Montana University System

PROGRAM REVIEW

Institution: **Montana State University**

Program Years: **AY2019-AY2025**

List of the programs reviewed:

Education - Graduate programs

Microbiology and Cell Biology

Native American Studies

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

See individual unit reports

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.

See individual unit reports

Montana University System

PROGRAM REVIEW

Institution/Department: **Montana State University – Education Graduate Programs**

Years Under Review: **AY2019-AY2024**

List of programs reviewed and decision(s) concerning the future of the program(s), based on the program review criteria established at the campus: Chose from Continue, Continue with Modifications, Discontinue

PROGRAM	DECISION
College Teaching, Library Media, School Supintendent, Cultural & Linguistic Diversity; Certificates	continue
Elementary Education, BS	continue
Secondary Education – Social Studies, BS	continue
Secondary Education – General Science, BS	continue
Adult and Higher Education, MEd, EdS, EdD, PhD	continue with modifications to MEd
Curriculum and Instruction, MEd, EdS, EdD, PhD	continue with modifications

Rationale or justification for the decision based on the program review process established at the campus.

Undergraduate education programs were reviewed during reaccredition by the Council for the Accreditation of Educator Preparation on April 21, 2024. Accreditation ends June 30, 2030

Graduate education programs were reviewed via an MSU Program Review process including an on-site peer review team visit on March 2-3, 2026 and subsequent letter of recommendation by the college Dean Seifert.

1. **Provide a high level overview of the programs' assessment of programmatic learning outcomes.**

The graduate programs under review, Adult and Higher Education (AHE) and Curriculum and Instruction (C&I), have established program learning outcomes (PLOs) that are intentionally aligned with curriculum, key assessment points, and degree expectations. Assessment is used not only to document student achievement, but also to drive program improvement and curriculum refinement.

The review team found that both programs have well-aligned curricula and assessment systems, with evidence that students are achieving program learning outcomes. Assessment results are actively used to inform curriculum revisions, advising practices, degree pathways, and student support structures. The programs demonstrate a strong commitment to continuous improvement through data-driven decision-making and ongoing evaluation of student learning.

Findings that have lead to continuous improvement efforts include piloting a professional paper option for Masters students, revising doctoral comprehensive examination, and refining advising and course rotation.

In particular, modifications in the future will include renaming the Curriculum and Instruction option to align with current professional language; consistently communicate the purpose and value of each of the graduate degree programs (M.Ed., Ed.S., Ed.D., and Ph.D.); and expand online delivery options to increase access (MEd in Adult and Higher Education).

2. **What is the alignment of these programs with the institution's strategic plan? (i.e. university mission, vision, values, and/or goals)**

The programs demonstrate strong alignment with both the Department of Education mission and vision and Montana State University's strategic plan, Choosing Promise. The self-study explicitly states that the department's strategic plan was developed to align with institutional priorities and Montana's evolving educational workforce needs.

The Education graduate programs support MSU's land-grant mission by:

- Preparing educators, educational leaders, scholars, and administrators who serve communities throughout Montana and beyond.
- Providing access to graduate education for place-bound students through online and distance-delivery options.
- Partnering with schools, community colleges, Tribal Colleges, and educational organizations across the state.
- Producing research that addresses real-world educational challenges facing Montana communities.

The external review team specifically noted that the programs are "well positioned within Montana State University's land-grant mission" and maintain a strong commitment to serving educators, schools, and communities throughout Montana.

The dean's review letter further recognizes the department's commitment to "nimbly and strategically addressing workforce development and learning" and advancing a vision where "research-driven innovation transforms learning, leadership, and community well-being."

3. **Provide enrollment numbers and graduation rates for the past 7 years**

ENROLLMENT										
DEGREE	MAJOR 1, 2, 2nd DEGREE	CONCENTRATION	2018	2019	2020	2021	2022	2023	2024	2025
BS	Elementary Education		308	301	274	256	238	214	206	213

