings. Boiler operation must continue and campus surveillance is imperative during times of severe weather to avoid costly breakdowns or malfunctions.

Complete campus shut-downs are not possible because the campuses have a number of programs that continue to operate even though students are not present. These programs include important services to the state such as the Center for Handicapped Children, day-care centers, public broadcast stations, Agricultural and Forestry Research programs, Cooperative Extension Services, and Bureaus of Business and Engineering Research. In order to function effectively, these activities need a wide array of support activities such as computer centers, purchasing, receiving, publications and graphics, and motor pools.

Campus administrative and support activities have work cycles that cannot easily be broken. Payroll must interface with the state accounting system at specific times if payroll delays are to be avoided. Similarly, state purchasing has acquisition time schedules that must be met if material and supply shortages are to be avoided. Outside agencies such as state and federal auditors, OSHA teams, etc., need access to records and information and cannot be closed out for even short periods of time without disrupting their performance standards. Vendors delivering goods must also have access to the campus or incur costly inconvenience or delay.

Closing the campuses during breaks would eliminate a number of community service functions. The campuses serve a major role as community cultural centers. This requires that concerts, lectures, recitals, and workshops be scheduled at times when the facilities are available and not being used by students. In addition, intercollegiate events require access to facilities for practice during campus breaks and many tournaments are scheduled during those periods.

Campus closure assumes that employee layoffs can be achieved during those short periods of time. Academic calendars, work schedules, vacation policies, and leave without pay policies are imbedded in seventeen separate labor contracts. While such contract constraints are not a reason for avoiding change, they are a considerable obstacle to overcome. More importantly, it is difficult to maintain quality personnel when their positions are cut to less than full time.

All of the campuses presently take every opportunity to reduce utility costs by lowering temperatures and controlling lighting when space is not used. In fact, considerable investments have been made in automatic controls to accomplish this purpose. No real labor cost savings can be anticipated because the campuses use these periods when students are not present to catch-up on work that is not accomplished because of understaffing. Although some additional savings may be possible, the disadvantages to

day-to-day operations appear to offset the advantages, making the benefits of shutting down campuses for short periods of time illusionary at best.

#### Recommendation

While the campuses should continue to minimize utility costs and to explore partial physical plant shutdowns, it is not cost effective to make further inquiry into total shutdowns.

#### Impact

There is no significant financial impact anticipated as a result of the above recommendation.



## Chapter 11

### INTERCOLLEGIATE ATHLETICS

#### General Discussion

Intercollegiate athletic programs derive their support from a variety of sources, including state general funds, student fees, non-student ticket sales, booster club donations, and broadcasting royalties. State general fund support consists of fee waivers for student athletes, and a portion of the campus student services budget. Table 11-1 illustrates the percentage distribution of revenue for intercollegiate athletics in Montana, the Big Sky Conference, and the nation.

TABLE 11-1  
Estimated Sources of Revenue  
Montana Universities vs. National Averages

TYPE OF REVENUE	MONTANA*	BIG SKY	NATIONAL
Ticket Sales	19%	20%	43%
Student Activity Fees	0	15	6
Guarantees & Options	5	6	10
State Government Support	59	35	6
All Other Revenues	17	24	35
	<u>100%</u>	<u>100%</u>	<u>100%</u>

Source: Montana data were obtained from a University System Survey of August, 1986; the Big Sky estimates are from an unpublished survey conducted by the University of Nevada-Reno in 1985, and the national data are from Raiborn<sup>1</sup>. Readers are cautioned that this use of three separate sources severely limits exact comparisons; it merely illustrates some fundamental differences.

\*Average of MSU and UM.

Table 11-1 shows that MSU and UM rely on state support to a far greater extent than the Big Sky Conference or national averages (including major universities) would predict. As might

be expected for smaller schools in low population areas, the Big Sky Conference lags the national average for ticket revenue. These observations are consistent with Raiborn's findings that, for the years between 1978 and 1981, only large "Class A" institutions reported average athletic revenues in excess of average expenses.<sup>2</sup> Other sources have suggested that non-state revenues are concentrated at the few very large universities, particularly following a Supreme Court decision deregulating television coverage of intercollegiate football. The Big Sky Conference was recently cited as particularly suffering from that decision.<sup>3</sup>

A more detailed breakdown of revenue sources for a sample of comparative institutions is given in Table 11-2. Institutions included are Idaho State University (ISU), Northern Arizona University (NAU), the University of Nevada-Reno (UNR), the University of South Dakota (USD), South Dakota State University (SDSU), and the University of New Mexico (UNM).

These sample institutions illustrate several basic differences. The South Dakota campuses play at the NCAA Division II level in a geographically compact conference. Their athletic teams usually travel by bus and they support fewer coaches and scholarships. The University of New Mexico illustrates the budgets of larger campuses located in populated areas.

Table 11-3 shows the distribution of revenue for the units of the System.

TABLE 11-2  
General Sources of Revenue for Intercollegiate Athletics (Sample Campuses)  
University Level -- Men's and Women's Athletics Combined -- Fiscal Year 1985-86

SOURCE OF REVENUE	MSU	UM	ISU	NAU	UNR	USD	SDSU	UNM
State Support								
Unrestricted	\$1,435,451	\$1,212,711	\$ 653,313	\$ 719,700	\$ 852,514	\$ 424,746	\$278,187	\$ 900,625
Fee Waivers	265,413	288,565		180,565				
Other		4,379						100,000**
Subtotal	\$1,700,864	\$1,505,655	\$ 653,313*	\$ 900,265	\$ 852,514	\$ 424,746*	\$278,187*	\$1,000,625
Designated Funds								
Ticket Sales	445,518	\$ 588,828	\$ 328,903	\$ 221,491	\$ 375,000	\$ 122,210	\$126,094	\$1,662,100
Team Guarantees	125,000	155,720	114,609	73,324	61,000	30,396	36,500	608,000
Concessions and Programs	42,000	149,266			70,000	78,735	11,583	176,000
TV Income	5,000	5,000	88,273	37,663	32,500	7,974		438,000
Post Season Tournament	40,000	35,445			35,000			42,100
Student Activity Fees			536,955	680,700	380,000	213,375	356,083	601,500
Other	14,537	165,511***			119,500	4,204		82,000****
Subtotal	\$ 672,055	\$1,099,770	\$1,068,740	\$1,013,178	\$1,073,000	\$ 456,894	\$530,260	\$3,609,700
Auxiliary Enterprises								
Workshops			31,680	5,300				
Miscellaneous Sales and Investments	47,000		4,773	225,500	27,000	43,794	77,935	
Subtotal	\$ 47,000		\$ 36,453	\$ 230,800	\$ 27,000	43,794	\$ 77,935	
Booster Club Support	180,916	215,547	420,388	50,464	625,000	89,356	76,800	275,000
Other Sources			5,384	133,750			17,500	
GRAND TOTAL	\$2,600,835	\$2,820,972	\$2,184,278	\$2,328,457	\$2,577,514	\$1,014,790	\$980,682	\$4,885,325

Source: Survey conducted by the Montana University System, August, 1986. These are estimated at \$100,000 for the South Dakota Campuses.

\*Fieldhouse operations are not part of the state budget.

\*\*Estimate for coaching salaries not included above. Excludes indirect support for physical plant and utilities of about \$525,000.

\*\*\*UM Fieldhouse funds included in designated funds.

\*\*\*\*UNM data are estimated; \$82,000 in other revenue is from parking fees.

TABLE 11-3  
Sources of Funds for Intercollegiate Athletics  
Fiscal Year 1985-86

SOURCE OF FUNDS	MSU	UM	EMC	TECH	NMC	WMC	SYSTEM	SYSTEM %
State Support								
Unrestricted	\$1,435,451	\$1,212,711	\$437,762	\$289,964	\$247,581	\$275,626	\$3,899,095	55%
Fee Waivers	265,413	288,565	64,539	92,534	54,420	48,697	814,168	11
Subtotal	<u>\$1,700,864</u>	<u>\$1,501,276</u>	<u>\$502,301</u>	<u>\$382,498</u>	<u>\$302,001</u>	<u>\$324,323</u>	<u>\$4,713,263</u>	
Restricted		4,379			9,403		13,782	
Designated Funds								
Tickets	445,518	\$ 588,828	\$ 22,598	\$ 16,112	\$ 13,385	\$ 12,768	\$1,099,209	16
Team Guarantees	125,000	155,720	3,500	2,200	400	750	287,570	4
Concessions and Sales	42,000	149,266		1,535	6,000		198,801	2
TV and Radio Income	5,000	5,000					10,000	0
Post Season Tournament	40,000	35,445					75,445	1
Other	14,537	165,511		7,201		627	187,876	3
Subtotal	<u>\$ 672,055</u>	<u>\$1,099,770</u>	<u>\$ 26,098</u>	<u>\$ 27,048</u>	<u>\$ 19,785</u>	<u>\$ 14,145</u>	<u>\$1,858,901</u>	
Auxiliary Enterprises	47,000						47,000	1
Booster Club	<u>180,916</u>	<u>215,547</u>	<u>19,500</u>	<u>25,959</u>	<u>4,000</u>	<u>11,935</u>	<u>457,857</u>	<u>7</u>
TOTAL FUNDING	\$2,600,835	\$2,820,972	\$547,899	\$435,505	\$335,189	\$350,403	\$7,090,803	100%
State as a Percent of Total Funding	65%	53%	92%	88%	90%	92%	66%	

Source: Montana University System Survey, August 1986.



Because state support is a major factor for the Montana schools, changes in general budget support are critical to the System's athletic programs. Table 11-4 shows summary revenue and expenditure trends for the System. While state support for intercollegiate athletics grew over the last three fiscal years, it is expected to decrease for the 1986-87 fiscal year. The decline in general fund support for athletics on some campuses is the result of conscious budget-cutting actions by local administrators.

TABLE 11-4  
Athletic Revenue Trends by Source  
University Systems Totals

	FY 83-84 Actual	FY 84-85 Actual	FY 85-86 Estimated	FY 86-87 Estimated
Unrestricted	\$3,658,656	\$3,780,956	\$3,899,095	\$3,650,310
Fee Waivers	668,017	719,237	814,168	907,852
TOTAL STATE SUPPORT	4,326,673	4,500,193	4,713,263	4,558,162
Restricted	65,362	80,977	13,782	4,000
Designated	1,688,787	1,680,048	1,858,901	1,697,866
Auxiliary	226,731	28,033	47,000	60,000
Booster Clubs	481,837	497,800	457,857	480,464
TOTAL FUNDING	\$6,789,390	\$6,787,051	\$7,090,803	\$6,800,492
State as % of Total	63%	66%	66%	67%

Source: Montana University System survey, August, 1986.

As shown in Table 11-4, fee waivers have steadily increased. This is the result of increased student fee rates rather than an increase in the number of student athletes supported. Booster club support has remained relatively level despite efforts to increase that alternative to state support.

This study sought comparable data from both peer academic campuses and schools which compete in athletic conferences with Montana campuses. Although the NCAA has adopted promising financial reporting standards, there does not yet exist, in the author's opinion, an accessible body of comparative data. For example, the operation of a fieldhouse can be a major expense at one campus, while another campus shows no such cost because its fieldhouse is operated by a separate foundation. Therefore, interviews with campus and conference administrators were used to supplement the statistical data.

### Recommendation

Several options have been suggested concerning intercollegiate athletics, including

- 1) dropping sports;
- 2) decreasing or eliminating state funding;
- 3) moving to lower levels of competition; and
- 4) maintaining the present status.

Each choice involves consideration of various factors.

Dropping Sports - Several campuses have dropped one or two minor sports, but few campuses have the option of dropping any additional sports without losing their NCAA level status. Division levels require a minimum number of fully competitive sports and hence, the dropping of one additional sport could affect all others at the campuses. Approximately \$300,000 could be saved by eliminating football at Western and Montana Tech. Appendix C lists expenditures by sport.

Decreasing or Eliminating State Funding - This may have the effect of eliminating sports that do not generate revenue and

would have a particularly strong impact on women's athletics that, in general, does not generate large gate receipts.

Moving to Lower Levels of Competition - This option has been suggested in Montana and other states, particularly in terms of the university Division I programs. Division I athletic programs strive for regional and national excellence and prominence. Recruitment of student athletes is usually similar in scope. Division I campuses must compete in six major sports. Division II programs are similar, but more regional in scope, and are limited to fewer fee waivers or other athletic financial aid. In practice, Montana universities function at the low end of the Division I financial scale, but have achieved occasional national success. Peer campuses competing at the Division II level include the South Dakota universities.

Dropping to a Division II level would save some financial aid and coaching costs, but would probably not significantly reduce travel costs. Because athletic facilities are usually funded by long-term bonds, debt servicing costs would continue regardless of a change in competition status. The South Dakota athletic budgets are very low largely because the proximity of the conference campuses allows teams to travel inexpensively by bus. While expenses would decline, revenues would also be affected. A less prestigious level of competition might reduce gate receipts, although the largest attendances often are for intrastate rivalries rather than out-of-state visitors. The remaining television revenue would be lost. Thus, a net annual savings of \$200,000 to \$400,000 might be possible, but with a loss of certain side benefits. For example, current network television coverage may aid the state's tourist promotion efforts.

No single campus can realistically change its division status unless some other relatively nearby campuses do likewise. An "orphan" campus would save few costs because travel distances would be increased if it were forced to bypass its neighbors. The

decision then becomes one of which campus would change first and how many other campuses would follow. In terms of the Big Sky Conference for men's athletics, if MSU and UM were to drop to Division II status, probably one other campus would join them with the others remaining at Division I. Some realigned conferences might be possible, but several athletic administrators speculate that it would be unsatisfactory and short-lived. If both the Montana and Idaho Systems were to make a coordinated change, then most of the remaining campuses would follow and an equally good conference might result. Without such a joint effort, the problems involved in dropping from Division I to Division II would cancel the anticipated savings.

Dropping WMC, NMC, and Montana Tech to Division III levels would involve similar considerations. Division III programs place special emphasis on participant rather than spectator sports, and encourage variety, club, and intramural sports. Most importantly, Division III programs require that student athletes receive the same treatment as other students including no special financial aid tied to athletic programs. Since the loss of television revenue is not a factor and since WMC, Montana Tech and NMC constitute a majority of the Frontier Conference teams, this change might be easier. The athletics programs at EMC are unique in that football was dropped a few years ago and the campus belongs to men's and women's conferences which comprise neither other Montana colleges nor other out-of-state campuses usually considered as general peers. The impact of reduced athletic support or a change in division status on EMC is thus difficult to predict at this time.

A list of the current athletic conferences and member institutions is provided in Appendix D.

## Impact

The major findings of this short study are that

- 1) University System athletic programs are heavily dependent on state funding;
- 2) eliminating state athletic funding may have a particularly adverse impact on women's sports;
- 3) athletic programs are already suffering from budget pressures and any further budget reductions may force fundamental changes such as eliminating more sports and losing current division status;
- 4) saving money by dropping to lower levels of competition may be possible, but only through a coordinated effort involving a strong nucleus for a revised conference.

Thus, if the universities were forced to drop to a lower division status without a coordinated plan to form a revised conference, the impact would be one of disruption without much savings. If a joint move with out-of-state campuses could be arranged, then a net savings of \$200,000 to \$400,000 per year seems feasible albeit with the loss of national exposure. The impact of dropping the college campuses to Division III level would be that of major change in the concept of local athletics from that of strong intercollegiate competition, to that of largely intramural programs. Exactly what new form would be acceptable and what savings could be realized are difficult to predict, but the major impact would be the elimination of athletic fee waivers with a probable resulting decline in enrollment.

Chapter Footnotes

<sup>1</sup> Raiborn, Mitchell H., Revenues and Expenses of Intercollegiate Athletic Programs, The National Collegiate Athletic Association, Mission, Kansas, 1982, p. 17.

<sup>2</sup> Ibid., p. 43.

<sup>3</sup> Lancaster, Hal, "Colleges Scrambling to Avoid Loss In a Glutted TV Football Market," Wall Street Journal, September 23, 1986, p. 37.

Part Three

STRUCTURE OF POST-SECONDARY EDUCATION IN MONTANA





## Chapter 12

### PROGRAMMATIC AND STRUCTURAL CHANGES IN THE MONTANA UNIVERSITY SYSTEM

The financial support of higher education in Montana has deteriorated so rapidly that the Board of Regents must consider both programmatic reorganization and structural change within the System, as well as the interrelationship between the System and other institutions of public post-secondary education in the state (i.e., the community colleges and the vocational-technical centers). The existing programs at each campus and the number of institutions within the System were all established to meet perceived needs. Conditions have changed since many of those decisions were made, and the Board now faces the challenge of adjusting the System to the level of support available. Failure to do so will have lasting negative consequences on every element of higher education in Montana.

Several states have developed methods for measuring institutional viability<sup>1</sup> by studying two major criteria, institutional efficiency and institutional effectiveness. Efficiency in higher education is a measure of the use of resources in relation to a given cost-per-unit standard. Effectiveness is a measure of what is accomplished with the resources available. Effectiveness is more difficult to demonstrate because it involves measurement of the attainment of objectives (in this case instructional, research, or service objectives) and the value of the degrees earned. Each of these two criteria is important in determining the feasibility of program consolidation, institutional merger, or closure of campuses.

