

Montana University System
PROGRAM REVIEW

Institution: Montana Tech

Program Years: AY 08-09 through AY 14-15

List of the programs reviewed:

Associate of Science (A.S.) degree in Nursing

Decision(s) concerning the future of the program(s), based on the program review criteria established at the campus:

The A.S. degree in nursing is being phased out

Rationale or justification for the decision based on the program review process established at the campus. Include graduation numbers and student majors for each of the last seven (7) years for every program under review.

- In the spring of 2015 the Board of Regents approved a generic (4-year) B.S. nursing program at Montana Tech.
- As the B.S. nursing program comes on-line the A.S. in nursing is being phased out allowing all of the A.S. nursing students to complete the program. It is important to ensure that this program remain accredited as the A.S. nursing students complete their degree.
- Montana Tech will continue to accept A.S. nursing graduates from other schools who are registered nurses into a B.S. bridge program.

Majors	Fall 2011	Fall 2012	Fall 2013	Fall 2014	Fall 2015
	73	67	69	70	75

Graduates	AY 10-11	AY 11-12	AY 12-13	AY 13-14	AY 14-15
	36	31	34	27	37

Montana University System
PROGRAM REVIEW

Institution: Montana Tech

Program Years: AY 08-09 through AY 14-15

List of the programs reviewed:

B.S. degree in Chemistry

Decision(s) concerning the future of the program(s), based on the program review criteria established at the campus:

Retain the program

Rationale or justification for the decision based on the program review process established at the campus. Include graduation numbers and student majors for each of the last seven (7) years for every program under review.

- The department provides a tremendous service load to other campus programs. This program delivered an average of 1925 student credits hours of instruction over the last five years.
- The program has strong placement of graduates in industry, governmental, and graduate programs. From 2008-09 through 2012-13 this program reported a 97% average placement.
- The program offers students options in biochemistry, environmental chemistry, geochemistry, and professional chemistry.
- The professional option is certified by American Chemical Society (ACS).
- The chemistry faculty are research active with over \$60,000 in active research grants in FY16 sponsored by the US Department of the Interior, the National Science Foundation, and the National Institutes of Health and 29 peer reviewed articles published since 2011.

Majors	Fall 2009	Fall 2010	Fall 2011	Fall 2012	Fall 2013	Fall 2014	Fall 2015
	42	45	41	28	29	26	28

Graduates	AY 08-09	AY 09-10	AY 10-11	AY 11-12	AY 12-13	AY 13-14	AY 14-15
	7	6	6	5	6	4	6

Montana University System
PROGRAM REVIEW

Institution: Montana Tech

Program Years: AY 08-09 through AY 14-15

List of the programs reviewed:

B.S. degrees in Computer Science and Software Engineering (Note - these programs share faculty and most other resources within the organizational control of the Computer Science Department)

Decision(s) concerning the future of the program(s), based on the program review criteria established at the campus:

Retain both the computer science (CS) and software engineering (SE) programs

Rationale or justification for the decision based on the program review process established at the campus. Include graduation numbers and student majors for each of the last seven (7) years for every program under review.

- The CS and SE programs are integral to Montana Tech’s mission and other programs.
- The Computer Science Department provides a significant service load to other campus programs. The CS program delivered an average of 793 student credits hours of instruction over the last five years.
- Both programs have strong placement of graduates in industry, governmental, and graduate programs. From 2008-09 through 2015-16 both the CS & SE programs reported a 100% average placement.
- The computer science and software engineering programs are accredited by ABET.
- Computer science and software engineering faculty members are research active with over \$16,000 in an active research grant in FY16 sponsored by the National Science Foundation and 22 peer reviewed articles or proceedings published since 2011.