Size of enrollment is important to the level of institutional efficiency, but it is not the only factor which must be taken into consideration. A study by the Carnegie Commission on Higher Education states "There are economies of scale in higher

education, but their effects are often muted by other influences which tend to result in rising costs with increasing enrollments. The chief of these other influences is a tendency for institutions to add new fields of instruction -- often in relatively expensive fields such as science and engineering -- as they grow in size."<sup>2</sup>

A later study by McLaughlin and others confirms that institutional size is one factor in institutional efficiency.<sup>3</sup> Other important factors are institutional complexity and the degree of specialization in high cost programs. That study concludes, "If a state wants to 'save' money, it can do so by adding new degrees to existing large institutions; it can also do so by adding enrollment at small or less complex institutions -- if the number of curricula and degrees can be held constant. The need to restrict complexity of smaller institutions is especially important for graduate degrees."<sup>4</sup>

It is apparent that a baccalaureate degree-granting institution must have a minimum enrollment to achieve reasonable costs per student. The study by the Carnegie Commission states that "In public comprehensive universities and colleges, weighted educational costs per FTE student tend to drop substantially to about 2,000 FTE students and then level off."<sup>5</sup> The problem of efficiency confronting institutions with small enrollments stems from the fact that a base level of faculty and support services is necessary in order to offer a quality baccalaureate degree. Unless a minimum enrollment is present, an institution cannot utilize faculty at an optimum level, which results in low student-faculty ratios and high per-student costs. The same problem exists with all institutional support services because the costs of these services must be spread over a small number of students.

Inefficiencies within larger institutions may be concealed by relatively low per-student costs for the institution as a whole. Departments that do not have a sufficient number of majors to maintain minimum student-faculty ratios are equally as inefficient

as low enrollment institutions. This problem is of greatest concern at the graduate level where instructional costs are high in relation to undergraduate costs.

The criteria of institutional effectiveness is significant in consideration of change within the System. Measures of effectiveness include such things as the number of degrees produced in relation to the number of entering students, success of graduates in passing exit exams or exams to enter graduate schools, follow-up studies on successful employment, etc. The System presently does not have well-defined measures of effectiveness on a uniform basis. This is a task which must be undertaken in the near future.

A key to an institution's effectiveness is the availability of a sufficient breadth of programs to support the degree levels offered. For example, in order to offer a baccalaureate degree an institution must provide instruction in at least twenty disciplines to provide students with a reasonable breadth of instruction. Although a major can be offered with two faculty members in a discipline, there should be at least three so students are provided depth in the subject, varying points of view, and differing theories within a discipline.

There are no hard and fast criteria on the minimum number of faculty an institution must have because the number required will depend upon the level of institutional comprehensiveness and the type of programs offered, as well as the number of students served. The minimum level of enrollment needed by an institution can best be identified as the point at which its costs-per-student begin to level off (assuming program offerings are held constant). For most institutions, this probably lies somewhere between the minimum criteria of 1,500 students used by Oklahoma,<sup>6</sup> and the level of 2,000 students indicated by the Carnegie Commission.

Tables 12-1 through 12-4 indicate the cost-per-student of the various institutions within the Montana University System. These

tables illustrate all of the factors mentioned previously as elements of institutional efficiency, i.e., enrollment, institutional complexity, and the impact of specialized programs.

TABLE 12-1  
Student Expenditures in the Montana University System  
1983-84

SCHOOL	FYFTE ENROLLMENT	STATE APPROPRIATION	STATE SUPPORT PER FYFTE	TOTAL EXPENDITURES	EXPENDITURES PER FYFTE
MSU	10,789	\$33,176,752	\$3,075	\$ 43,151,826	\$4,000
UM	8,431	26,253,038	3,114	34,093,325	4,044
EMC	3,538	10,374,108	2,932	12,988,000	3,671
TECH	2,090	7,017,361	3,358	9,017,000	4,314
WMC	882	2,870,822	3,255	3,604,511	4,087
NMC	1,745	5,691,450	3,261	6,758,414	3,873
TOTAL	27,475	\$85,383,531	\$3,108	\$109,613,076	\$3,990

Source: Compiled by the Office of the Commissioner of Higher Education from budget records of the Montana University System.

TABLE 12-2  
Student Expenditures in the Montana University System  
1984-85

SCHOOL	FYFTE ENROLLMENT	STATE APPROPRIATION	STATE SUPPORT PER FYFTE	TOTAL EXPENDITURES	EXPENDITURES PER FYFTE
MSU	10,353	\$34,097,964	\$3,293	\$ 44,539,559	\$4,302
UM	8,265	26,708,452	3,232	34,980,952	4,232
EMC	3,468	10,777,854	3,108	13,558,942	3,909
TECH	1,880	7,787,913	4,142	9,795,168	5,210
WMC	880	2,969,721	3,374	3,759,872	4,272
NMC	1,707	6,290,994	3,685	7,437,262	4,357
TOTAL	26,553	\$88,632,898	\$3,338	\$114,071,755	\$4,296

Source: Compiled by the Office of the Commissioner of Higher Education from budget records of the Montana University System.

TABLE 12-3  
Student Expenditures in the Montana University System  
1985-86\*

SCHOOL	FYFTE ENROLLMENT	STATE APPROPRIATION	STATE SUPPORT PER FYFTE	TOTAL EXPENDITURES	EXPENDITURES PER FYFTE
MSU	\$10,097	\$33,984,278	\$3,366	\$ 44,728,408	\$4,430
UM	8,144	26,713,904	3,280	35,951,843	4,414
EMC	3,480	10,764,814	3,093	13,779,827	3,959
TECH	1,659	6,750,789	4,069	8,783,160	5,294
WMC	854	3,206,453	3,755	3,949,554	4,625
NMC	1,693	6,202,678	3,663	7,586,260	4,481
TOTAL	<u>\$25,927</u>	<u>\$87,622,916</u>	<u>\$3,380</u>	<u>\$114,679,052</u>	<u>\$4,423</u>

Source: Compiled by the Office of the Commissioner of Higher Education from budget records of the Montana University System.

\*Estimated.

TABLE 12-4  
Student Expenditures in the Montana University System  
1986-87\*

SCHOOL	FYFTE ENROLLMENT	STATE APPROPRIATION	STATE SUPPORT PER FYFTE	TOTAL EXPENDITURES	EXPENDITURES PER FYFTE
MSU	9,714	\$32,619,491	\$3,358	\$ 44,635,258	\$4,595
UM	8,021	26,082,563	3,252	36,012,295	4,490
EMC	3,402	10,440,635	3,069	13,977,746	4,109
TECH	1,658	6,515,550	3,930	8,757,933	5,282
WMC	861	3,138,724	3,645	4,025,578	4,675
NMC	1,593	6,050,647	3,798	7,701,114	4,834
TOTAL	<u>25,248</u>	<u>\$84,847,610</u>	<u>\$3,360</u>	<u>\$115,109,924</u>	<u>\$4,559</u>

Source: Compiled by the Office of the Commissioner of Higher Education from budget records of the Montana University System.

\*Budgeted.

The impact of low enrollment can be seen in the cost-per-student at Western Montana College compared to the cost at Eastern Montana College. Programmatically, Eastern Montana College and Western Montana College are similar in that both have academic offerings typically considered low cost compared to those in engineering and technology. Yet the cost-per-student at Western was \$666 higher than at Eastern in 1985-86, representing a 16.8 percent differential. This higher cost can be attributed to the lower enrollment at Western, where fixed costs of basic institutional operations are spread over fewer students.

Tables 12-1 through 12-4 also illustrate the costs associated with a specialized high-cost curriculum. Actually the high cost-per-student at Montana Tech can be attributed both to a decreasing enrollment and high cost specialized programs. Tech does not have the advantage of a broad-based curriculum where it is possible to balance enrollments between high and low cost programs. The same problem can be seen in the per-student costs at Northern Montana College, where a significant portion of the institution's enrollment is in technical programs.

The cost-per-student at the two universities reflects the increased complexity of these institutions in terms of the number of programs offered and the availability of graduate degrees. Advanced degrees are between three and four times as costly as those at the undergraduate level. It is especially important that enrollment in all graduate programs be optimized in order to maintain reasonable costs-per-student at that level.

The allocation of financial resources by budget category provides some indication of institutional efficiency. Although to some extent the allocation may represent institutional priorities, the budget breakdown by program reflects the need to provide basic services on a campus regardless of the total enrollment. Table 12-5 illustrates the 1987 budget allocation on a percentage basis for each budget category.

TABLE 12-5  
 Percentage Budget Allocation By Program For  
 Fiscal Year 1987\*

PROGRAM	MSU	UM	EMC	TECH	NMC	WMC
Instruction	54.8%	52.9%	48.4%	48.1%	54.8%	41.8%
Organized Research	1.2	1.5	--	.5	--	--
Public Service	.1	.6	1.6	--	.1	--
Academic Support	13.3	11.4	12.3	7.9	11.1	10.0
Student Services	9.2	8.1	10.9	12.7	9.6	14.4
Institutional Support	7.9	8.6	10.4	12.5	9.3	14.6
Physical Plant	11.3	14.3	14.0	15.3	11.7	17.2
Scholarships and Fellowships	2.2%	2.6%	2.4%	2.4%	3.4%	2.0%

Source: Compiled by the Office of the Commissioner of Higher Education from the 1987 appropriated operating budget for the Montana University System.

\*Not adjusted for legislative mandated reductions or tuition surcharge.

The most important elements of the information in Table 12-5 are the amounts of resources dedicated to instruction and academic support. Obviously Northern Montana College has made a conscious effort to maintain a high level of its budget in these two categories in spite of its enrollment. Both Western and Montana Tech have a higher percentage of their budgets allocated to non-instructional areas.

In the chapters that follow, the issues of program consolidation, institutional merger, and campus closure will be discussed. These are complicated issues, and any decisions which cause change will have impact upon students, faculty, and the communities served by the units of the System. It is essential to proceed with courage and with full understanding that resistance to change will be intense.

Chapter Footnotes

1 Maryland, State Board of Higher Education, Indicators of Campus Viability (Annapolis: Maryland State Board of Higher Education, 1982).

2 The Carnegie Commission on Higher Education, The More Effective Use of Resources (New York: McGraw Hill Book Company, 1972), pp. 37-38.

3 Gerald W. McLaughlin and others, "Size and Efficiency," Research in Higher Education, 12 (No. 1, 1980).

4 Ibid, p.64.

5 Carnegie Commission, More Effective Use of Resources, p.171.

6 Maryland, State Board, Indicators of Campus Viability, p. 40.



## Chapter 13

### PROGRAM CONSOLIDATION

#### General Discussion

The primary goal of the Montana University System, as stated in its Role and Scope, is to provide high quality and diverse educational opportunities and service to the people of Montana as effectively as possible.<sup>1</sup> The University System encompasses the three traditional functions of higher education -- instruction, research, and public service -- and strives for excellence in all three areas. The primary responsibility of all six units is to provide quality undergraduate education.

The scope of the programs offered is broadest at the undergraduate level, and more restricted at the graduate and professional levels. The two universities share authority to award the doctorate, and the four colleges may participate in collaborative doctoral programs with the universities.

The System cannot be expected to offer all possible programs on any individual campus, or through cooperative interstate arrangements. No location in the state can expect to be serviced with all available programs.

Each institution in the System offers the baccalaureate degree in several disciplines, with the two universities providing comprehensive degree programs at the undergraduate and graduate levels. A special mission of the two universities is to provide state, regional, and in some cases, national leadership in the exploration and discovery of new knowledge; to impart such knowledge to students, and where appropriate, to apply research findings to the solution of the state's problems.

The four colleges each have special areas of instruction unique to the particular institution: e.g., Montana College of Mineral Science and Technology has metallurgy; mineral, mining, and petroleum engineering; and occupational safety and health.

Northern Montana College has trade and industrial technical programs, and an associate degree in nursing. Eastern Montana College has unique programs in special education and rehabilitation. Western Montana College primarily prepares teachers, but is also authorized several specialized degree programs in the arts and sciences. All except MCMST have programs leading to undergraduate and graduate degrees in education. Recently the four colleges have established degree programs in business, while three institutions have been granted approval for degree programs in computer science (MSU, UM, and MCMST).

The Ohio Board of Regents commissioned the development of a process model for institutional and state-level review and evaluation of academic programs. The report indicates that review and evaluation of academic programs should be concerned with state needs for higher educational services, with statewide employment needs and opportunities, with program conformance to institutional mission, with geographical access, and with program costs.<sup>2</sup>

The Ohio report goes on to state that "Perhaps no state-level review objective is more troublesome than that of the avoidance of duplication,"<sup>3</sup> and that "Duplication arises when two or more institutions offer the same program in a limited geographical area and to a limited clientele."<sup>4</sup> This is of concern especially when high cost programs with low enrollments are offered by more than one state-supported institution. It is the issue of program duplication that is principally addressed in this segment of the report.

#### Program Duplication

In any assessment of program duplication with the potential outcome of consolidation or program discontinuance, the relative importance of quality vis-a-vis centrality of the discipline must be considered. While centrality more or less lends itself to the Role and Scope statement, program quality is much more difficult to evaluate, and is a matter of institutional priority. The

question that must be asked is, how may program quality be properly evaluated?

According to the Ohio study, the best way of answering this question is to say that if the state authorizes a program, it should subsidize it well enough to meet the standards of an authorized accreditation body. If this standard cannot be met, then the state should be prepared to either drop the program, or provide sufficient rationale for perpetuating a sub-standard one.<sup>5</sup>

Another factor involved in deciding when to drop and when to retain duplicative programs is the criterion of program effectiveness which, according to the Ohio study, is based upon "the cost of the degree in relation to learning accomplished, to the quality of learning achieved, and the placement of degree recipients."<sup>6</sup>

As indicated earlier, it is the purpose of this chapter of the report to describe the extent to which academic degree programs in the units of the Montana University System are duplicative. No attempt is made to determine either quality or program effectiveness.

One set of standards to determine if duplicative programs should be retained, suggested by the Ohio study, is enrollment size for various degree programs. The standards are listed in Table 13-1.

TABLE 13-1  
Minimum Enrollment Standards  
For Degree Programs

ANNUAL TYPE OF DEGREE PROGRAMS	NUMBER OF CURRENT MAJORS	NUMBER OF DEGREES AWARDED
Associate Programs	20	10
Baccalaureate Programs	40	10
Master's Programs	15	5
Doctoral Programs	20	2
First Professional Programs	100	20

Source: Academy for Educational Development, Inc., Developing a Process Model for Institutional and State-level Review and Evaluation of Academic Programs, April 1979, p.88.

The standards in Table 13-1 cannot be viewed as absolutes. They serve as reasonable benchmarks to determine where unnecessary duplication might exist.

Undergraduate Programs

Much has been said about program duplication being a problem in the Montana University System. It is probably fair to say there is a widespread belief that many of the academic degree programs are duplicative, and that selective "pruning" of a number of these would result in great savings to the state. Just how much program duplication is there? First, each of the six units in the Montana University System is authorized the Associate of Arts and Associate of Science degrees, and a number of two-year paraprofessional or technology degrees are authorized at the four colleges. Most of these are found at Northern Montana College (7 of 10 of the degrees authorized). Table 13-2 illustrates the number of associate degrees awarded by the institutions in the University System.

TABLE 13-2  
Associate Degrees Awarded in  
the Montana University System  
1982-83 to 1985-86

INSTITUTION	1982-83	1983-84	1984-85	1985-86
University of Montana	22	19	22	12
Montana Tech	79	77	79	55
Eastern Montana College	26	26	36	31
Western Montana College	33	25	10	14
Northern Montana College	177	197	199	177

Source: Earned Degree Summary, 1982-83 through 1985-86, Montana University System

Only one of the six units, Montana State University, does not grant the two-year associate degree, but has been offering a College of Business Certificate of Proficiency to students who complete a two-year administrative assistant program.

At the bachelor's degree level, disregarding the difference between the Bachelor of Arts and Bachelor of Science degrees, and counting degrees only by discipline, there are approximately 100 different bachelor's degrees offered by the six units of the System. One hundred forty-five different degrees have been authorized the six units, but these include both Bachelor of Arts and/or Bachelor of Science, the Bachelor of Fine Arts, and the Bachelor of Technology degrees. Some institutions offer a degree under a general discipline heading such as Modern Languages, where a specific language is declared an option. Others show the degree by the specific language designation.

In examining the list of 100 bachelor's degrees for evidence of duplication, two areas stand out clearly -- education and business. Five of the units, MCMST being the exception, offer degrees in education, and all six units have programs in business. At least 25 degree programs are duplicated at least once, 15 of these are duplicated three times, and 2 are duplicated four times. Of the latter, the degrees are in chemistry and mathematics, and it could be argued that as long as a college has liberal arts status, it should be authorized degrees in these classical areas of study. There are other areas that should be protected, even though duplication occurs, because the programs contribute so much to the undergraduate basic education. These include art, music, theatre/drama, biological science (botany, zoology), geography/earth science, health and physical education, economics, psychology, sociology, philosophy, political science, speech/communications, and modern languages. What remains from

the list of 25 are computer science (3); television (2); engineering science (2); and fish and wildlife management/wildlife biology (2). Three other special areas that stand out as duplicative are home economics education (2); industrial arts education (3); and business education (5).

Computer science could be considered as part of a liberal arts education and necessary to support programs in business, education, and engineering. Thus it would not be a discipline in which program duplication would be of major concern at the undergraduate level. Certainly there is duplication of programs in television. Both the University of Montana and Montana State University offer the undergraduate degree in this field, although each institution claims its degree is different from the other, and thus unique to the System. This could to be one area where one of the two degree-granting programs might be eliminated, while at the same time concentrating responsibility for operation of a statewide educational television network in the television studios at one of the campuses. Any decisions on the television programs should be delayed until further study is made of the potential for utilizing both programs. Telecommunications is of growing importance to the delivery of academic instruction and continuing education. It is probable both programs can be effectively utilized in the future.

Engineering science is another degree program which on the surface appears to be duplicative between Montana State University and Montana College of Mineral Science and Technology. Of the two programs, the one at MCMST is accredited by ABET, while the program at MSU is not. The MSU program is a low producer of graduates, with no degrees granted in 1986, and only three in each of the two preceding years. MCMST graduated 38 engineering science students in 1986, and two of these received master's degrees. Both programs are considered low cost in reference to

engineering education. The state could probably phase out one of the two programs with little impact on students.