Majors	Fall 2009	Fall 2010	Fall 2011	Fall 2012	Fall 2013	Fall 2014	Fall 2015
computer science	27	28	26	34	31	40	49
software engineering	26	20	22	24	27	32	23

Graduates	AY 08-09	AY 09-10	AY 10-11	AY 11-12	AY 12-13	AY 13-14	AY 14-15
computer science	4	2	3	5	4	5	8
software engineering	3	3	1	4	5	3	5

Montana University System
PROGRAM REVIEW

Institution: Montana Tech of the University of Montana

Program Years: 2009-2015

List of the programs reviewed:

Bachelor of Science in Geological Engineering (GEOE)

Decision(s) concerning the future of the program(s), based on the program review criteria established at the campus:

Retain the GEOE degree in our degree portfolio

Rationale or justification for the decision based on the program review process established at the campus. Include graduation numbers and student majors for each of the last seven (7) years for every program under review.

- The GEOE program is one of Montana Tech’s founding programs.
- Montana Tech has one of the 13 Geological Engineering B.S. degrees in the United States.
- Faculty members in this department teach Physical Geology (GEO 101), a core class in the Freshman Engineering program.
- The number of Majors fell in Fall 2014 because freshmen were no longer counted.

Majors	Fall 2009	Fall 2010	Fall 2011	Fall 2012	Fall 2013	Fall 2014	Fall 2015
GEOE B.S.	32	39	46	50	43	34	34

Graduates	AY 08-09	AY 09-10	AY 10-11	AY 11-12	AY 12-13	AY 13-14	AY 14-15
GEOE B.S.	10	8	5	3	13	8	5

Montana University System
PROGRAM REVIEW

Institution: Montana Tech of The University of Montana

Program Years: 2010-2016

List of the programs reviewed:

Bachelor of Science in Geophysical Engineering

Decision(s) concerning the future of the program(s), based on the program review criteria established at the campus:

Retain the B.S. Degree in Geophysical Engineering in our degree portfolio.

Rationale or justification for the decision based on the program review process established at the campus. Include graduation numbers and student majors for each of the last seven (7) years for every program under review.

- The Bachelor’s degree in Geophysical Engineering supports Montana Tech’s Mission Statement, Strategic Plan, as well as the MUS’s Strategic Plan.
- Montana Tech has one of the two ABET accredited Geophysical Engineering Degrees in the United States.
- Faculty members in this department teach the service physics courses at Montana Tech, and, as a consequence, the department maintains a high student to faculty ratio.
- Faculty members in this department support the growing Geoscience MS program.
- This is one of Montana Tech’s Heritage programs in resource engineering.

Majors	Fall 2010	Fall 2011	Fall 2012	Fall 2013	Fall 2014	Fall 2015	Fall 2016
	17	14	16	14	11	16	16

Graduates	AY 09-10	AY 10-11	AY 11-12	AY 12-13	AY 13-14	AY 14-15	AY 15-16
	4	6	2	2	3	2	4

Montana University System
PROGRAM REVIEW

Institution: Montana Tech

Program Years: 2010-2016

List of the programs reviewed:

Master of Science in Geosciences

Decision(s) concerning the future of the program(s), based on the program review criteria established at the campus:

Retain the Master of Science Degree in Geosciences.

Rationale or justification for the decision based on the program review process established at the campus. Include graduation numbers and student majors for each of the last seven (7) years for every program under review.

- The Master of Science degree program in Geosciences strongly supports Montana Tech’s mission and strategic plan, as well as the Montana University System Strategic Plan and the Montana Science & Technology Plan.
- The degree program involves research-active faculty in three departments, offers six concentrations (geology, geochemistry, geological engineering, geophysical engineering, hydrogeology, and hydrogeological engineering), and often contributes to the Montana Bureau of Mines & Geology.
- The vast majority of geoscience master’s students do field-intensive research projects related to natural resources or water resources in Montana, resulting in master’s theses, papers, or project reports that are published in peer-reviewed journals, in the Pro-Quest repository, and/or on Montana Tech’s Digital Commons site, making them available to the public.
- Geoscience graduate students assist with instruction in several key undergraduate courses in physics, chemistry, and geology that are required for many undergraduate programs.
- The program has the second highest enrollment of all Montana Tech graduate programs, high completion rates, stronger than average diversity, and its courses serve graduate students and advanced undergraduates in many other degree programs.

Geoscience MS	Fall 2010	Fall 2011	Fall 2012	Fall 2013	Fall 2014	Fall 2015	*Fall 2016
Enrollment	22	26	20	29	41	38	38
% Full time	73%	62%	75%	69%	68%	74%	66%
% Female	55%	50%	30%	38%	41%	39%	32%
% Underrep. Min†	5%	8%	5%	10%	7%	5%	8%
% International	5%	4%		7%	10%	16%	13%
MT residents	59%	69%	75%	69%	68%	58%	55%
Completions	AY 09-10	AY 10-11	AY 11-12	AY 12-13	AY 13-15	AY 14-15	*AY 15-16
Graduates	4	9	15	3	8	14	11
% Employed‡	100%	100%	100%	NA	NA	NA	NA

† Based on self identification.

* Preliminary numbers.

‡ Includes pursuit of further education.

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PROGRAM REVIEW

Institution: Montana Tech

Program Years: AY 08-09 through AY 14-15

List of the programs reviewed:

B.S. degree in Professional and Technical Communication (PTC)

M.S. degree in Technical Communication (TC)

(Note - these programs share faculty and most other resources within the organizational control of the Technical Communication Department)

Decision(s) concerning the future of the program(s), based on the program review criteria established at the campus:

Retain both of these programs, but require PTC to develop, execute, and measure the effect of a plan to increase enrollment in the B.S. degree

Rationale or justification for the decision based on the program review process established at the campus. Include graduation numbers and student majors for each of the last seven (7) years for every program under review.

- The B.S. in PTC and the M.S. in TC degrees complement the mission of Montana Tech.
- While enrollments in the undergraduate PTC, Society and Technology (STS), are small, generally less than 20 students and often less than 10, faculty associated with these programs routinely teach other courses (e.g., ethics and writing) that satisfy general education requirements or are formally in the curricula of other programs.
- Graduates from 2008 through 2012 reported a 90% average placement.

Majors	Fall 2009	Fall 2010	Fall 2011	Fall 2012	Fall 2013	Fall 2014	Fall 2015
B.S. in PTC	27	23	25	21	19	23	26
M.S. in TC	13	9	11	7	8	6	7

Graduates	AY 08-09	AY 09-10	AY 10-11	AY 11-12	AY 12-13	AY 13-14	AY 14-15
B.S. in PTC	5	4	4	5	2	4	6
M.S. in TC	4	4	3	3	4	1	2

Montana University System
PROGRAM REVIEW

Institution: Montana Tech – Highlands College

Program Years: 2015-2016

List of the programs reviewed:

Accounting Technology (AAS)

Decision(s) concerning the future of the program(s), based on the program review criteria established at the campus:

Retain the degree.

Rationale or justification for the decision based on the program review process established at the campus. Include graduation numbers and student majors for each of the last seven (7) years for every program under review.

The Accounting Technology Program conducted a Program Review for the purposes of the upcoming 7-year visit by the Northwest Commission on Colleges and Universities. The Accounting Technology Program has had reasonably consistent enrollment and graduates during the past five academic years. (See the tables below.)

Fall Enrollment					
	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
AAS Accounting Technology	41	40	41	38	31
Degrees and Certificates Awarded					
	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
AAS Accounting Technology	11	17	11	17	12

The program’s faculty have the appropriate credentials and have opportunities for professional development and have participated in research, creative and scholarly activities with their students making presentations at Highlands College, Montana Tech and at the Student Research Day for Two-Year Colleges.

In light of the data above, our conclusion is that the Accounting Technology Program serves a continuing role assisting mostly small businesses in the five counties surrounding Butte and Highlands College.

Montana University System
PROGRAM REVIEW

Institution: Montana Tech – Highlands College

Program Years: 2015-2016

List of the programs reviewed:

Automotive (CAS)

Decision(s) concerning the future of the program(s), based on the program review criteria established at the campus:

Retain the degree.

Rationale or justification for the decision based on the program review process established at the campus. Include graduation numbers and student majors for each of the last seven (7) years for every program under review.