Finally, there is the area of wildlife biology at the University of Montana, and the fish and wildlife management option in the Department of Biological Sciences at Montana State University. These are quite similar degrees at both the bachelor's and master's levels. Both require similar coursework, and lead to similar career development either as refuge managers, park naturalists, and assistant fish and game technicians with the baccalaureate, or as fish and game biologists or wildlife biologists with the master's degrees. It would be hard to argue convincingly these are not duplicative programs, or that more than one program is needed by the state.

Of all examples of program duplication in the System, only the baccalaureate in business is offered by all six institutions. Two of these programs are accredited by the American Assembly of Collegiate Schools of Business (AACSB). These are located at the University of Montana and Montana State University. Both programs have been in existence for many years. As the business major gained in popularity over the past decade, business programs were authorized by the Board of Regents for the four colleges in the System. Currently 18 percent of all undergraduate degrees granted by Montana University System institutions are in business and management. Enrollments in business programs are holding in spite of the drop in overall enrollment. Besides the baccalaureate degree, a Master's in Business Administration is offered by the University of Montana. The number of associate, baccalaureate, and master's degrees awarded in business and management in 1984-85 is shown in Table 13-3, which also shows the percent business degrees constitute of the total degrees awarded by each institution.

Since business and management is such a popular curriculum, and since business graduates apparently have no trouble finding jobs, it would seem this is a curriculum in which duplication could be justified. At Eastern Montana College, for instance, 35.5 percent of all degrees awarded in 1984-85 were baccalaureate's in business and management, and in the Montana University System, 17.78 percent of 5,105 degrees awarded in 1984-85 were in business and management.

The Montana University System units are not the only producers of the baccalaureate degree in business and management in Montana. In 1984-85, Carroll College produced 45 baccalaureate degrees in business and management; the College of Great Falls, 28; and Rocky Mountain College, 34. This means that every four-year college in Montana is awarding the baccalaureate degree in business.

Dropping the business and management curriculum from several colleges in the Montana University System would force enrollments up at the institutions where business programs were retained unless enrollments were controlled through the imposition of higher admissions standards. This is a popular curriculum, and students will seek it out as long as the market demand continues.

Five of the Montana University System units, MCMST excluded, offer the baccalaureate degree in business education, and the two universities offer the master's degree in business education.



TABLE 13-3  
 Degrees Awarded in Business and Management  
 by Montana University System Institutions  
 in 1984-85

INSTITUTION	NUMBER OF BUSINESS DEGREES AWARDED	% OF TOTAL DEGREES AWARDED BY UNIT
University of Montana Baccalaureate	290	--
Master's	66	--
Total	356	23.0%
Montana State University Baccalaureate	241*	11.6
Montana College of Mineral Science and Technology Baccalaureate	33	10.2
Eastern Montana College Baccalaureate	182	36.5
Western Montana College Associate	5	
Baccalaureate	10	8.4
Northern Montana College Associate	44	
Baccalaureate	37	18.0%
Total Degrees in Business (908) is 17.78% of System total of 5105 degrees.		

Source: Earned Degree Summary 1984-85, Montana University System.

\*Includes 8 B.S. Degrees in Business Education

Table 13-4 shows the distribution of Business Education degrees by institution over a three-year period of time. None of these institutions award large numbers of degrees in this area, and several of the programs should probably be eliminated.

TABLE 13-4  
 Degrees Awarded in Business Education,  
 Montana University System Institutions  
 1982-83 to 1984-85

INSTITUTION	1982-83	1983-84	1984-85
University of Montana			
Baccalaureate	13	6	4
Master's	0	3	2
Montana State University*			
Baccalaureate	8	0	0
Master's	6	4	4
Eastern Montana College			
Baccalaureate	6	8	7
Western Montana College			
Baccalaureate	2	8	1
Northern Montana College			
Baccalaureate	4	1	4

Source: Earned Degree Summary, 1982-83 through 1984-85, Montana University System.

\*Business degrees under business and management code.

#### Teacher Education

While a great deal of emphasis has been directed recently toward improving the quality of teacher education, little recognition has been given to the supply and demand issue. A recent report from the Western Interstate Commission for Higher Education by Gosman and Porreca (1986) indicates Western states are not training enough teachers within their own borders to meet demand. Two Western states are exceptions, and both are projected to have a surplus of teachers. "By 1995, only North Dakota and Montana are likely to have a surplus of in-state teacher graduates."<sup>7</sup> Supply estimates in this report were based on 1983 in-state production of college graduates newly prepared to teach. Unfortunately, up-to-date supply and demand data are not available. It is more likely Montana will also experience teacher shortages in some fields, if not generally, because many teachers

traditionally come to Montana from states that are expected to have shortages.

In the Montana University System five of the six units are authorized the baccalaureate and master's degree in education, and two units (MSU and UM) are authorized doctoral programs. Three of the teacher education programs are nationally accredited by NCATE (MSU, UM, EMC). In 1984-85 the five institutions awarded 640 education degrees, or about 18 percent of the total number of degrees awarded in the System. The number of degrees awarded by each unit, and the percentage these constituted of all degrees awarded, are shown in Table 13-5.

Utilizing the two assumptions that, 1) the System is overextended, and 2) fewer fiscal resources will be available from the state, and accepting as accurate the earlier cited supply and demand data (Gosman and Porreca, 1986), one might conclude the Montana University System could eliminate one or more of its smaller teacher training programs, either the one at Western Montana College, or the one at Northern Montana College, without seriously affecting projected demand for trained teachers.

TABLE 13-5  
Distribution of Education Degrees Produced  
by Units of the Montana University System  
in 1984-85

INSTITUTION	NUMBER OF EDUCATION DEGREES AWARDED	TOTAL DEGREES AWARDED*	% OF TOTAL
University of Montana	241	1,543	16
Montana State University	270	2,073	13
Eastern Montana College	195	498	39
Western Montana College	99	118	84
Northern Montana College	105	190	55
Montana Tech	0	321	0
Total	<u>640</u>	<u>4,953</u>	<u>13</u>

Source: Earned Degree Summary, 1984-85, Montana University System.

\*Adjusted to exclude associate degrees, but includes doctorates and master's.

Closing the program at Western Montana College would essentially close the school, since 84 percent of the total graduates were awarded education degrees. Removing teacher education from Northern Montana College would eliminate approximately 55 percent of the baccalaureate and master's degrees annually awarded by that institution, but would only draw down 22 percent of the total student credit hours produced. This action could be countered by the concentration of more of the state's vocational-technical programs at Northern Montana College, and the granting of authority for a career ladder nursing education program (see section on nursing education). As with Western Montana College, those students wishing to become teachers would have to go to one of the remaining units of the System still authorized to offer teacher education.

Thirty-nine percent of Eastern Montana College's graduates became teachers in 1984-85. This is an urban/city college environment, and most likely could absorb more students who would wish to train as teachers. However, a residence housing shortage could constitute a problem in the early stages of reorganization. Aside from its business and management programs, Eastern Montana College is essentially a teacher education college with supporting arts and science programs. There is little it could give up to reorganization. The important unanswered questions are

- 1) how many additional education majors could this institution handle without pumping major fiscal resources into it, especially for supporting arts and science programs, and
- 2) would the quality of teacher preparation be lowered or improved through such reorganization?

Teacher education could be eliminated at either of the two universities. Such action would have the most impact upon teacher supply because many students would select other majors rather than relocate to other campuses. Academically, it is not feasible to remove teacher education from those institutions with the strongest liberal arts support base. This is especially important for secondary education.

Table 13-6 shows the distribution by unit of elementary education degrees awarded in the Montana University System during 1984-85.

It appears more feasible to consider the elimination of elementary education on some of the campuses, rather than termination of entire teacher education programs. This possibility seems most feasible at Northern Montana College or Montana State University. In either case, enrollments in liberal arts support courses would definitely be impacted.

Currently there are three industrial arts programs in the Montana University System (MSU, WMC, and NMC). The number of programs in this area can be reduced without harm to the supply of teachers. The Board should consider the elimination of the existing program at MSU.

Home economics education is offered at both universities. There is little need for two programs. The Board should consider elimination of this program at the University of Montana.

Business education is offered by five institutions. It appears only two or three such programs are needed. Consideration should be given to the elimination of this program at the two universities.

TABLE 13-6  
Elementary Education Degrees Awarded  
1984-85

INSTITUTION	1984-85
University of Montana	
Bachelor's	79
Master's	7
Doctorates	0
Total	<u>86</u>
Montana State University	
Bachelor's	67
Master's	0
Doctorates	0
Total	<u>67</u>
Eastern Montana College	
Bachelor's	78
Master's	0
Total	<u>78</u>
Western Montana College	
Bachelor's	23
Master's	0
Total	<u>23</u>
Northern Montana College	
Bachelor's	22
Master's	16
Total	<u>38</u>

Nursing Education

In the field of nursing education, several levels of preparation exist in the state. These include LPN training offered at the vocational-technical schools, associate degree in nursing programs at Northern Montana College and Miles Community College, the baccalaureate degree program at Carroll College, and the baccalaureate and master's degree programs in nursing at Montana State University. Statewide planning for nursing education in Montana needs to be carefully examined. Dean Anna

Shannon at MSU has drawn attention to the following issues in this regard.<sup>8</sup>

Major changes in health care delivery have pushed to the forefront the need to establish clearer definitions and standards for educational preparation for entry into professional and technical nursing practice. Irrespective of whether or not Montana passes new legislation on this issue in 1987, utilization of nurses across the country is clearly moving toward this outcome.

As we address budget and program reduction in Montana, we need to simultaneously plan a comprehensive program of nursing education for the state which will provide us with the nursing personnel needed in the future. In doing this, we need to keep the needs of the consumer of health care foremost in mind, rather than the needs of more vested interest groups, such as hospitals and other employees, medicine which focuses on illness care and nurse-handmaiden activities, teachers in current vocational, technical, and professional nursing programs, and groups seeking socioeconomic mobility through continued education. Although each group has a legitimate interest in the issue, the focus should remain on providing an educational system which will best prepare nurses who can adapt to changing health care needs for Montana consumers of health care and Montana students of nursing. This educational plan must also be sufficiently coherent so that students may be appropriately advised as to admission to a program meeting their career goals.

Multiple program types have been devised around the country, but none have unanimous approval. At this time, no single plan addresses the emerging need to differentiate technical and professional practice preparation and the appropriateness and/or desirability of articulation between these categories of roles. At this point it seems desirable, and practical in most states, that potential students have the opportunity to select between program types. A generic baccalaureate education provides a logical sequential order for the development of the knowledge and skills of professional nursing, building on a liberal arts and science base. A "two plus" baccalaureate program adds upper division nursing courses, as well as arts and sciences to already acquired practical or technical nursing preparation.

Recommendation: The nursing community of the state needs to be consulted as major planning for nursing education develops. Although cost containment is a factor, it cannot be allowed to be the driving force. A task force drawn from the Montana Consortium of Schools of Nursing, Montana Organization of Nurse Executives, Steering Committee on Entry, LPN educators, community agency nursing administrators, and others knowledgeable about nursing and nursing education could serve to provide this input.

Although additional study is needed, it appears feasible to concentrate and expand the baccalaureate degree program offered by MSU at extended campuses in Billings and Missoula while establishing a four-year career ladder nursing baccalaureate degree out of the associate degree program at NMC, with the clinical upper division courses given in Great Falls and possibly Butte. This would greatly reduce the production of associate degrees in nursing for the state, which is consistent with the trend to have a baccalaureate for entry into the nursing profession.

### Graduate Programs

Table 13-7 shows the number of graduate degrees authorized for the six units of the Montana University System.

TABLE 13-7  
Graduate Degrees Authorized in  
Montana University System Institutions

	UM	MSU	EMC	WMC	NMC	TECH
Master's Degrees	58	43	3	1	1	12
Doctoral Degrees	12*	17	0	0	0	0

Source: Matrix of Authorized programs Within The Montana University System, April 1986.

\*J.D. excluded.



One hundred twenty-four master's degrees are authorized. Included in this count, however, are both the M.A. and M.S. in an individual discipline, as well as similar degrees that are offered at different campuses. Degree duplication occurs in nineteen areas. Five of the campuses (MCMST the exception) offer master's degrees in education, and three campuses offer the Master's Degree in Geology/Earth Science (UM, MSU, MCMST). In addition, the master's degree is offered on two different campuses in each of the following: art, biochemistry, biological science (botany, zoology), chemistry, computer science, education specialist, history, mathematics, microbiology, physics, psychology, public administration, and wildlife biology/fish and wildlife management. According to the Ohio study, master's programs, to be considered productive and cost efficient, should have at least fifteen current majors, and award at least five degrees annually.

Table 13-8 shows the master's degree productivity during 1984-85 of the duplicative areas, by institution, in the System. Several degrees stand out in the category of low productivity, and require some explanation. Montana State University's Master's Degree in Art slumped to a single degree in 1984-85; however, ten Master's Degrees in Art were awarded in 1985-86, and enrollments are up again in 1986. One Master's Degree in History was awarded by each institution in 1984-85; however, the University of Montana awarded six Master's Degrees in History, and MSU, seven, during 1983-84. The Biochemistry Master's Degree has not been awarded to more than two students per year at either MSU or UM since 1982-83. This is an area where degree productivity is low and program costs are high, and the same could be said for the Master's Degree in Microbiology. Degree duplication in psychology may be resolved since Montana State University is planning to place a moratorium on further graduate study in this field. The Master's Degree in Physics at UM might also be questioned since only two degrees have been granted between 1982-83 and 1984-85.

Duplication of Master's Degrees in Education would be reduced by elimination of one or more of the education programs at EMC, WMC, or NMC, or by elimination of degree authority at either one of the universities. Since the Master's Degree in Education is required so frequently for advancement of public school teachers, it is necessary to have more than one program to provide reasonable access to that degree.

Table 13-8  
Master's Degree Duplication  
Montana University System  
1984-85

	NUMBER OF DEGREES AUTHORIZED	NUMBER OF DEGREES AWARDED					
		UM	MSU	TECH	EMC	WMC	NMC
Master's Education	17	89	97	0	53	28	45
Art MA & MFA	4	8	1	0	0	0	0
Biochemistry	2	0	1	0	0	0	0
Biological Science/ Zooology and Botany	2	4	10	0	0	0	0
Chemistry	2	3	3	0	0	0	0
Computer Science	2	7	7	0	0	0	0
Geology/Earth Sciences	3	15	5	3	0	0	0
History	2	1	1	0	0	0	0
Mathematics	2	4	7	0	0	0	0
Microbiology	2	3	2	0	0	0	0
Physics	2	0	6	0	0	0	0
Psychology	2	6	2	0	0	0	0
Public Administration (Higher Ed Center)	2	12	7	0	0	0	0
Wildlife Management/ Fisheries & Wildlife	2	11	5	0	0	0	0

Source: Earned Degree Summary 1984-85, Montana University System.

### Doctoral Degrees

Excluding the Doctor of Jurisprudence Degree offered at the University of Montana, the two universities are authorized twenty-five different doctoral programs, seventeen at MSU, and twelve at the University of Montana.

TABLE 13-9  
 Doctoral Degree Production in the  
 Montana University System

DISCIPLINE	1982-83		1983-84		1984-85		1985-86	
	UM	MSU	UM	MSU	UM	MSU	UM	MSU
Agronomy		4				4		1
Plant Pathology		3						3
Forestry	1				1		3	
Education								
Administration	6		7		7		4	
Adult Higher Ed								
Community Ed		2		2		2		2
Curriculum & Instruction		2		5		3		5
El/Sec Administration		1		1		3		5
Engineering								
Chemical		2		1				2
Civil		1		2				1
Mechanical								1
Biological Sciences		1		2				2
Botany			5				4	
Zoology	4		1		2		4	
Geology	1		1		2			
History*			1		1			
Biochemistry		3						
Chemistry	1	8		5	2	6	1	5
Mathematics	1		3	1				
Physics		2		4		2		2
Psychology	5		11		11		9	
Statistics		1						
Sociology							1	
Microbiology	<u>1</u>	<u>1</u>	<u>1</u>	<u>—</u>	<u>1</u>	<u>4</u>	<u>3</u>	<u>2</u>
Total	20	31	30	23	27	24	29	31

\*Not offered after 1982-83

Table 13-9 shows the numbers of doctoral degrees that were awarded by the two universities from 1982-83 to 1985-86. The most consistently productive programs in terms of degrees granted have been in education at both institutions, in clinical psychology at the University of Montana, and in chemistry at Montana State

University. Each institution awards, on the average, about thirty doctoral degrees per year.

The following programs are duplicative: biological science (MSU); botany, zoology (UM); chemistry; education; mathematics; and microbiology.

According to the Ohio study, the enrollment size for doctoral programs should average about twenty majors, and award two degrees per year. It is clear from the data shown in Table 13-9 that this standard of production is not being achieved by over one-half of the degree programs in the Montana University System. Doctoral programs are generally considered to be high cost, and where productivity is low, one may conclude program inefficiency exists. Four duplicated doctoral programs may fit into such a category. These include the biological sciences doctorate at MSU, the chemistry doctorate at UM, the mathematics programs at both universities, and possibly both microbiology programs, although before any definite conclusions should be drawn from these data an in-depth evaluation would have to be made about the quality of each program. Such an evaluation would require examination of grants and contracts awarded, the award of prestige grants or other honors to faculty and graduate students, the success of graduates, and the publication record and/or creative scholarship achieved by the faculty. On the surface, however, it would appear the chemistry doctoral program should be focused at one university, mathematics at another, and possibly only one department of microbiology should be authorized for the System. Savings might also occur if one of the doctoral programs in elementary education were dropped. In any event, both institutions need to award a minimum of thirty doctoral degrees annually, since that number is usually considered the threshold for research university status. This is particularly important in reference to the attraction of grants and contracts, and the development of new information so essential for the economic growth and development of the state.

### Other Program Considerations

Three important possibilities for cost reduction not covered in the previous discussions of duplication are elimination of low production majors, elimination of unneeded options within majors, and the possibility of providing access to some existing programs on a regional basis.

Each of the institutions has majors which graduate few students each year and unnecessarily drain resources from an institution and the System. It is appropriate for the Board to request rejustification for degree programs not meeting the minimum enrollment standards illustrated in Table 13-1.

Some of the institutions have created a number of options within a major, and in some cases these are appropriate. In many cases, however, the options are unnecessary because they add little academic benefit to the student. It is also appropriate to require rejustification of the various options within majors.

Two existing programs -- physical therapy and pharmacy -- should be reviewed for the possibility of utilizing the WICHE Compact to provide student access. Physical therapy is a popular program in which there would be no difficulty in increasing enrollment. It is apparent, however, that in the very near future a master's degree program will be required for accreditation, and possibly for entry into the profession. This will require a significant increase in capital outlay for the program.

Montana and several surrounding states have small, underfunded programs in pharmacy. It appears it would be advantageous to consider joint efforts between states to strengthen both the funding and enrollment base. The program at the University of Montana has just been visited by the accreditation review team. Results of that review will not be immediately known. Should major problems exist because of the level of funding presently provided, some form of regionalization should be pursued.

Architecture may be another program which would lend itself to regionalization because of the technological changes occurring in the field. Additional review is needed to determine the feasibility of pursuing this possibility.

### Recommendation

By its very nature, higher education requires duplication of courses and programs which contribute to the common body of knowledge expected within a degree. Duplication, then, is only of concern as an institution moves beyond the common core to areas of specialization. This is appropriately controlled by clear role and scope assignments which define the parameters of specialization, and the degree levels at which those specializations are to be offered.

The most commonly duplicated programs in the Montana University System are teacher education and business. Both are relatively low-cost programs and are significant to the enrollment base of the institutions where they are offered. Should the Board choose to eliminate a program in teacher education at one of the colleges, it would be essential to authorize programs which could potentially offset the loss of enrollment. This would also be true if business were removed from Montana Tech. Failure to do so would dramatically increase costs on a per-student basis.

Elimination of duplicated programs at the graduate level has significantly less impact on student enrollment. In some cases, however, program elimination could impact an institution's ability to attract grants or to contribute to the state's economic development through applied research.

The following alternatives for the elimination of duplicative programs could be considered by the Board:

- 1) Elementary Education at NMC and MSU;
- 2) All Teacher Education at NMC;
- 3) Graduate Programs in Education at WMC, NMC, and EMC;
- 4) Business Education at UM and MSU;
- 5) Industrial Arts at MSU;
- 6) Home Economics at UM;
- 7) Business and Management at WMC and Montana Tech;
- 8) Fish and Wildlife Management at MSU, baccalaureate and master's;
- 9) Engineering Science at MSU;
- 10) Computer Science, master's at UM;
- 11) MFA at MSU;
- 12) Biological Sciences, doctorate at MSU;
- 13) Chemistry, doctorate at UM;
- 14) Mathematics, doctorate at UM; and
- 15) Microbiology, doctorate at UM.

#### Impact

There has not been sufficient time for identification of the potential cost-savings from elimination of academic programs. This will require further information from the campuses regarding staffing in the various programs, operations budget commitments, and the level of outside support received. Once the Board decides which program eliminations it wishes to pursue, this information can be obtained.

Chapter Footnotes

1 Montana University System, Role and Scope, June 25, 1979, p. 34.

2 Academy for Educational Development, Inc., Developing a Process Model for Institutional and State-Level Review and Evaluation of Academic Programs (Washington: for the Ohio Board of Regents; Academy for Educational Development, Inc., 1979) p. iv

3 Ibid., p. 10.

4 Ibid., p. 10

5 Ibid., pp. 110-111.

6 Ibid., p. 101.

7 Erica J. Gosman and Richard F. Porreca, Classrooms Without Teachers? Supply and Demand in the West (Boulder: Western Interstate Commission for Higher Education, 1986) pp. 15-16.

8 Anna Shannan, Personal Communication on Needs for Nursing Education Planning in Montana (Montana State University, Bozeman, Montana, 1986).



## Chapter 14

### INSTITUTIONAL MERGER

#### General Discussion

A recent national survey by David T. Kelley for the Texas College and University System "leads to the simple conclusion that much is said and little is done in the matter of closing or merging institutions of higher education."<sup>1</sup> Another study by Gail S. Chambers states, "The record shows that college merger is always difficult, even where it succeeds in negotiation and gets through the early years with good fortune. Short of closure -- whether an institution be public or private -- the merger experience will be as tough as it gets."<sup>2</sup>

The literature indicates that many institutions have considered merger and have abandoned such plans because they were not feasible politically; serious problems arose when one institution attempted to dominate the other partner; or there was a lack of vision for the creation of a new multi-campus institution.

Merger has been most common among private institutions of higher education where two institutions have operated in the same metropolitan area or have served the same geographical region with campuses less than twenty miles apart. The driving force behind those mergers was typically the prevailing financial conditions that were brought about by low enrollments, lack of community support, or inability to raise needed money from external resources.

Successful institutional mergers have taken a variety of forms. The three most common formats are

- 1) consolidation, where two institutions merge into one with a new identity;
- 2) acquisition, where one institution is dissolved, and the other acquires the assets and obligations of the dissolved institution; and

- 3) administrative merger, where one or more campuses are made branches of a parent institution.

The option of consolidation is not feasible for the Montana University System because this option implies the total integration of all institutional operations, including academic programs and faculty. This is only feasible if the merged units are in close geographic proximity, and the two campuses can operate as one. Although it is not impossible to consolidate in this manner, it is impractical because the costs of integration at the departmental levels necessary for success would far outweigh any potential economies.

The acquisition model of merger is feasible in theory. That model, however, is nothing more than closure of one institution with the transfer of assets and liabilities to another. Closure is discussed in other chapters of this report. The System already owns the various campuses, so it is unnecessary to pursue merger for the purpose of transferring assets and liabilities. This leaves the concept of administrative merger to be examined.

Merger must be viewed in light of its potential to improve educational services and program quality, as well as in the context of reducing costs. Consideration should be given to the possibilities of consolidation of programs to increase the critical mass of students necessary for efficiency, elimination of unnecessarily duplicated programs so resources can be reinvested in high priority areas, and the identification of potential administrative efficiencies.

If one accepts the above as legitimate benefits that could result from merger, then it is necessary to judge if those same advantages could be achieved without merger. The answer is yes for the Montana University System, with the exception of administrative efficiency. In essence, the entire University System is governed by one Board that has the authority to

accomplish most of the benefits of merger without further merging of institutions. As stated previously, administrative efficiency is a problem of institutional size; basic support services must be provided regardless of enrollment. It is the element of administrative cost reduction that needs further consideration in determining the feasibility of institutional merger. The discussion that follows encompasses the model of administrative merger, which is the most feasible to pursue in light of the dispersed geographic locations of the various campuses. Each campus would maintain separately identifiable faculty, student body, and academic programs. Each campus would also maintain its own accreditation status.

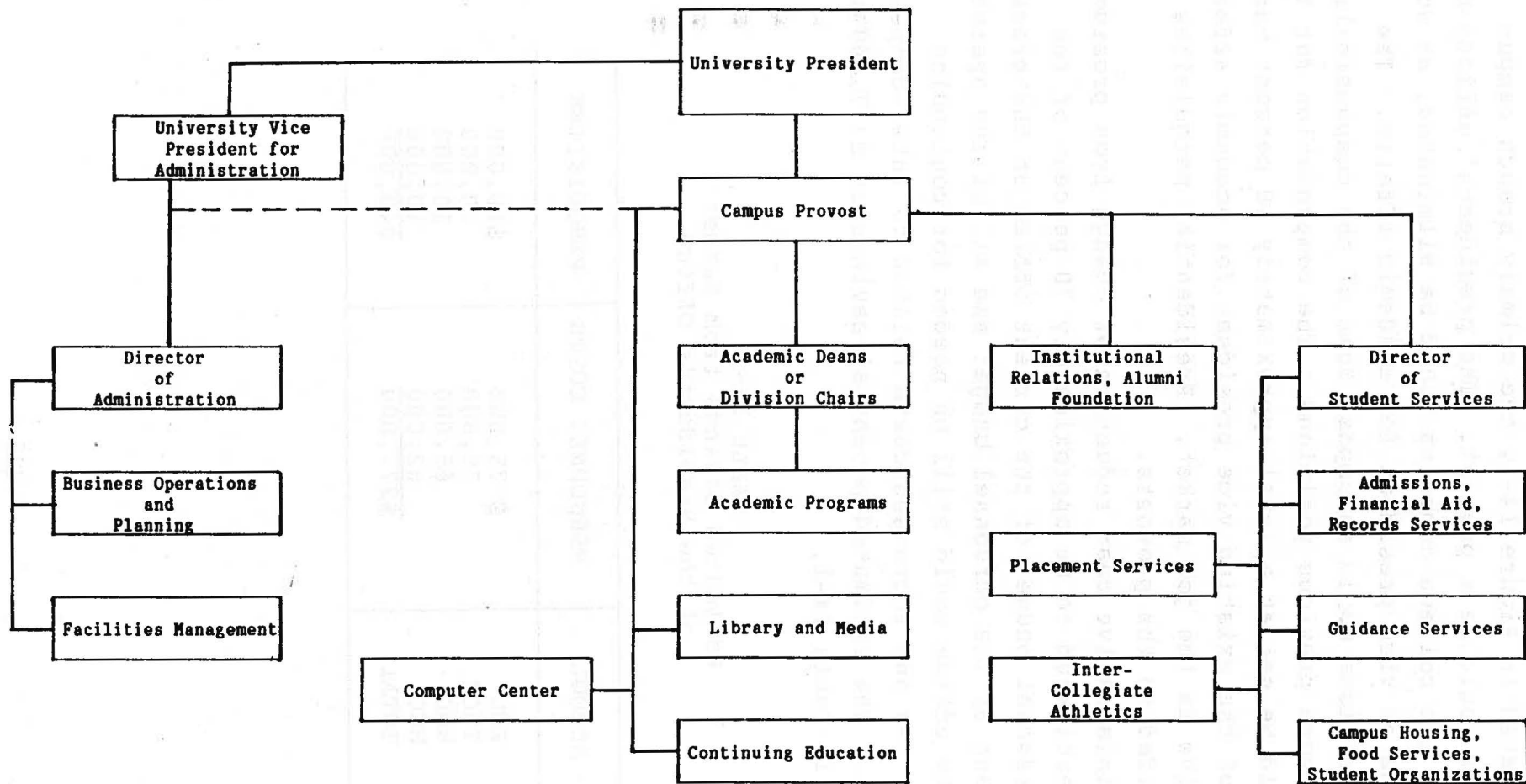
Commonalities within the existing role and scope assignments of the units of the University System have led to consideration of merger. Montana State University, Montana Tech, and Northern Montana College all have significant roles in technology. The University of Montana, Eastern Montana College, and Western Montana College have a significant emphasis in teacher education and the liberal arts. Although it is true that Montana State and Northern also have teacher education, and overlapping programs such as business exist in other institutions, the common thread of technology and the common thread of liberal arts/teacher education are sufficiently substantive to pursue as a basis of merger. The University System would then operate with two primary administrative units: Montana State University and the University of Montana.

The key elements of a successful merger are the establishment of clear lines of authority, and the acceptance by those in authority of the equal importance of programs at all locations. It is imperative the branch campuses not be treated as step-children by main campus operations. Unless such a commitment is made by the Board, the Commissioner, and the university presidents, merger could be nothing more than an additional troublesome layer of bureaucracy.

Under the merger outlined, the role of the university presidents would be expanded to encompass responsibility for three units. The chief fiscal officers of the universities would also experience expanded responsibilities. The major change in administrative structure would occur on the branch campuses. Obviously, the branch campuses could not operate on a completely autonomous basis and still be part of the university. It would be essential to merge the business and financial elements of all of the branches under the control of the president. Even so, because of geographic separation, the campuses must still maintain a sense of community and have access to a responsive campus administration to carry out day-to-day operations. Although the specific responsibilities of administration must ultimately be assigned by the presidents, the conceptual administrative organization in Figure 14-1 appears reasonable and appropriate for branch campus administration.

Assuming the suggested organizational structure is adopted, there may be efficiencies or cost-avoidance in the areas of central administration, business and financial operations, institutional research and planning, university relations, admissions, student loan servicing, publications, physical plant administrative functions, computer operations, and library services.

As one reviews the following discussion on potential efficiencies and cost-avoidance, it must be clearly recognized that because of the budget reductions experienced for FY 1987, savings are limited. All of the campuses reduced personnel in support services and are now understaffed. One possible benefit of merger that must be recognized is that it may allow retention of basic services without future restaffing in the impacted areas.



Branch Campus Administrative Chart

Figure 14-1

As indicated in Figure 14-1, the primary branch campus administrator would be a provost. The presidents' offices as they now exist on the college campuses would be eliminated, as would the positions of vice president for academic affairs. The provosts' positions would encompass some of the responsibilities of each of those previous positions. The compensation for the provost could be set at a level approximately 10 percent more than the salary of the existing vice president for academic affairs and be competitive in the job market. Presidential perquisites would not be provided to the provosts.

The administrative cost reduction of change from president to provost is estimated to be approximately 70 percent of the existing personnel budget of the current office of the president. Thirty percent of the personnel budget and all of the operations budget of the office would still be needed for continuing responsibilities and increased costs related to inter-campus coordination. The estimated potential savings of \$317,000 is illustrated in Table 14-1.

TABLE 14-1  
Estimated Savings from Merger  
of the President's Office

SCHOOL	PERSONNEL COSTS	PERQUISITES
EMC	\$ 75,000	\$10,000
TECH	75,000	10,000
NMC	65,000	10,000
WMC	62,000	10,000
TOTAL	<u>\$277,000</u>	<u>\$40,000</u>

As indicated in the organizational chart, business operations and financial control of the branch campuses are retained by the university president through the reporting relationship of the university vice president for administration. The primary branch campus financial administrative officer is the director of administration, which is intended to be a position comparable to the comptroller now existing at the university. Table 14-2 indicates the staffing of various business and financial service functions for 1985-86. Thirteen positions were cut from these areas due to the FY 1987 budget reductions.

Consolidation of such functions as accounting, payroll, contract and grant administration, internal audit, personnel, and purchasing does offer possibilities for savings and improved services. It should not be expected that more than eight positions could be eliminated on the branch campuses in these areas. Assuming an average salary of \$20,000 (salary plus benefits) for those positions, potential savings would not exceed \$160,000. However, considerable expertise could be made available to the branch campus in institutional research and planning by consolidated operations, and this has potential for reducing costs on a longer term basis.

Table 14-3 indicates the staffing of various support service categories. As one analyzes the functions of these areas in relation to staffing, and with the knowledge that 27 positions were cut from these functions for FY 1987, it is apparent the potential savings to be realized through merger are not extensive. The two areas where consolidation could result in monetary savings are admissions and public information. If each merged university operated under one director of admissions, it is estimated six positions could be eliminated for an estimated savings of \$120,000. Public information could also be consolidated, eliminating two positions, and saving an additional \$40,000. There may be savings in the registrar's office, but because the functions and assignments of that office vary widely from campus to campus, an estimate can not be made.

TABLE 14-2  
FTE Staffing for  
Business and Financial Services  
1985-86

SERVICE	FTE STAFFING					
	MSU	UM	EMC	TECH	NMC	WMC
Chief Business Office	6.00	2.09	2.44	1.82	1.00	1.40
Budget & Inst. Research	4.03	5.04	1.00	--	--	--
Accounting	17.87	23.94	11.94	6.31	7.82	3.25
Payroll	3.50	2.50	2.10	1.45	1.00	.60
Contract & Grant Administration	6.00	7.54	--	1.69	--	.10
Internal Audit	2.00	2.27	--	--	--	--
Personnel & Labor Relations	13.04	7.95	2.26	1.00	--	.20
Purchasing	4.07	4.82	2.00	1.00	--	1.10
Material Management	<u>1.05</u>	<u>1.08</u>	<u>--</u>	<u>1.72</u>	<u>.50</u>	<u>.46</u>
TOTAL	57.56*	57.23**	21.74	14.99	10.32	7.11

\*12.08 FTE positions included in this total are recharged to other agencies.

\*\*13.33 FTE positions included in this total are recharged to other agencies.

Savings cannot be expected in libraries, and little savings can be expected in the computer centers because of present inadequate funding. There are, however, excellent possibilities of avoiding duplicated costs in the future, because of the increased potential of sharing software and coordinating purchases of various items for the library collections.



TABLE 14-3  
FTE Support Services Staffing  
1985-86

SERVICE	FTE STAFFING					
	MSU	UM	EMC	TECH	NMC	WMC
Libraries	64.68	55.28	19.98	8.26	11.50	3.51
Placement	5.94	4.51	3.17	2.47	1.60	1.00
Financial Aid	14.44	13.94	5.59	3.23	2.75	1.42
Loan Records and Collections	.75	3.00	--	--	1.00	.20
Admissions	10.80	12.09	4.26	6.24	5.05	1.52
Registrar	22.12	13.24	9.02	4.99	4.80	3.54
Development Office	--	--	--	1.72	2.00	1.52
Public Information	9.82	5.47	3.14	1.69	1.12	1.00
Alumni	7.25	5.20	--	.73	.75	1.02
Computer Center	<u>35.87</u>	<u>17.90</u>	<u>13.00</u>	<u>8.99</u>	<u>6.50</u>	<u>1.00</u>
TOTAL	171.67	130.63	58.16	38.32	37.07	15.73

Expenditures for physical plant operations are inadequate for today's needs. Therefore, no savings are projected. Consolidation of administration and planning would, however, offer excellent potential for improved facilities planning and resource management. This would be possible by sharing the expertise existing on the various campuses to improve space utilization, conservation, planning for renovation and new facilities, and maximizing the talents of specialized personnel.