The Automotive Program is one of the programs within the Highlands College Trades & Technical Department. The faculty conducted a Program Review for the purposes of the upcoming 7-year visit by the Northwest Commission on Colleges and Universities. The Automotive Program has seen a decline in both enrollment and graduates during the past five academic years. (See the tables below.)

The Automotive Program has both a one-year program resulting in a CAS as well as a two-year program resulting in an AAS degree. This review is only of the one-year program.

Fall Enrollment					
	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
CERTAS Automotive Technology	12	19	15	11	10
Degrees and Certificates Awarded					
	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
CERTAS Automotive Technology		4	2		2

The reasons for the program’s numbers fluctuation has been the evolution of the faculty in the program and the program itself. There was a retirement of a longtime faculty member and the hiring of a new faculty member. This transition is always a tenuous time for any program.

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It is notable that many of our students are choosing to take both years of the program to earn the AAS in Automotive Technology. Thus they will be applying for graduation from the AAS program and not the CAS program (because they do not want to pay separate graduation fees).

It is notable that the Montana Department of Labor and Industry projects that in Montana there will be an 9.1% increase needed in this area. This bodes well for the future of Automotive repair industry generally.

The program's faculty have the appropriate credentials and have opportunities for professional development and have participated in research, creative and scholarly activities with their students making presentations at Highlands College, Montana Tech and at the Student Research Day for Two-Year Colleges.

In light of the data above, our conclusion is that the Automotive Program serves a continuing need in Butte and the surrounding region and thus conclude to retain the program.

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PROGRAM REVIEW

Institution: Montana Tech – Highlands College

Program Years: 2015-2016

List of the programs reviewed:

Bookkeeping (CERTAS)

Decision(s) concerning the future of the program(s), based on the program review criteria established at the campus:

Retain the degree.

Rationale or justification for the decision based on the program review process established at the campus. Include graduation numbers and student majors for each of the last seven (7) years for every program under review.

The Bookkeeping Program is one of the programs in the Highlands College Business and Accounting Technology Department, specifically in the Accounting Technology for both the Health Services and Human Resources Options. This program is part of a “laddered process” (which means it can be a “ladder step” to a higher degree). This program has been intended to be utilized in the case of a student who needs to “stop out” after one year so that they would at least have some kind of credential for their year of work. Most students do not stop out and thus move on to earn the AAS in Accounting Technology. A review of the data indicates a very low level of both enrollment and graduates during the past five academic years. (See the tables below.)

Fall Enrollment					
	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
CERTAS Bookkeeping		1			
Degrees and Certificates Awarded					
	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
CERTAS Bookkeeping			1		

It is notable that the Montana Department of Labor and Industry projects that in Montana there will be a 14.3% increase needed in this area. While this seemingly would bode well for the future of the bookkeeping industry generally, student interest appears to be greater than just bookkeeping specifically.

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PROGRAM REVIEW

The program's faculty have the appropriate credentials and have opportunities for professional development and have participated in research, creative and scholarly activities with their students making presentations at Highlands College, Montana Tech and at the Student Research Day for Two-Year Colleges.

It is further notable that this "stop out" degree consists of the first year of the AAS program and thus does not have any extra costs associated with it. Given that this degree, as part of the "laddered process" which can help a student "step" to a higher degree, our conclusion is that the Bookkeeping Program should be retained.

Montana University System
PROGRAM REVIEW

Institution: Montana Tech – Highlands College

Program Years: 2015-2016

List of the programs reviewed:

Historic Preservation (AAS)

Decision(s) concerning the future of the program(s), based on the program review criteria established at the campus:

Retain the degree for another year but during that time review for its future existence.

Rationale or justification for the decision based on the program review process established at the campus. Include graduation numbers and student majors for each of the last seven (7) years for every program under review.

The Historic Preservation Program is connected to and part of the Construction/Carpentry Program. The faculty conducted a Program Review for the purposes of the upcoming 7-year visit by the Northwest Commission on Colleges and Universities. The Historic Preservation Program has struggled with both enrollment and graduates during the past five academic years. (See the tables below.)