No savings can be expected from student services such as guidance and counseling because merger does not anticipate reductions in the number of students on any of the campuses. Should the number of students be reduced, then proportional savings are possible if existing services are above a minimum base for a campus.

As stated previously, academic program elimination or consolidation is not dependent upon merger. The potential efficiencies from elimination or consolidation of programs are discussed in another section of this report.

### Recommendation

The current level of funding and staffing of basic support services in the Montana University System limits the amount of dollar savings that can be achieved by institutional administrative merger. This in itself does not suggest totally abandoning the idea of merger. It does, however, indicate that the possibility of merger should be considered only for those institutions which have high administrative costs in relation to enrollment and where there are problems with the viability of an institution's role and scope assignment. This latter point is important in avoiding creation of additional multi-purpose institutions in the System.

Eastern now has attained the size where it is cost effective. This can be demonstrated by its present per student cost. Even though the small potential savings of merger may appear attractive in difficult economic times, in a growing community such as Billings there will be constant local political pressure to subvert distant administration for the benefit of the local campus. As "good economic times" return, it is relatively easy to succumb to the pressure to recreate a free-standing institution.

Northern can play an increasingly important role in vocational-technical education. It appears most advantageous to strengthen Northern's role in that direction. Merger at this time

may detract from the potential of coordination with the vocational-technical centers. Northern also has a reasonable cost-per-student when consideration is given to the large number of technical programs located on that campus.

Should the Board wish to pursue merger further, it is suggested that consideration be given to the merger of Western Montana College with the University of Montana and the merger of Montana Tech with Montana State University. In the case of Western, it appears difficult to increase enrollments to the range of the 1,500 to 2,000 students needed to reduce basic support costs to a desirable level. Merger does offer the potential to reduce those costs, while still maintaining and strengthening the academic programs offered on the campus.

A consideration in addition to cost must be included in the discussion of merging Montana Tech. It is the question of whether Montana Tech can be viable in the future as a free-standing specialized institution. The engineering programs at Tech are important to a natural resource dependent state such as Montana. Most of Tech's programs should be available to Montana students. It seems, however, that those programs would be strengthened if they were integrated with the engineering and research programs at Montana State University. Both MSU and Montana Tech have aspirations in such areas as environmental engineering and materials science. It would be unfortunate to create duplication in those areas in the future.

#### Impact

A more detailed study of the potential economics of merger is necessary before it can be stated with assurance what the savings would be for each campus. A preliminary review of staffing patterns for each of the institutions indicates the amount would fall in the \$150,000 to \$200,000 range. Other benefits include branch campus access to administrative support services, faculty and student participation as members of a university, and strengthened focus on campus mission.

The primary disadvantage of merger will be the loss of campus identity and name recognition. After a period of time this would not be an important factor. Initially, however, negative reactions can be expected from alumni and various support groups.

#### Chapter Footnotes

<sup>1</sup> David T. Kelley "Status Report on Mergers/Closings of Institutions of Higher Education in the United States" (unpublished survey conducted for the Coordinating Board, Texas College and University System, Austin: 1986), p.1.

<sup>2</sup> Gail S. Chambers, Approaching College Merger (University of Bridgeport: 1983), p.3.

## Chapter 15

### CLOSURE OF EASTERN MONTANA COLLEGE

The following role and scope statement for Eastern Montana College was adopted by the Board of Regents in 1979.

Eastern Montana College was established on March 12, 1927, with an initial authorization to prepare teachers for the elementary schools. The establishment of the college was in response to needs expressed by the eastern part of the state, since all the existing institutions of higher education were in the western half. Eastern has grown with the city of Billings into the major educational center in eastern Montana. In the fall of 1982, 4,200 students attended Eastern of which number approximately one-third were enrolled on a part-time basis. Instruction was provided by over 150 regular faculty and a part-time faculty of nearly 75 community persons.

Eastern Montana College is a comprehensive state college with programs in liberal arts, teacher training, business and human services. Graduate programs through the master's level are offered in teacher training, special education and related areas. The programs in special education and rehabilitation counseling are unique in the university system. Programs have been developed in human services with particular attention to serving the needs of the dispersed population of eastern Montana.

Carefully selected liberal arts majors may be added to complete the process started in 1966. Eastern is also encouraged to develop a few new programs to meet the needs of metropolitan Billings, including expanded programming for part-time students. Eastern should maintain appropriate inter-institutional relationships with the University of Montana and Montana State University to promote public service and research efforts to help meet societal, governmental, industrial and continuing education needs of its urban area.

Quality instruction of students as well as promotion of scholarly interests of both students and faculty are primary purposes of Eastern Montana College. The underlying principle of the institution is a commitment to the value of lifelong learning. The continuing educa-

tion program gives students an opportunity to learn the newest developments in their fields of study and to explore newly emerging areas of interest and concern.

Eastern's special character as a comprehensive state college needs to be carefully defined. It sits in one of the state's most populous and rapidly developing urban centers and on the edge of the vast, thinly settled eastern one-half of Montana which has not been served adequately by the Montana University System. New programs addressed to these special clientele must be regarded as inevitable. But Eastern should not be encouraged to duplicate the core arts and sciences degree programs of the universities. There is an opportunity at Eastern for innovation in the development of new pre-professional and professional programs addressed to the needs of its two-faceted geographic service area.

Table 15-1 lists the academic programs offered by Eastern Montana College that are not duplicated in the System and the 1985-86 enrollment in these programs.

TABLE 15-1  
Programs Unique to EMC

PROGRAM	ENROLLMENT
Communication Arts Major, B.A.	116
Human Services, B.S.	135
Rehabilitation and Related Services, B.S.	50
Special Education K - 12	25
Rehabilitation Counseling, M.S.	45
Special Education, M.S.	126
Special Education and Rehabilitation, A.A.	20
Early Childhood Studies, A.A.	10
Therapeutic Recreation Minor	10

Source: Compiled from information furnished to the Office of the Commissioner of Higher Education by Eastern Montana College.

Eastern Montana College also houses the Montana Center for Handicapped Children, a unique facility designed to provide educational and clinical programs and services to children and youth with moderate to severe multi-handicapped conditions. The Center is a primary clinical and educational training facility serving Eastern's undergraduate and graduate programs in special education, human services, and rehabilitation.

If Eastern Montana College were to be closed, it would be necessary to decide if programs not duplicated elsewhere in the System should be relocated. The Board could choose not to continue those programs. In the case of special education, such a decision would be difficult because special education teachers are needed in the public schools. The Montana Center for Handicapped Children is also important to the state. It may be possible to transfer this program to another Billings agency without extensive relocation costs. Until decisions are made as to what programs would be transferred and to where, no estimate can be made on relocation costs.

Eastern Montana College is the primary provider of continuing education to the eastern one-third of Montana. A number of courses were developed in cooperation with community support groups, business leaders, and public schools. During the past fiscal year, the institution offered 128 classes for credit through its continuing education program, enrolling 1,771 students. The continuing education center also offered a wide variety of workshops, seminars, etc., which enrolled 2,082 participants. These programs were designed to focus upon the specific needs of participants ranging from personal growth to business and professional skill development.

Yellowstone County contributes 61.2 percent of the students attending Eastern Montana College. An additional 9.5 percent of the students are from counties contiguous to Yellowstone. The remainder of in-state students are drawn from all the counties in the state. Out-of-state students represent 3.7 percent of the

institution's enrollment, and foreign students account for .2 percent. Table 15-2 shows the distribution by class (freshman, sophomore, etc.) of the Fall 1985 enrollment.

TABLE 15-2  
Headcount Enrollment - Fall 1985

CLASSIFICATION	ENROLLMENT
Freshmen	1,819
Sophomores	588
Juniors	514
Seniors	676
Graduate (Masters)	85
Post-baccalaureate	488
Miscellaneous	3
TOTAL	<u>4,173</u>

Source: Compiled from information furnished to the Office of the Commissioner of Higher Education by Eastern Montana College.

Eastern's primary service region is the greater Billings area. This would be expected because Billings is the state's largest city. It would also be expected that a large percentage (85 percent) of the students would commute rather than live in the residence halls. Eastern's service as a community college is also evident given the high proportion of its enrollment in the freshman class.

Eastern has a part-time student enrollment of 1,358, and the number of commuting students over age 25 totals 1,823. Both the number of commuting students and the number of students over the age of 25 are important elements in attempting to estimate the students who would be lost to the System if the institution were closed. Although it is not possible to predict that loss with a high degree of accuracy, it is safe to assume that if Eastern were closed at least 40 percent of its enrollment would be lost to the System.



Eastern Montana College is a major contributor to the cultural and recreational activities of the community. The various functions include theater production, art exhibits, music programs, athletic events, library services, and a wide range of recreational and physical education activities. Faculty, staff and students also participate in a number of community functions not directly sponsored by the college. This support is important to the success of projects sponsored by other community groups.

The Eastern Montana College Foundation and the Alumni are major support groups for all of higher education in Montana. Eastern also has support from Friends of KEMC, a group which provides assistance for its FM radio station. Each of these organizations would undoubtedly go out of existence if Eastern were closed. Alumni are located throughout the entire state and are essential in promoting the interests of higher education. The Foundation now has assets exceeding \$1 million and provides extensive support for scholarships and institutional activities.

Eastern Montana College is one of the largest single economic units in the Billings or Yellowstone County area. During 1984-85, the college employed approximately 885 individuals and generated a monthly payroll of approximately \$900,000.

Employees and salaries have an obvious and direct impact upon the community. However, there are additional substantial impacts to consider, including the economic impact of students and their families, out-of-town attendees at special events, and spin-off salaries in the community. The total economic impact of Eastern on the community of Billings in 1984-85 was estimated at \$61,000,000 as summarized in Table 15-3.

The salary expenditure for fiscal year 1984-85 amounted to \$10,683,628. Of this amount, it is estimated that 95 percent was initially spent or deposited in Billings and Yellowstone County. Assuming an average economic turnover factor of 2.7, the direct impact of salaries on economic activity was approximately \$27,403,504 in 1984-85 ( $\$10,683,628 \times .95 \times 2.7$ ). A basic

definition of economic turnover is the number of times money initially spent in Billings is respent prior to leaving the community. An example would be a payroll dollar which is used to buy meat from the grocer, who in turn remodels a building and pays a contractor, whose carpenter purchases gasoline, and then the service station owner purchases clothing, etc. The factor used in this report is 2.7, which includes the initial expenditure, and is relatively low and conservative. Eastern's operating budget for 1984-85 was \$10,136,980, and it is estimated that 60 percent of this amount was spent in the Billings area. The capital and equipment budget was \$383,519, and it is assumed that 100 percent of the budget was expended in Billings or the surrounding area. Using the 2.7 factor for economic activity, the impact of the operating budget was \$16,421,907 ( $\$10,136,980 \times .60 \times 2.7$ ) and the impact of the capital and equipment expenditures was \$1,035,501 ( $\$383,519 \times 1.0 \times 2.7$ ).

Students make personal expenditures for such items as transportation, personal effects, entertainment, medical care, books, and supplies. Parents or other relatives visiting students spend money for meals, lodging, and entertainment. Using a conservative figure of \$500 for each student's impact and \$150 for each student's family's impact, combined with a Fall 1984 enrollment of 4,207 and the same 2.7 turnover factor, the approximate impact of students was \$5,679,450 ( $\$500 \times 4,207 \times 2.7$ ) and of their families \$1,408,500 ( $\$150 \times 4,207 \times 2.7$ ).

It is estimated that approximately 93,900 individuals were either spectators or participants in extra-curricular events and activities on the EMC campus in 1984-85. Assuming that 30 percent of these persons reside outside the Billings area and that these individuals spent \$50 for each visit, there was an economic impact of \$1,408,500 ( $\$50 \times 93,900 \times .30$ ).

The indirect or "spin-off" impact of Eastern's direct economic impact upon Billings generates dollars which are respent for salaries in Billings. It is estimated that 35 percent of the

initial dollar expenditures (salaries, operating expenses, and capital and equipment) generate salary dollars for other community based employees. These dollars in turn produce an economic turnover. In Billings, the indirect or "spin-off" impact of Eastern's budget for 1984-85 was over \$7,000,000 (\$21,204,127 x .35).

Utilizing the above methodology, the estimated total economic impact of Eastern Montana College in the Billings area is \$61 million annually. The methodology utilized to derive this figure is based upon formulas developed by the American Council on Education. As noted above, the methodology has been applied in a conservative manner and, while a number of approximations are rough, they probably are on the side of underestimation as opposed to overestimation.

TABLE 15-3  
Economic Impact of EMC Upon the Billings Area  
1984-85

TYPE OF IMPACT	AMOUNT OF IMPACT	
Direct Impact		
Salaries	\$ 27,403,504	
Operating Expenses	16,421,907	
Capital & Equipment	1,035,501	
Total Direct Impact		\$ 44,860,912
Student Impact		
Students	5,679,450	
Families	1,408,500	
Total Student Impact		7,383,285
Activity Impact		1,408,500
Spin-off Impact		<u>7,421,444</u>
Total Impact		<u>\$ 61,073,919</u>

If Eastern were closed there would be an annual cost savings for the System due to reduced operating costs. Because many students would transfer to other units, there would be increased costs at the transferee institutions, but the effect would be a net savings. Additionally, there would be one-time costs associated with the closure. These various costs are summarized in Table 15-4. The underlying assumptions used to derive this table are discussed in Chapter 19.

TABLE 15-4  
Cost Analysis of Closure of EMC

TYPE OF COST	AMOUNT
Annual	
Additional Operations Cost to Transferee Institutions*	\$ 7,617,024
Scholarships and Fellowships	312,905
Physical Plant Residual	<u>1,025,000</u>
Annual Total	\$ 8,954,929
One-Time	
Sick Leave and Vacation	
Severance Payout	\$ 950,760
Defeasement of Outstanding Bonds	<u>9,541,429</u>
One-Time Total	\$10,492,189

\*It is assumed that 2,088 students (60 percent of the 1985-86 FYFTE enrollment of 3,480) would transfer to either MSU or UM with an average FY support of \$3,648 per student.

The 1985-86 state supported operating budget for EMC was \$13,779,827. From Table 15-4, \$8,954,929 in state support for operations will still be required following closure. Thus, closure of EMC would result in a savings of \$4,824,898, representing 3.5 percent of the 1985-86 state supported portion of the System budget.

## Chapter 16

### CLOSURE OF NORTHERN MONTANA COLLEGE

The following role and scope statement for Northern Montana College was adopted by the Board of Regents in 1979.

Northern Montana College was authorized by the legislature on March 8, 1913, but did not open for instruction until September 24, 1929. Northern has been a regional, multi-purpose institution from its inception, offering pre-professional and professional courses of study in the liberal arts and sciences, teacher education, and vocational-technical studies. Originating as a two-year pre-professional institution, Northern has maintained this three-pronged mission throughout most of its 50-year history. Northern seeks to be a quality undergraduate institution where good teaching has top priority, and where scholarly research is oriented toward the mission of the college. In the fall of 1982, Northern had nearly 1,700 students with an academic faculty numbering close to 90.

Northern has sole responsibility in the Montana University System for vocational-technical education, primary responsibility for vocational teacher training, and offers the Bachelor of Technology degree for students who wish to combine a liberal arts background with vocational training. Further, Northern has the sole responsibility for meeting the certification needs of the state through an itinerant vocational teacher education program. Northern offers the master of education degree with options in elementary education, vocational education, career guidance and counseling, and industrial arts as well as bachelor's degrees in elementary, secondary and vocational-technical education.

Because of its location, Northern is uniquely situated to provide the educational, cultural and public service leadership needed for the vast area which it serves. In addition to the regular degree offerings carried through the continuing education program, the college seeks to offer special enrichment programs, seminars, institutes, workshops, and credit and non-credit courses to meet the growing demand for non-traditional educational opportunities.

Northern should develop appropriate inter-institutional relationships within the state in order to participate in expanded programs in technology, and in meeting the manpower needs of an industrial society. Northern should also maintain continuing liaison and explore cooperative ventures with the state's community colleges and post-secondary vocational-technical centers. Northern draws its special identity within the Montana University System from its near monopoly in vocational training and vocational teaching education. The college should assume a leadership role in post-secondary vocational education in Montana.

Table 16-1 lists the academic programs offered by Northern that are not duplicated in the System and the 1985-86 enrollment in these programs. Some two-year programs are available in similar fields at the community colleges and vocational-technical centers.

TABLE 16-1  
Programs Unique to NMC

PROGRAMS	ENROLLMENT
Agricultural Technology, Agri-Business, A.S.	10
Agricultural Technology, Agri-Services, A.S.	3
Agricultural Technology, Farm/Ranch Management, A.S.	16
Automobile Technology Body Service, A.S.	21
Automobile Technology, A.S.	64
Business Administration, A.S.	103
Computer Technology, A.S.	38
Construction Technology, A.S.	39
Diesel Technology, A.S.	41
Drafting Technology Architecture, A.S.	37
Drafting Technology Mechanical, A.S.	1
Electrical Technology, A.S.	6
Electronics Technology, A.S.	35
Farm Mechanics, A.S.	14
Mechanical Technology, A.S.	7
Metals Technology, A.S.	12
Nursing, A.S.	138
Secretarial Technology, A.S.	44
Fish and Wildlife Management Transfer Program, A.S.	6
Water Quality Technology, A.S.	16
Automotive Technology, B.T.	32
Construction Technology, B.T.	21
Diesel Technology, B.T.	45
Drafting Technology Architecture, B.T.	32

TABLE 16-1 - Continued

PROGRAMS	ENROLLMENT
Farm Mechanics, B.T.	7
Interdisciplinary Studies, B.A.	7
Interdisciplinary Studies, B.S.	8
Mechanical Technology, Electro-Mechanical, B.T.	15
Mechanical Technology Metals, B.T.	1
Trades and Industry Automobile, B.S.	14
Trades and Industry Diesel, B.S.	2
Trades and Industry Draft, B.S.	1
Trades and Industry Electronics, B.S.	3
Career Guidance (K-12), M.E.	97
Automobile Body, Certificate	5
Automobile Service, Certificate	2
Diesel Technology, Certificate	8
Metals Technology, Machine Shop, Certificate	1
Metals Technology, Certificate	1

The University System does not have space available to accommodate all the vocational-technical programs currently offered at Northern. These programs require extensive space to accommodate large equipment, and even if the programs were dispersed throughout the system, sufficient space does not exist. Some of the programs, such as electronics, could be accommodated on other campuses. The other programs would have to be discontinued unless new construction were authorized.

Northern Montana College provides a wide variety of continuing education activities for the citizens along the Hi-line, including courses for teachers, workshops for business and industry, and public interest courses in the community. Facilities and equipment on the campus are used by numerous organizations for a wide range of activities: training schools for General Motors, Ford, Case International; the American Service Examinations for mechanics; small business clinics and seminars; computer workshops, etc. The faculty and staff serve on advisory committees, present lectures and demonstrations, and serve as consultants to a wide range of organizations. In fiscal

year 1986, Northern offered 39 credit classes in which 633 students participated. Noncredit seminars, courses, and workshops served over 2,000 additional students.

Northern Montana College draws 34 percent of its enrollment from Hill County. The three counties contiguous to Hill contribute an additional 10 percent to the institution's student population, and Cascade County adds over 18 percent. Almost 84 percent of Northern students are from the "Hi-line." Out-of-state students account for only 3 percent. Northern enrolls the highest percentage of Native Americans in the system. Native Americans represent 12 percent of the institution's enrollment. Table 16-2 shows the distribution by class (freshman, sophomore, etc.) of the Fall 1985 enrollment.

TABLE 16-2  
Headcount Enrollment - Fall 1985

CLASSIFICATION	ENROLLMENT
Freshmen	697
Sophomores	331
Juniors	225
Seniors	241
Graduate (Masters)	133
Post-baccalaureate	94
TOTAL	<u>1,721</u>

Northern Montana College is nearly 250 miles from the nearest unit of the University System and is the only four-year institution in Montana offering associate and baccalaureate degrees in a number of vocational-technical areas. Northern's students are job oriented. They are often place-bound, with strong ties to their communities. A large proportion, particularly the non-traditional students, enroll in two-year programs, and because of a successful college experience subsequently seek baccalaureate degrees. Northern enrolls 406 part-time students and 783 commuting students over age 25, many of



whom would not transfer if the institution were closed. If the institution were closed, at least 60 percent of the students would be lost to the University System. Many of those in vocational-technical education would undoubtedly enroll in the vocational-technical centers and the community colleges, rather than in the University System.

Northern Montana College serves the Hi-line as a major cultural and recreational center. Its library is important to the public schools and the citizens of the region. Throughout the year Northern offers lectures, music events, theater productions, art exhibits, athletic events, and a number of special interest workshops. Northern has unique facilities where citizens can participate in a wide variety of lifelong learning activities ranging from self-enrichment to the acquisition of skills necessary for successful advancement in employment. These types of opportunities would not be available to a large number of the state's citizens if the institution were closed.

Northern Montana College has developed excellent support relationships with a number of businesses and industries for which it trains future employees. The Alumni and Foundation organizations have continued to develop a strong base of support for the institution and the University System. A high percentage of Northern's graduates remain in Montana and continue to contribute to the institution. If Northern were closed, the Alumni Association and the Foundation would cease to operate, and the result would be the loss of support in northeastern Montana for all of higher education.

Due to the relative geographic isolation and sparse population of Havre and the Hi-line, Northern Montana College's economic impact on the community is perhaps more profound than would be the case in a similar sized institution in a metropolitan area. The economic activity attributable to the school is approximately \$31,000,000 per year, as shown in Table 16-3.

The College employed on an average 500 people during 1985-86, with an annual payroll of nearly \$6,485,298. It is estimated that 95 percent of this amount was deposited or spent within the immediate Havre community. Using an economic turnover factor of 2.7, the impact on economic activity of salaries becomes \$16,634,789 ( $\$6,485,298 \times .95 \times 2.7$ ). The operating budget was \$3,787,084 and assuming 60 percent of this amount was retained within the community and using an economic turnover factor of 2.7, the impact of the operating budget becomes \$6,135,076 ( $\$3,787,084 \times .60 \times 2.7$ ). In a similar fashion, assuming all capital and equipment expenditures of \$408,457 remained in the Havre area, there was a resultant impact of \$1,102,833 ( $\$408,457 \times 1.0 \times 2.7$ ).

The student population also contributed to the community's economy. Using the Fall Quarter 1985 enrollment of 1,729, an economic turnover factor of 2.7, and a \$500 estimate of student expenditures, the economic impact was \$2,300,000 ( $\$500 \times 1,729 \times 2.7$ ). Visits to the community by the parents, relatives, and friends of students, assuming expenditures of \$150 per family, results in an economic impact of \$700,245 ( $\$150 \times 1,729 \times 2.7$ ).

While the above categories make an obvious economic contribution to the community, other activities also impact the economy of Havre. Approximately 20,000 people attended or participated in various academic, cultural, and sports events held at or sponsored by the College during 1985-86. Of this group of 20,000, approximately 25 percent were out-of-town guests who spent an average of \$50 during their visit to the campus, resulting in an additional \$250,000 ( $\$50 \times 20,000 \times .25$ ) being brought into the community.

Additional dollars are generated from NMC's direct impact producing an indirect impact on Havre's economy. Approximately 35 percent of the dollars initially spent in Havre are used to fund salaries and wages of other residents. These residents, spending their own salaries and wages within the community, produce another phase of economic turnover. The indirect impact for 1985-86 is estimated at \$3,700,000 ( $\$10,680,839 \times .35$ ).

The total impact of nearly \$31 million dollars is a very conservative estimate. The economic turnover factor and the percentages used in the formula were provided by the Havre Chamber of Commerce, with the remaining data supplied by the NMC Business Office and Financial Aid Office.

TABLE 16-3  
Economic Impact of NMC Upon the Havre Area  
1985-86

TYPE OF IMPACT	AMOUNT OF IMPACT	
Direct Impact Salaries Operating Expenses Capital & Equipment Total Direct Impact	\$16,634,789 6,135,076 1,102,833	\$23,872,698
Student Impact Students Families Total Student Impact	\$ 2,334,150 \$ 700,245	\$ 3,034,395
Activity Impact Spin-off Impact		\$ 250,000 \$ 3,738,294
Total Impact		\$30,895,387

If Northern were to be closed, there would be annual cost savings due to reduced operating costs for the System. Because many students would transfer to other System units, the transferee institutions would experience increased costs. There would also be costs associated with maintenance of the NMC physical plant. Nonetheless, the effect would be a net savings. There would be some initial, one-time costs associated with closure. Table 16-4 shows the costs of closure.

TABLE 16-4  
Cost Analysis of Closure of WMC

TYPE OF COST	AMOUNT
Annual	
Additional Operations Cost to Transferee Institutions*	\$2,473,344
Scholarships and Fellowships	238,369
Physical Plant Residual	550,465
Annual Total	<u>\$3,262,178</u>
One-Time	
Sick Leave and Vacation	
Severance Payout	\$ 523,075
Defeasement of Outstanding Bonds	2,066,787
One-Time Total	<u>\$2,589,862</u>

\*It is assumed that 678 students (40 percent of the 1985-86 FYFTE enrollment of 1,693) would transfer to either MSU or UM with an average FY support of \$3,648 per student.

The 1985-86 state supported operating budget for NMC was \$7,586,260. From Table 16-4, \$3,262,178 in state support would still be required following closure. Thus, closure of NMC would result in a net savings of \$4,324,082, representing 3.2 percent of 1985-86 state supported portion of the System budget.

## Chapter 17

### CLOSURE OF WESTERN MONTANA COLLEGE

The following role and scope statement for Western Montana College was adopted by the Board of Regents in 1979.

Western Montana College was established on February 17, 1893, as the State Normal School. The first session opened on September 7, 1897. Today the college has nearly 1,000 students and 36 full-time faculty members. Throughout its history Western Montana College has been a teacher training institution and it will continue this emphasis while broadening its curricular base. While striving to maintain quality faculty and to strengthen academic standards, the primary concern of the college will be instruction and not research. Western Montana College will expand its service to the non-traditional student through the continuing education program which includes its summer session, and evening and weekend on and off-campus programs. Through the Rural Education Center and continuing education program the college specifically offers services to rural communities throughout the state.

Western should capitalize on the positive aspects of its non-urban location in a setting of great natural beauty and recreational opportunities. Academic programs can and should be developed which exploit these assets and which make the most of the close personal interaction of students, faculty and administration so uniquely advantageous to the small college.

Western offers graduate work leading to the master of education degree and fifth-year professional certificate in education. Bachelor's degrees are offered in elementary education, secondary education, human resource management, and natural heritage. Associate degrees and transfer programs are offered in several areas, and additional non-degree programs will be developed to improve the articulation with the other units of the Montana University System.

Table 17-1 lists the academic programs offered by Western Montana College that are not duplicated in the System, and the 1985-86 enrollment in these programs.

TABLE 17-1  
Programs Unique to WMC

PROGRAM	ENROLLMENT
American Studies, BA	11
Natural Heritage, BA or BS	29
Rural Education	0

Both American Studies and Natural Heritage are thematic majors designed to serve students who wish to pursue non-teaching liberal studies degrees. These two programs are very inexpensive to operate in that they utilize a number of courses that support other degrees and the general education core. They require no special facilities and very little special equipment. Rural Education is not a specific program, but an emphasis in teacher education to provide students with an appreciation for and an orientation to teaching in a rural environment.

It would not be necessary to relocate the unduplicated programs from Western because other programs are available in several locations for students to pursue non-teaching liberal studies degrees.

Western Montana College plays an important role in continuing education of teachers and local citizens. Over the past fiscal year Western offered 123 continuing education credit courses which enrolled 1,348 students. Western also provided a variety of non-credit offerings enrolling 534 students.

Western has become an important host for summer geology camps for several institutions throughout the country. During the summer of 1986 the following institutions used Western as a base for field study:

- 1) University of Montana,
- 2) University of Arkansas,
- 3) Eastern Kentucky University,
- 4) University of Washington,
- 5) Princeton University,
- 6) Southern Illinois University, and
- 7) Georgia State University.

Western will soon have completed a new facility at Birch Creek which will be a major asset to the institution's continuing education activities. This new center was built with private funds and is designed to facilitate a variety of conferences, workshops, and seminars.

Western Montana College draws approximately 25 percent of its students from Beaverhead County. An additional 29 percent originate in the counties contiguous to Beaverhead. Only nine Montana counties are not represented in Western's student population, and each of those counties is at a considerable distance from Dillon. Out-of-state students represent 7 percent of Western's enrollment, with the majority of these students coming from Idaho. Table 17-2 shows the distribution by class (freshman, sophomore, etc.) of the Fall 1985 enrollment.

TABLE 17-2  
Headcount Enrollment - Fall 1985

CLASSIFICATION	ENROLLMENT
Freshmen	315
Sophomores	136
Juniors	128
Seniors	167
Graduate (Masters)	26
Post-baccalaureate	118
Miscellaneous	80
TOTAL	970

Western Montana College has played an important role by serving as a community college for southwestern Montana in addition to its role in the preparation of teachers. Western enrolls 383 commuting students over age 25 and 272 part-time students. It is evident from the number of students over 25 and the number of part-time students that the institution plays an important role in the attainment of educational objectives for place-bound citizens. The institution estimates that approximately 385 students would be eliminated from the System if Western were closed. This is nearly 40 percent of the institution's enrollment.

Western Montana College is the primary cultural center in Beaverhead County. Citizens have access to a wide range of activities including library services, music events, art displays, theater productions, guest speakers of national prominence, athletic events, and a number of individual recreational activities available in the institution's physical education facilities. The College offers lifetime learning activities that utilize various portions of the campus, including the shops, microcomputer center, art facilities, and regular classrooms. Western also has an excellent collection of stuffed wild animals and a western art collection that are of value to all of southwestern Montana.

Western continues to strengthen its alumni and foundation organizations. A high percentage of the institution's graduates remain in the state and serve in the public school systems. The Western Montana College Foundation has made excellent progress in its development. It is now in a position to provide support for scholarships and other institutional needs. The Foundation and Alumni groups are strong advocates for higher education. If Western were closed, an important base of support would be lost.

With agricultural, mining, and timber industries plummeting to historic lows, the financial impact of Western Montana College upon Dillon and Beaverhead County has become a critical factor in the economic well-being of this region. Western's contribution is



estimated to have been approximately \$17,410,000 in 1985-86 and is summarized in Table 17-3.

Employees' salaries provide a major impact, with 95 percent of salary expended or deposited in the Dillon area. Assuming an average economic turnover factor of 2.7, the direct impact of salaries on economic activity was approximately \$8,034,496 ( $\$3,132,357 \times .95 \times 2.7$ ). The concept of the average economic turnover factor is discussed in Chapter 15. The operating budget for the institution was \$2,880,192, with 60 percent of this amount remaining in the Dillon area, and the capital and equipment budget was \$253,063, with 100 percent staying in the community. Using the 2.7 factor for economic activity, the impact of the operating budget was \$4,665,911 ( $\$2,880,192 \times .60 \times 2.7$ ) and the impact of the capital and equipment budget was \$683,270 ( $\$253,063 \times 1.0 \times 2.7$ ).

Spending by students also contributes to the economic well-being of the community. Using a conservative estimate of \$500 in expenditures by each student, an enrollment of 970, and the 2.7 turnover factor, student spending gave rise to a \$1,309,500 impact ( $\$500 \times 970 \times 2.7$ ). Similarly, students' families also spend money in Dillon when they visit the students. Using an expenditure of \$150 for each family, there is an additional economic impact of \$392,350 ( $\$150 \times 970 \times 2.7$ ).

Special events at Western Montana College draw participants and spectators from throughout the region. These events include sports meets, Montana Boys' State, and conventions. It is estimated that 8,660 individuals were associated with such activities and that 30 percent came from outside the Dillon area. If it is assumed that such individuals spent \$50 each, there is an impact of \$129,900 ( $\$50 \times 8,660 \times .30$ ).

There is also a "spin-off" impact of Western's direct economic impact upon Dillon, estimated at 35 percent of the total direct expenditures associated with salaries, operating expenses, and capital and equipment. For Western this amounts to \$2,192,964 ( $\$6,265,612 \times .35$ ).

TABLE 17-3  
Economic Impact of WMC Upon the Dillon Area  
1985-86

TYPE OF IMPACT	AMOUNT OF IMPACT
Direct Impact	
Salaries	\$ 8,034,496
Operating Expenses	4,665,911
Capital & Equipment	683,270
Total Direct Impact	\$13,383,677
Student Impact	
Students	1,309,500
Families	392,350
Total Student Impact	1,702,350
Activity Impact	129,900
Spin-off Impact	2,192,964
Total Impact	\$17,408,891

If Western were to be closed, there would be an annual cost savings due to reduced operating costs for the System. Because there would be transfers from Western to other units, there would be increased costs at the transferee institutions. There would also be continuing costs to maintain Western's physical plant. Despite the ongoing costs, the effect would be a net savings. There would be one-time costs associated with closure. Table 17-4 presents the costs associated with closure. The underlying assumptions used to compute the table are discussed in Chapter 19.

TABLE 17-4  
Cost Analysis of Closure of WMC

TYPE OF COST	AMOUNT
Annual Additional Operations Cost to Transferee Institutions*	\$1,243,968
Scholarships and Fellowships	75,057
Physical Plant Residual	395,619
Annual Total	<u>\$1,714,644</u>
One-Time Sick Leave and Vacation	
Severance Payout	\$ 207,696
Defeasement of Outstanding Bonds**	986,380
One-Time Total	<u>\$1,194,076</u>

\*It is assumed that 513 students (60 percent of the 1985-86 FYFTE enrollment of 854) would transfer to either MSU or UM with an average FY support of \$3,648 per student.

\*\*Does not include Long Range Building Program loan for the swimming pool.

The 1985-86 state supported operating budget for WMC was \$3,949,554. From Table 17-4, \$1,714,644 in state support for operations would be required following closure. Thus, closure of Western Montana College would result in a savings of \$2,234,910, representing 1.6 percent of the 1985-86 state supported portion of the System budget.



## Chapter 18

### CLOSURE OF MONTANA COLLEGE OF MINERAL SCIENCE AND TECHNOLOGY

The following role and scope statement for Montana College of Mineral Science and Technology (Montana Tech) was adopted by the Board of Regents in 1979.

Montana College of Mineral Science and Technology was established on February 17, 1893, as the Montana School of Mines. The first students were enrolled on September 11, 1900. The city of Butte was a wise and logical selection for the location of the college for it is a focal point of extensive mineral operations. In the Fall, 1982, the college had more than 2,200 students enrolled. The faculty consisted of 88 F.T.E.

From the beginning, special emphasis was laid upon the four main branches of mineral technology -- exploration, production, processing, and refining. The faculty of the college and the Montana Bureau of Mines and Geology also contribute much to basic research and innovative approaches to problem solving in the very important and basic mineral industry.