Fall Enrollment					
	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
AAS Historic Preservation	1	2	1	1	4
Degrees and Certificates Awarded					
	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
AAS Historic Preservation		2			2

The reasons for the program’s struggle have been numerous including, most prominently, the downturn in the economy, which hit the construction world very hard in Montana. Additionally, the recovery from the recession has been very slow, especially in Construction. Historic Preservation, as a variation on the Construction discipline, has experienced similar issues. One of the additional problems in Historic Preservation is that, notwithstanding the intense need for this discipline in historic Butte, many property owners do not have funds for preservation activities.

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It is notable that the Montana Department of Labor and Industry projects that in Montana there will be a 36% increase (an additional 9,049 jobs) needed in the construction industry. This bodes well for the future of Construction generally and Historic Preservation specifically.

The program's faculty have the appropriate credentials and have opportunities for professional development and have participated in research, creative and scholarly activities with their students making presentations at Highlands College, Montana Tech and at the Student Research Day for Two-Year Colleges.

In light of the data above, our conclusion is that the Historic Preservation Program serves a continuing need in Butte, but given the disciplinary struggles, it is prudent to take this next year to evaluate the future of the program.

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PROGRAM REVIEW

Institution: Montana Tech – Highlands College

Program Years: 2015-2016

List of the programs reviewed:

Medical Assistant (AAS)

Decision(s) concerning the future of the program(s), based on the program review criteria established at the campus:

Retain the degree.

Rationale or justification for the decision based on the program review process established at the campus. Include graduation numbers and student majors for each of the last seven (7) years for every program under review.

The Medical Assistant Program is one of the programs in the Highlands College Health Programs Department. The faculty conducted a Program Review for the purposes of the upcoming 7-year visit by the Northwest Commission on Colleges and Universities. The Medical Assistant Program has seen a decline in both enrollment and graduates during the past five academic years. (See the tables below.)

Fall Enrollment					
	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
AAS Medical Assistant	36	37	40	28	29
Degrees and Certificates Awarded					
	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
AAS Medical Assistant	10	10	13	6	6

The reasons for the program's numbers have been numerous including: 1) the fact that entrance requirements have become more rigorous; 2) most of the local clinic sites utilized by the program have over the years become the most appropriate and superior sites for our students' clinic placements (the number of these sites is limited in our geographic area).

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Unlike nurses, who generally work in hospitals and focus mainly on providing medical nursing care, medical assistants work in ambulatory clinics or with sole medical doctors. The majority of the Highlands College Medical Assistant graduates are providing valuable assistance to the clinics and sole medical doctors because they are educated to handle not only the “back office” clinical procedures but also the “front office” administrative duties including: scheduling, billing and other non-medical needs of the practice.

In the past two graduating classes, every Medical Assistant graduate who wanted a Medical Assistant job found employment before graduation. It is notable that for those graduates who have taken a national certification exam, Highlands College pass rate has been 100%.

Many of Highlands College Medical Assistant AAS degree graduates have gone on to complete bachelor’s degrees in Occupational Safety & Health, Accounting, Criminal Justice, among others. In fact, one of our Medical Assistant graduates now works for the Federal Bureau of Investigation.

It is further notable that the rigorous nature of the program has resulted in some students’ inability to meet the standards and either dropped out or were removed from the program. In our opinion, this is an indicator of excellence and not a detractor.

It is notable that the medical assistant discipline has been included in the well-known Montana Healthcare Grant. One of the goals of the grant, of course, is to increase the numbers of students in the programs.

It is notable that the Montana Department of Labor and Industry projects that in Montana there will be a 23% increase needed in this area, higher than the average for all occupations. This bodes well for the future of Health Programs generally and Medical Assistants specifically.

The program’s faculty have the appropriate credentials and have opportunities for professional development and have participated in research, creative and scholarly activities with their students making presentations at Highlands College, Montana Tech and at the Student Research Day for Two-Year Colleges.