In keeping with subsequent developments and the increasing sophistication of the mineral and raw materials industries, the original curriculum in mining engineering has evolved into separate, specialized curricula designed to prepare students for professional service in the complex yet specialized principal categories of raw material production. This process has resulted in present bachelor's and master's programs in engineering science and geological, geophysical, metallurgical, mineral processing, mining and petroleum engineering. A bachelor's program is offered in environmental engineering, and master's degrees are offered in geochemistry (in collaboration with the universities), geology, metallurgy, mineral processing, and industrial hygiene.

To support the engineering curricula, and to meet the growing demands for higher education opportunities, the college has developed additional educational strengths. Bachelor's degree programs are now offered in business administration, chemistry, mathematics, computer science, occupational safety and health, and society and technology.

The college provides service to state government and the citizens of the state by developing, gathering, analyzing, cataloging, and disseminating information concerning the location and development of the mineral and energy resources and related resources of the state. This mission is the major responsibility of the Montana Bureau of Mines and Geology, a department of the college. In addition to research activities of individual faculty members, the college is a major participant in the state's magnetohydrodynamics research, and has been designated one of 20 national Mining and Mineral Resources Research Institutes.

Montana College of Mineral Science and Technology has four primary aims: to provide education of the highest possible quality, to prepare its students for outstanding professional attainment, to conduct needed and basic research in the mineral field and to serve the Butte/Silver Bow community through continuing education and transfer programs. Study courses, work experience, and extracurricular activities blend to provide broad and thorough training for enlightened citizenship and professional excellence.

Table 18-1 lists the academic programs offered by Montana Tech that are not duplicated in the System and the 1985-86 enrollment in these programs:

TABLE 18-1  
Programs Unique to Montana Tech

Program	Enrollment
Environmental Engineering, B.S.	42
Geological Engineering, B.S.	69
Geophysical Engineering, B.S.	54
Metallurgical Engineering, B.S.	34
Mineral Processing Engineering, B.S.	21
Mining Engineering, B.S.	68
Occupational Safety and Health, B.S.	24
Petroleum Engineering, B.S.	283
Engineering Science, M.S.	12
Geochemistry, M.S.	3
Geological Engineering, M.S.	4
Geophysical Engineering, M.S.	5
Industrial Hygiene, M.S.	3

TABLE 18-1 - Continued

Program	Enrollment
Metallurgy, M.S.	3
Metallurgical Engineering, M.S.	10
Mineral Processing, M.S.	2
Mineral Processing Engineering, M.S.	2
Mining Engineering	9
Petroleum Engineering, M.S.	10

Montana Tech has traditionally emphasized the four areas of mineral technology - exploration, processing, refining, and production. However, in keeping with subsequent developments and the increasing sophistication of the mineral and raw materials industries, the original curriculum in mining engineering has necessarily evolved into several distinct and specialized curricula. This expansion has resulted in the programs listed as unduplicated in the system. In addition to these unique programs, the institution provides the only service to state and federal government and to Montana citizens in developing, gathering, analyzing, cataloging, and disseminating information on the location and development of mineral and energy resources and related raw materials.

Space is not available within the Montana University System to relocate the unduplicated programs at Montana Tech. If the institution were closed, it would be necessary to construct new facilities or discontinue some or all of the engineering programs.

For the past several years Montana Tech has focused on its primary instructional mission in the education of professionals for the minerals and energy industries. During the rapid growth period of 1973 to 1983 when the enrollment tripled from 700 to more than 2,200, there was no motivation to engage in continuing education. That situation is now changing. In the Fall of 1986, Montana Tech is presenting its first professional development courses and evening courses on information systems technology and computer courses for the general public. The institution is also developing a series of summer offerings for professional

development in the hydrogeological and petroleum areas and a series of special topics courses on mining technology. A feasibility study is underway that will explore the effectiveness of satellite based video instruction in resource economics and technology to target student populations.

Over 54 percent of the students attending Montana Tech are from Silver Bow County. An additional 8 percent of the students are from contiguous counties. Fifty-one of the state's fifty-six counties are represented in the institution's student population. Out-of-state students account for nearly 19 percent of the institution's enrollment, the highest percentage in the system. States sending the largest numbers of students are Washington - 35, California - 32, Wyoming - 22, Idaho - 18, North Dakota - 10, and Oregon - 10. Of the 130 foreign students, 95 are Canadians. Table 18-2 shows the distribution by class (freshman, sophomore, etc.) of the Fall 1985 enrollment.

TABLE 18-2  
Headcount Enrollment - Fall 1985

PROGRAM	ENROLLMENT
Freshmen	648
Sophomores	418
Juniors	271
Seniors	391
Graduate (Masters)	67
Post-baccalaureate	100
Unclassified	37
TOTAL	<u>1,932</u>

Montana Tech is a major provider of educational services to the Butte/Silver Bow area. If the institution were to close, it is estimated the System would lose at least 40 percent of the students. The institution presently enrolls 450 part-time students and over 600 students living in the community who are over age 25. Many of these students would not relocate to enroll in other institutions. If the engineering programs now existing



at Montana Tech were not offered elsewhere in the System, the numbers lost to the System would be much higher.

Montana Tech is an important cultural and recreational center in the community. The institution has excellent recreational facilities which are made available to the general public. The HPER Complex is used extensively by the community for health-fitness and other recreational activities. The campus facilities are available for plays, concerts, exhibits, lectures, and other cultural activities that are sponsored by either the institution or the community. The library is available to the general public and is heavily utilized by the Bureau of Mines and Geology and others throughout the nation doing research in the minerals fields.

Montana Tech has one of the most active and loyal alumni and corporate support groups in the nation. Older alumni feel deeply dedicated to the College -- even to the point of continuing to object vigorously to the change in name from the School of Mines to Montana Tech, even though that happened twenty years ago. An informal survey of recent alumni reveals that virtually all alumni financial support would disappear if the institution were merged. Corporate giving, particularly on the part of those organizations whose long-term support has facilitated the growth of Tech, would likewise cease.

During the first week of September 1986, the Office of the Chief Executive of Butte/Silver Bow held an executive conference on planning for the development of the local economy and obtaining "Certified Montana City" status for Butte/Silver Bow. The conference involved all segments of local business, the educational spectrum (including six invited participants from the College), municipal and state government, churches, large industry, the press, and the local development corporation. Montana Tech was identified by the conferees as a most critical resource to future development of the local economy in all areas discussed, except transportation. Indeed, as the local

community's third largest employee, Montana Tech ranked first as a critical resource for the development of

- 1) the US National High Altitude Sports Center (Tech will provide critical educational programs, student housing, and logistical support, and
- 2) development of High Technology (Montana Tech's research programs, the Bureau, and the Research Park are critical to developments such as the magnetohydrodynamics facility).

In addition, Tech's participation in the reopening of mining operations in Butte has been an essential component in the re-emergence of mining in Butte's economy. The World Museum of Mining and the Montana Mineral Museum on the campus are considered Butte's most important tourist attractions.

Employees and salaries have an obvious and direct impact upon the community. However, there are additional substantial impacts, including the economic impact of students and their families, out-of-town attendees at special events, and spin-off salaries in the community. The total economic impact of Montana Tech on the community of Butte in 1985-86 is estimated at \$39,000,000 as summarized in Table 18-3.

The salary expenditure for fiscal year 1985-86 amounted to \$7,552,594. Of this amount, it is estimated that 95 percent was initially spent or deposited in Butte/Silver Bow. Assuming an average economic turnover factor of 2.7, the direct impact of salaries on economic activity was approximately \$19,372,404 in 1985-86 ( $\$7,552,594 \times .95 \times 2.7$ ). A basic definition of economic turnover is the number of times money initially spent in Butte is respent prior to leaving the community. An example would be a payroll dollar which is used to buy meat from the grocer, who in turn remodels a building and pays a contractor, whose carpenter purchases gasoline, and then the service station owner purchases clothing, etc. The factor used in this report is 2.7, which

includes the initial expenditure, and is relatively low and conservative. The operating budget for Tech for 1985-86 was \$5,856,572, and it is estimated that 60 percent of this amount was spent in the Butte area. The capital and equipment budget was \$556,785, and it is assumed that 100 percent of the budget was expended in Butte or the surrounding area. Using the 2.7 factor for economic activity, the impact of the operating budget was \$9,487,647 ( $\$5,856,572 \times .60 \times 2.7$ ) and the impact of the capital and equipment expenditures was \$1,503,319 ( $\$556,785 \times 1.0 \times 2.7$ ).

Students make personal expenditures for such items as transportation, personal effects, entertainment, medical care, books, and supplies. Parents or other relatives visiting students spend money for meals, lodging, and entertainment. Using a conservative figure of \$500 for each student's impact and \$150 for each student's family's impact, combined with a Fall 1984 enrollment of 1,932 and the same 2.7 turnover factor, the approximate impact of students was \$2,608,200 ( $\$500 \times 1,932 \times 2.7$ ) and of their families \$782,460 ( $\$150 \times 1,932 \times 2.7$ ).

It is estimated that approximately 43,194 individuals were either spectators or participants in extra-curricular events and activities on the Montana Tech campus in 1984-85. Assuming that 30 percent of these persons reside outside the Butte area and that these individuals spent \$50 for each visit, there was an economic impact of \$647,910 ( $\$50 \times 43,194 \times .30$ ).

The indirect or "spin-off" impact of Montana Tech's direct economic impact upon Butte generates dollars which are respent for salaries in Butte. It is estimated that 35 percent of the initial dollar expenditures (salaries, operating expenses, and capital and equipment) generate salary dollars for other community based employees. These dollars in turn produce an economic turnover. In Butte, the indirect or "spin-off" impact of Montana Tech's budget for 1985-86 is estimated to be \$4,880,083 ( $\$13,965,951 \times .35$ ).

Utilizing the above methodology the estimated total economic impact of Montana Tech in the Butte area is \$39,000,000 annually.

TABLE 18-3  
Economic Impact of Montana Tech Upon the Butte Area  
1985-86

TYPE OF IMPACT	AMOUNT OF IMPACT
Direct Impact	
Salaries	\$ 19,372,404
Operating Expenses	9,487,647
Capital & Equipment	1,503,319
Total Direct Impact	\$ 30,363,370
Student Impact	
Students	2,608,200
Families	782,460
Total Student Impact	3,390,660
Activity Impact	647,910
Spin-off Impact	<u>4,880,083</u>
Total Impact	\$ 39,282,083

If Montana Tech were to be closed, there would be an annual cost savings due to reduced operating costs for the System. Because many students would transfer to other units, there would be increased costs at the transferee institutions, but the effect would be a net savings. There would also be some costs associated with maintenance of the Physical Plant. Additionally, there would be one-time costs associated with the closure. These various costs are summarized in Table 18-4. The underlying assumptions used to derive this table are discussed in Chapter 19.

TABLE 18-4  
Cost Analysis of Closure of Montana Tech

TYPE OF COST	AMOUNT
Annual	
Additional Operations Cost to Transferee Institutions*	\$ 3,629,760
Scholarships and Fellowships	294,068
Physical Plant Residual	301,888
Annual Total	<u>\$ 4,225,716</u>
One-Time	
Sick Leave and Vacation	
Severance Payout	\$ 656,064
Defeasement of Outstanding Bonds	5,532,692
One-Time Total	<u>\$ 6,188,756</u>

\*It is assumed that 995 students (60 percent of the 1985-86 FYFTE enrollment of 1,650) would transfer to either MSU or UM with an average FY support of \$3,648 per student.

The 1985-86 state supported operating budget for Montana Tech was \$8,783,160. From Table 18-4, \$4,265,716 in state support for operations would still be required following closure. Thus, closure of Montana Tech would result in a savings of \$4,557,444, representing 3.3 percent of the 1985-86 state supported portion of the System budget.



## Chapter 19

### INSTITUTIONAL CLOSURE SUMMARY

The state colleges have played an important role in providing educational opportunity to the citizens of Montana. Their presence in the respective communities has made it possible for a number of people who could not leave home to acquire a reasonably priced college education. The colleges are an important industry and contribute significantly to the economic base of the communities where they are located.

Savings from closing campuses are not as substantial as many would expect because it cannot be assumed other uses could be found for the facilities. Short of abandonment, costs of maintenance and security would continue. Each of the campuses has a bonded indebtedness which would require a revenue source. Failure to meet those obligations will seriously impair the state's bond rating on all future issues. The schools also have unfunded liabilities for which a one-time appropriation would be required.

Tables 19-1 through 19-3 summarize the effects of campus closures. These tables and the institutional closure summary tables in Chapters 15 through 18 were based upon the following assumptions:

- 1) The estimated cost of supporting students that transfer from a closing campus are based on the average budgeted support costs per student for UM and MSU using only the formula areas of Instruction and Support. The Public Service, Organized Research, and Physical Plant programs are not assumed to be impacted by the additional students.
- 2) The enrollments and budget amounts used to determine the impact of closure were based on 1985-86 year actuals.

- 3) A portion of the enrolled students on each campus are assumed to be place-bound and could not transfer to another unit of the System because of jobs, family considerations, etc. In addition, a portion of Northern Montana College's enrollment would not transfer to another University System unit because there are no similar type technical programs offered. The model does not include the cost associated with transferring to a community vo-tech program.
- 4) The closing estimates assume a small number of employees would be retained to heat, safeguard, and provide minimal maintenance for the physical plant facilities.
- 5) The legislature would have to provide the one time cost outlays that would be required to meet the statutory severance pay costs for unused vacation and sick leave. The legislature would also have to provide the funds to meet the outstanding revenue bond payments as the bonds would default if the campuses were closed.
- 6) The closures are assumed to happen at the end of a fiscal year. The campuses are closed at once rather than phased down over three years. This assumption is probably not realistic. The cost associated with a phase down, however, would exceed the more simplified assumption of sudden closure.

TABLE 19-1  
System Loss of Enrollment

CAMPUS	NUMBER OF STUDENTS LOST	STUDENTS LOST AS PERCENTAGE OF SYSTEM ENROLLMENT
EMC	1,392	5.4%
NMC	1,015	3.9
WMC	341	1.3
Montana Tech	663	2.6
TOTAL	<u>3,411</u>	<u>13.2%</u>



TABLE 19-2  
Estimated Annual Operating Savings  
Based on 1985-86 Figures

CAMPUS	SAVINGS	SAVINGS AS PERCENTAGE OF SYSTEM STATE SUPPORT
EMC	\$4,824,898	3.5%
NMC	4,324,082	3.2
WMC	2,234,910	1.6
Montana Tech	4,557,444	3.3
TOTAL SAVING	<u>\$15,941,334</u>	<u>11.6%</u>

TABLE 19-3  
Initial Cost of Institutional Closure

CAMPUS	INITIAL COST OF CLOSING
EMC	\$10,492,189
NMC	2,589,862
WMC	1,194,076
Montana Tech	6,188,756
TOTAL	<u>\$20,464,883</u>

Part of the savings from campus closure would result from decreasing access for those students who are unable to leave their communities because of family obligations or who cannot afford the additional costs of living away from home. This problem, however, is no different than that experienced by those in any other community not having a college.

If the Board chooses to close one or more campus, selection of the campuses to be closed should be based upon the impact such action would have on the availability of educational programs on a statewide basis, the actual amount of savings to be realized, and the investment in the physical plant to be taken out of service.

Western Montana College serves the fewest number of students and has the least investment in physical plant. Closure of that

institution would not result in the loss of program availability in the state because each of the present programs is available on other campuses. Closure of Western would, however, result in the least total dollar savings.

Closure of Montana Tech would eliminate the availability of programs in various areas of minerals engineering. These could be relocated, but new construction would be required on other campuses to accommodate those programs. If Tech were closed, it appears most feasible to arrange for student access through WICHE.

Northern Montana College serves a large sparsely populated area of the state. At the present time there are no other institutions offering degrees in several of the vocational-technical fields. Some of the two-year programs are offered in the community colleges, and in some cases non-degree programs are available in the vocational-technical centers. Four-year engineering technology degrees are available at Montana State University. If Northern were closed, students would not be without access to vocational-technical education or to teacher education -- the two major programs at the institution. Closure would result in reduced access for the residents of a large geographical area of the state.

Eastern Montana College is ideally located in the state's largest city and provides geographic access to a four-year degree for residents in the eastern portion of the state. Eastern's programs have been designed for the population served, and although the institution's programs are generally available at other units, there appears to be no advantage to consider closure of this institution. Its programs are cost-effective, and no significant enrollment deterioration is anticipated in the future.

If the Board makes a decision to close any of the campuses it would be necessary to design a phase-out schedule which assures accommodation of all presently enrolled students. Transfer to other institutions with similar programs without loss of credit is essential. Unique programs must be continued until students

complete their programs. Above all, thorough counseling and advising must be provided to all impacted students.

Efforts must also be made to accomodate qualified faculty in other positions available in the System. For those who cannot be placed within the System, assistance should be provided to identify other opportunities for impacted faculty.



## Chapter 20

### GOVERNANCE OF VOCATIONAL - TECHNICAL EDUCATION

#### General Discussion

Governance and funding of vocational-technical education have been matters of legislative concern for several years. A bill designed to resolve both issues failed during the 1985 legislative session, and an interim study committee was appointed to make recommendations on governance and funding of vocational-technical education to the 1987 Legislature.

At the request of the Interim Legislative Committee on Vocational-Technical Education, the Board of Regents submitted three different models of governance, all of which recommended the placement of post-secondary vocational-technical education under the Board of Regents. The first model was identified as a Multi-Branch Campus Model under which the vocational-technical centers would become branch campuses of Northern Montana College. The second model was identified as the State System Model. In this model, the centers would be placed under the Board and operated much like units of the University System. The third model called for branching the centers with the closest University System unit; for example, Billings with EMC; Butte with Tech; Missoula with UM; and Helena and Great Falls with NMC. The models presented to the Interim Committee are included in Appendix A of this report.

None of the models made provisions for local boards, which seemed to concern some members of the Committee. However, one of the major problems in the present structure is the lack of definition of state and local responsibilities. This can only be resolved if clear lines of authority for administration of the centers are provided by the enabling legislation.

The Interim Committee is expected to meet again to complete its work prior to the 1987 legislative session. At its last meeting the Committee voted to place the centers under the Board of Regents with some provisions for local boards. The issue of funding for the centers has not been resolved, but will no doubt be addressed at the committee's next meeting.

The five post-secondary vocational-technical centers were initially funded almost entirely with federal monies. This source of revenue has decreased significantly over the last several years. In fact, the new "Carl Perkins Act" no longer provides federal funds for on-going programs. Under that Act, funds are available only for innovative and exemplary programs, with some continuation of support for programs serving handicapped students. Table 20-1 indicates the source of funding for the centers for FY 1986.

The general fund appropriation for vocational-technical education is based upon student enrollment. Table 20-2 indicates variation among the centers in the portion the general fund represents of the total budget because other budget categories such as tuition and millage are set by the local boards and the Superintendent of Public Instruction. The centers are becoming more and more dependent on the voted levies each year. If a voted levy were to fail the affected center would be in serious financial difficulty.

TABLE 20-1  
Fiscal 1986 Sources of Funding for the  
Vocational-Technical Centers

SOURCE	I N S T I T U T I O N					
	BILLINGS	BUTTE	GREAT FALLS	HELENA	MISSOULA	TOTAL SYSTEM
General Fund	\$ 858,580	\$ 818,601	\$ 832,979	\$1,357,267	\$ 926,904	\$ 4,794,331
Tuition and Fees	288,204	234,060	238,572	372,240	336,144	1,469,220
County Millage	320,811	76,579	144,445	96,684	216,714	855,233
Education Trust	180,790	141,410	151,255	218,380	203,165	895,000
Federal Vo-Ed	127,612	121,613	121,010	106,295	325,807	802,337
Voted Millage	221,523	254,549	193,500	329,130	577,900	1,576,602
<b>TOTAL FUNDS</b>	<b><u>\$1,997,520</u></b>	<b><u>\$1,646,812</u></b>	<b><u>\$1,681,761</u></b>	<b><u>\$2,479,996</u></b>	<b><u>\$2,586,634</u></b>	<b><u>\$10,392,723</u></b>

TABLE 20-2  
Fiscal 1986 Percentage Distribution of  
Funding for the Vo-Techs

SOURCE	I N S T I T U T I O N					
	BILLINGS	BUTTE	GREAT FALLS	HELENA	MISSOULA	TOTAL SYSTEM
General Fund	43.0%	49.7%	49.5%	54.7%	35.8%	46.2%
Tuition and Fees	14.4	14.2	14.2	15.0	13.0	14.1
County Millage	16.1	4.6	8.6	3.9	8.4	8.2
Education Trust	9.0	8.6	9.0	8.8	7.9	8.6
Federal Vo-Ed	6.4	7.4	7.2	4.3	12.6	7.7
Voted Millage	11.1%	15.5%	11.5%	13.3%	22.3%	15.2%

Montana State University and Northern Montana College were the first institutions in Montana to offer post-secondary vocational-technical education. The programs at Montana State are now limited to vocational agriculture and home economics. Excluding Montana State, there are now nine state-supported institutions offering programs in vocational-technical education. Programs are available at the five vocational-technical centers, the three community colleges, and at Northern Montana College. A matrix of the programs offered at each institution can be found in Appendix B. Additionally, some vocational-technical programs are offered at the seven tribally-controlled community colleges. These are primarily in business occupations and the building trades.

None of the vocational-technical centers have developed into clearly specialized institutions. Rather, their programs are reflective of the needs of the communities they serve, which accounts for duplication of offerings. However, the centers serve as important contributors to the statewide manpower pool and not just to local needs. This statewide impact suggests there may be value in having each center move to a more specialized role. Such a move would be of significant value in balancing statewide manpower supply and demand.

If the Legislature should choose to reduce the number of vocational-technical centers, as some have suggested, a priority should be given to retention of those located in communities where other public post-secondary opportunities do not exist. This would balance access to post-secondary education while achieving increased efficiency in the delivery system.

Table 20-3 indicates the enrollments in vocational-technical education at the various state-supported institutions.



TABLE 20-3  
 Headcount Enrollment in Vocational-Technical Education  
 at State Supported Institutions  
 Fall 1985

INSTITUTION	ENROLLMENT	INSTITUTION	ENROLLMENT
<u>Vocational- Technical Centers</u>		<u>Community Colleges</u>	
Helena	971	Dawson CC	210
Missoula	609	Miles City CC	251
Butte	487	Flathead Valley CC	270
Great Falls	419	<u>Montana University System</u>	
Billings	439	Northern Montana College	849
Total Enrollment	<u>2,925</u>		

Although Table 20-3 indicates only Fall 1985 enrollment information, there were no significant changes from Fall 1984. The enrollments in 1986-87 are expected to be lower.

The most important issue to consider in deciding future governance for vocational-technical education is the emerging role of those institutions in the realm of post-secondary education. Today the trend is for such institutions to begin offering associate of applied science degrees in some of their programs. If that is the case nationally, then Montana must also move in the same direction. If it does not, students from the Montana schools will be at a disadvantage in seeking employment or in transferring to four-year colleges and universities. If the centers begin to offer associate degree level programs, it is essential that they be placed under the Board of Regents, or serious problems with coordination will result. It would be unfortunate and chaotic if a separate associate degree-granting system were to emerge in the state.

## Recommendation

If the Board of Regents decides to continue the current structure of the System, then it should request that the legislature place the vocational-technical centers under the Regents as branch campuses of Northern Montana College. Chief among the advantages would be improved coordination of all post-secondary education, improved articulation between vocational-technical education and the four-year institutions, and the strengthened ability to assist the state in its efforts in economic development.

Northern Montana College has more experience and expertise in vocational-technical education than any other institution or agency in the state. That institution has worked closely with the centers in offering courses for faculty and staff, and on developing articulation channels for students to continue their educational goals. In addition, Northern already has in place the necessary state accounting procedures to accommodate the financial administration of the centers in an efficient and effective manner. This would be a significant advantage if vocational-technical education were removed from control of local school districts which currently handle accounting for the centers.

Northern Montana College can provide vo-tech students strengthened financial aid counseling services; exposure to a broader range of career options requiring varying levels of training and skill development; and access to a well-developed placement service with wide-ranging contacts in business and industry.

## Impact

The Legislature must decide on a method for long-range funding for the centers. Possibilities raised in previous legislative committee discussions included funding from the general fund and enactment of a two mill statewide levy. In any case, if the

funding issue is not resolved, there seems little possibility of transferring involvement in governance from the local school districts which provide an important level of financial support.

Provisions are also necessary for transferring ownership of the existing facilities. Most of the facilities were built with a combination of federal, state, and local funds. In some cases, the buildings have bonded indebtedness for which a cash flow is needed to meet scheduled payments. Generally, the transfer of facilities does not seem to be a major problem, and should not impede decisions on governance or funding of vocational-technical education.



## Chapter 21

### THE ROLE OF THE UNIVERSITY SYSTEM WITH RESPECT TO COMMUNITY COLLEGES

#### General Discussion

Montana's three community colleges were started by local school districts to provide grades 13 and 14 for their citizens. Miles Community College was founded in 1939, followed by Dawson Community College in 1940. Flathead Valley Community College was founded in 1967. The community college laws, enacted in 1939, placed the colleges under the foundation program. The colleges operated under the supervision of the Board of Education from 1965 until 1971. In 1971 they were placed under the supervision and control of the Board of Regents. The community colleges are accredited by the Northwest Association of Schools and Colleges.

The Regents share the governance of each community college with the elected local Board of Trustees of the community college district. Regent policies have been developed over the years to differentiate the governing responsibilities of the Trustees and the Regents.

The state legislature has provided a portion of the funds for the annual operating budgets of the community colleges. Early in their histories, the community colleges were funded on the same basis as the school foundation program. Students over the age of 21, however, could not be counted in the average number belonging (ANB). The funding changed in 1975 to 65 percent state appropriations and 35 percent from local sources.

A community college funding study was requested by the 1979 legislature. The funding formula recommended by the study committee was adopted in 1981. This formula changed the funding ratio to 53 percent state and 47 percent local for the current unrestricted budget. The unrestricted budget is calculated by multiplying the projected cost per FYFTE by the projected FYFTE for each year of the biennium. For FY 1986 the funding was

changed to 52 percent state, 48 percent local, and reduced further for FY 1987 to 49 percent state, 51 percent local.

Table 21-1 indicates the funding sources for the community colleges.

TABLE 21-1  
1985-1986 Community College Unrestricted Budget

BUDGET CATEGORY	BUDGET AMOUNT		
	DCC	FVCC	MCC
General Fund	\$ 746,470	\$1,577,827	\$ 865,002
Tuition and Fees	112,000	270,245	140,403
Mandatory Levy	554,259	1,213,892	622,358
Voted Levy	135,416	0	0
Other	25,875	164,457	57,645
Total	\$1,574,020	\$3,226,421	\$1,685,408

The size of the community college district from which local taxes are drawn is not the same for each institution. The tax base for Dawson Community College is presently High School District #1, which includes only part of Dawson County. The local tax base for Miles Community College is all of Custer County. For Flathead Valley Community College, the tax base encompasses the entire county of Flathead.

The curricula of the three public community colleges in Montana are comparable in scope to those found in community colleges throughout the country. Their academic goals are to provide

- 1) the first two years toward a baccalaureate degree in the liberal arts, sciences, and pre-professional programs;
- 2) certificates and two year associate degrees designed for those who wish to pursue special interests, or who wish to obtain only two years of collegiate level work;
- 3) vocational, technical, or occupational training to provide students the necessary skills to meet individual, local, and/or state employment needs; and
- 4) community education and public services needed to serve the local population.

The community colleges provide various student activities, recreation, athletic events, musical and cultural activities, counseling, remedial testing, tutorial assistance, and job placement services. In addition, each community college serves as an important educational resource to the district. There is broad citizen participation in workshops, seminars, forums, and cultural enrichment programs designed to meet the interests and needs of the region served. The community college facilities are also used by the University System to provide workshops, seminars, and upper division or graduate courses which are brought to the region.

Table 20-2 shows the approved educational programs offered at each community college.

TABLE 21-2  
Approved Programs at the Community Colleges

PROGRAM TYPE	S P E C I F I C P R O G R A M S		
	DAWSON COMMUNITY COLLEGE	FLATHEAD VALLEY COMMUNITY COLLEGE	MILES COMMUNITY COLLEGE
Associate of Arts	Offered	Offered	Offered
Associate of Science	Not offered	Offered	Not Offered
Associate of Applied Science	Agri-Business Business Mgmt. Human Services Land Surveying Law Enforcement Secretarial Science	Business Education/ Secretarial Forest Technology Land Surveying Human Services Agri-Science	Auto Mechanics Data Processing Electronic Tech. Legal Secretary Medical Secretary Mid-Management Nursing (RN) Power Plant Tech. Secretarial Sci.
Certificate Programs	Agri-mechanics Technology Clerk-Typist Livestock Tech. Secretarial Science Petroleum Tech.	Not offered	Auto Mechanics Clerk-Typist Electronics Farm & Ranch Opr. Stenography
Nondegree Programs	Business Management		Farm & Ranch Opr.

An associate degree is awarded upon the completion of ninety quarter credits of required and elective courses. Certificate programs may vary in length, but certificates are typically awarded after forty-five quarter credits or one academic year of study.

Table 21-3 indicates the numbers of associate degrees and certificates awarded through community colleges in 1984-85.

TABLE 21-3  
Community College Degrees  
and Certificates Awarded  
1984-85

COMMUNITY COLLEGE	NUMBER AWARDED	
	ASSOCIATE DEGREES	CERTIFICATES
Dawson Community College	84	30
Flathead Valley Community College	111	0
Miles Community College	90	28

Over the past several years, the community colleges have worked with the various units of the University System to develop articulation agreements designed to facilitate student transfer. These agreements have resolved a number of transfer issues, but more effort is needed in light of the changing general education requirements in the University System units. It appears essential to establish an interunit task force to address transfer policies. The goal should be to assure comparable content in a transfer associate degree so it will be accepted as meeting all freshman and sophomore general education requirements.

Table 21-4 lists the enrollment at each community college for the past five years. The significant difference between headcount and FTE enrollments occurs because the community colleges serve a large number of part-time adult students.



TABLE 21-4  
Community College Enrollment

PERIOD COVERED	ENROLLMENT		
	DCC	FVCC	MCC
<u>Head Count</u>			
Fall 1985	786	2,031	720
Fall 1984	761	1,956	867
Fall 1983	749	1,874	1,146
Fall 1982	690	1,808	1,035
Fall 1981	608	1,663	1,091
<u>FTE</u>			
Fall 1985	500	899	424
Fall 1984	462	853	467
Fall 1983	406	770	634
Fall 1982	388	792	594
Fall 1981	340	815	610
<u>FYFTE</u>			
1985-86	481	947	436
1984-85	454	860	466
1983-84	390	802	621
1982-83	400	812	617
1981-82	332	775	581

Each of the three community colleges has established community college education centers. Dawson has centers in Sidney and Baker which enrolled 16 FTE students in 1985-86. Miles Community College has a center in Colstrip which enrolled 20 FTE students in 1985-86. Flathead Valley Community College has a center at Libby which enrolled 59 FYFTE students this past year.

The development of community colleges in the United States has been a highly successful movement. This success is partially due to the location of many community colleges in larger population centers and partially because these institutions are able to operate at a lower cost-per-student than four-year institutions. Costs are lower because

- 1) faculty are not required to hold terminal degrees;
- 2) expensive equipment needed for upper division courses is not required;

- 3) released time is not provided for research; and
- 4) a number of community-based citizens are used as part-time instructors.

The three state-supported community colleges in Montana have FTE enrollments ranging from 436 to 947 students. Cost-per-student ranges from \$3,022 to \$3,954 compared to the lowest per student cost in the University System, \$4,900.

#### Recommendation

Montana could have chosen to establish community colleges instead of the number of four-year institutions that now exist. If that path had been chosen, the total cost of higher education would be less than attempting to serve the majority of lower division students in four-year institutions. Conversion of some of the existing colleges to community colleges is still a viable alternative from the standpoint of both cost and geographical access. All of the current institutions of higher education do serve as community colleges to their local communities. Unfortunately, as important as this role is, it is not cost-effective in a four-year institutional setting.

The Board should consider the alternative of conversion of some of the four-year institutions to community colleges. Such institutions can be cost-effective with fewer students. If the Board chooses the option of conversion of some of the campuses to community college status, it would be highly desirable for those institutions to have strong affiliation agreements with Eastern Montana College and the two universities. This would assure continuity for those students seeking four-year degrees.

This option also gives rise to another alternative for merging the vocational-technical centers with the converted two-year campuses. For example, the Billings Center could be closed because of the presence of EMC. Both Dawson Community College and

Miles Community College have sufficient programs to serve eastern Montana's needs in vocational-technical education. The first two years of collegiate work at Montana Tech could be retained, and the Butte vocational-technical center could be merged into that unit. Because of the presence of UM in Missoula, the Missoula center could be closed and the programs merged into the community college unit in Dillon.

The center at Great Falls and the community college at Havre could be jointly administered, as could the center in Helena and the community college in Butte.

If the Board decided to pursue the above alternatives, it would be necessary to work with the legislature to

- 1) transfer authority for post-secondary vocational-technical education to the Board of Regents;
- 2) establish community college districts for the newly-created colleges and modify the size of the three existing districts to create six districts encompassing all of the state's counties as shown in Figure 21-1;
- 3) provide for funding for the community colleges at the ratio of 50 percent state/50 percent local, on a formula similar to the existing procedures. (Some changes are needed in existing law to correct the problems with general fund offset by increases in tuition.)

Montana's economy will continue to be heavily dependent upon existing natural resources, and the Bureau of Mines is vital to the extraction industries. Therefore, the Bureau should remain on the Butte campus and should be supported at an increased level so it can properly fulfill its mission. It can effectively operate even though Montana Tech would not be continued as a four-year institution. Consideration should also be given to utilizing existing research laboratories at Montana Tech in conjunction with

Bureau facilities to create a post-graduate extraction industries research center. The center would act as a magnet for economic development and would provide an opportunity for advanced research. Although degrees would not be awarded by the center, work at the center would be a basis for graduate theses.

The baccalaureate and master's programs in mining, minerals processing, and petroleum engineering should be reviewed to determine if it is feasible to provide these programs through interstate contracts via WICHE, or to move them to Montana State University.



Impact

Conservatively, it can be assumed that at least \$1,000 in general fund appropriation per student could be saved as a result of converting a four-year institution to a two-year institution. Students would also benefit because lower tuition and fees would be required. For example, community college tuition and fees for 1986-87 is approximately \$484 per year for a full-time student compared to \$1,350 in the University System. Conversion to community colleges would allow continued use of existing facilities, while achieving cost reductions ranging between \$1,000,000 to \$3,000,000.

The proposed statewide community college system, as shown in Figure 21-1, provides for six districts with total taxable value as given in Table 21-5. The taxable value for the individual counties is shown in Figure 21-1.

TABLE 21-5  
District Taxable Value for Proposed  
Community College Districts

DISTRICT	VALUE*
Dawson (Glendive)	\$506,500,000
Havre/Great Falls	453,300,000
Miles City	441,300,000
Dillon	377,200,000
Flathead Valley (Kalispell)	327,200,000
Butte/Helena	\$264,500,000

\*Value based on 1985-86 taxable value.

APPENDIX A