In light of the data above, our conclusion is that the Medical Assistant Program serves a continuing need in Butte and surrounding region and thus we will retain the program.

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Institution: Montana Tech – Highlands College

Program Years: 2015-2016

List of the programs reviewed:

Medical Receptionist (CERTAS)

Decision(s) concerning the future of the program(s), based on the program review criteria established at the campus:

Retain the degree

Rationale or justification for the decision based on the program review process established at the campus. Include graduation numbers and student majors for each of the last seven (7) years for every program under review.

The Medical Receptionist certificate is one of the programs in the Highlands College Business Technology Department, specifically, part of the Business Technology Medical Office Specialist Option. This program is part of a “laddered process” (which means it can be a “ladder step” to a higher degree). The program has been intended to be utilized in the case of a student who needs/wants to “opt out” after one year so that he/she would at least have some kind of credential for his/her year of work. Most students do not opt out and instead move on to earn the AAS in the medical office specialist option in Business Technology. A review of the data indicates a very low level of both enrollment and graduates during the past five academic years. (See the tables below.)

Fall Enrollment					
	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
CERTAS Medical Receptionist					
Degrees and Certificates Awarded					
	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
CERTAS Medical Receptionist	1	1			

It is notable that the Montana Department of Labor and Industry projects that in Montana there will be a 26.2% increase needed in this area. While this seemingly would bode well for the future of the medical receptionist industry generally, student interest appears to be greater than just this area specifically.

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The program's faculty have the appropriate credentials and have opportunities for professional development and have participated in research, creative and scholarly activities with their students making presentations at Highlands College, Montana Tech and at the Student Research Day for Two-Year Colleges.

It is further notable that this "opt out" certificate consists of the first year of the AAS program and thus does not have any extra costs associated with it. Given that this certificate, as part of the "laddered process" which can help a student "step" to a higher degree, our conclusion is that the Medical Receptionist Program should be retained.

Montana University System
PROGRAM REVIEW

Institution: **Montana Tech – Highlands College**

Program Years: **2015-2016**

List of the programs reviewed:

Metals Fabrication (AAS)

Decision(s) concerning the future of the program(s), based on the program review criteria established at the campus:

Retain the degree.

Rationale or justification for the decision based on the program review process established at the campus. Include graduation numbers and student majors for each of the last seven (7) years for every program under review.

The Metals Fabrication Program is one of the programs in the Highlands College Trades & Technical Department. The faculty conducted a Program Review for the purposes of the upcoming 7-year visit by the Northwest Commission on Colleges and Universities. The Metals Fabrication Program has seen a decline in both enrollment and graduates during the past five academic years. (See the tables below.)

The Metals Fabrication Program is a two-year program resulting in an AAS degree which covers subjects in welding and machining.

Fall Enrollment					
	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
AAS Metals Fabrication	41	48	50	23	6
Degrees and Certificates Awarded					
	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016
AAS Metals Fabrication	10	14	13	14	10

The reasons for the program’s numbers fluctuation have surrounded its involvement in the Montana Rev Up Grant. When the RevUp Grant started 3 years ago, the goal of the grant was to create programs that were shorter, thereby allowing students to graduate quicker and join the workforce quicker. In compliance with

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the Grant, Highlands College created one-year CAS programs in Welding and Machining. As those one-year programs rose in numbers, there was a reduction in the numbers in the two-year Metals Fabrication Program.

It is notable that many of our students are choosing to take both CAS programs (Welding and Machining). If this trend is maintained, the number of graduates should increase.

It is notable that the Montana Department of Labor and Industry projects that in Montana there will be an 8.8% increase needed in this area. This bodes well for the future of metals fabrication industry generally.

The program's faculty have the appropriate credentials and have opportunities for professional development and have participated in research, creative and scholarly activities with their students making presentations at Highlands College, Montana Tech and at the Student Research Day for Two-Year Colleges.

In light of the data above, our conclusion is that the Metals Fabrication Program serves a continuing need in Butte and surrounding region and thus conclude to retain the program.