BS	Secondary Ed-Social Studies		78	71	69	68	56	51	38	40
BS	Secondary Ed General Science		36	38	30	26	28	20	17	14
TOTAL UNDERGRADUATE ENROLLMENT:			***422***	***410***	***373***	***350***	***322***	***285***	***261***	***267***
DEGREE	MAJOR	CONCENTRATION	2018	2019	2020	2021	2022	2023	2024	2025
MS	Adult and Higher Education		15	14	13	8	9	9	6	8
MS	Curriculum & Instruction		42	45	46	50	33	36	31	28
MS	Educational Leadership		47	31	25	10	36	31	25	33
MAT	Master of Arts in Teaching – Elementary				14	11	11	12	15	10
MAT	Master of Arts in Teaching – Secondary			9	11	11	10	17	21	14
EDD	Adult & Higher Ed		17	15	11	7	6	6	8	11
EDD	Curriculum & Instruction		7	8	7	12	6	6	7	6
EDD	Educational Leadership		18	21	16	20	15	11	16	13
PhD	Education		20	26	23	23	25	27	27	33

EDS	Education Specialist		15	1	0	2	0	0	2	0
CERT	College Teaching		1	3	0	1	1	0	0	2
CERT	Library Media		46	40	45	57	46	32	34	31
CERT	School Superintendent		4	2	2	0	4	4	5	4
CERT	Cultural & Linguistic Diversity									6
TOTAL GRADUATE ENROLLMENT:			***232***	***215***	***213***	***212***	***202***	***191***	***197***	***197***
TOTAL ENROLLED:			***654***	***625***	***586***	***562***	***524***	***476***	***458***	***464***
	MINOR DESCRIPTION		2018	2019	2020	2021	2022	2023	2024	2025
BS	Reading (K-12)		38	24	26	19	9	9	15	21
TOTAL MINOR ENROLLED:			38	24	26	19	9	9	15	21
AWARDED DEGREES										
DEGREE	MAJOR	CONCENTRATION	2018	2019	2020	2021	2022	2023	2024	2025
BS	Elementary Education		75	87	59	77	52	57	51	36
BS	Secondary Ed- Social Studies		14	16	11	9	19	8	11	11
BS	Secondary Ed- General Science		8	7	8	11	6	6	2	6

MS	Adult and Higher Education		4	6	4	7	3	3	2	3
MS	Curriculum & Instruction		19	12	17	22	10	15	16	14
MS	Educational Leadership		28	26	12	13	6	19	17	13
MAT	Master of Arts in Teaching – Elementary					11	10	11	7	7
MAT	Master of Arts in Teaching – Secondary				8	9	10	10	8	17
EDD	Adult & Higher Ed		5	3	3	4	4	0	2	0
EDD	Curriculum & Instruction		4	2	2	0	5	0	0	1
EDD	Educational Leadership		4	2	1	1	3	1	1	0
PhD	Education		2	2	0	1	4	4	4	2
EDS	Education Specialist		2	12	0	0	0	2	0	1
CERT	College Teaching		3	7	6	0	5	4	0	4
CERT	Library Media		19	15	20	28	14	12	13	14
CERT	School Superintendent		0	2	1	0	0	2	4	1
CERT	Cultural & Linguistic Diversity		*Not yet available; newly reinstated certificate program.							
TOTAL DEGREES AWARDED:			***187***	***201***	***151***	***192***	***150***	***154***	***123***	***131***

AWARDED MINORS										
	MINOR DESCRIPTION		2018	2019	2020	2021	2022	2023	2024	2025
BS	Reading (K-12)		23	8	12	10	3	3	5	0
TOTAL MINORS AWARDED:			23	8	12	10	3	3	5	0

Montana University System

PROGRAM REVIEW

Institution/Department: **Montana State University – Microbiology and Cell Biology**

Years Under Review: **AY2019-AY2024**

List of programs reviewed and decision(s) concerning the future of the program(s), based on the program review criteria established at the campus: Chose from Continue, Continue with Modifications, Discontinue

PROGRAM	DECISION
Bacc Cert – Pre-Vet Med Certificate	Continue
BS - Microbiology	Continue
BS – Microbiology – Medical Lab Sciences	Continue
BS – Microbiology – Environmental Health	Continue with modifications
BS - Biotechnology	Continue
BS – Cell Biology & Neuroscience – Biomedical Sciences	Continue
MS – Biological Sciences	Continue with modifications
MS – Microbiology & Immunology	Continue
MS – Health Sciences	Continue with modifications
PhD – Biological Sciences	Continue with modifications
PhD – Microbiology & Immunology	Continue
Minor – Astrobiology (non-teaching)	Continue
Minor – Genetics (non-teaching)	Continue
Minor – Global Health (non-teaching)	Continue
Minor – Microbiology (non-teaching)	Continue
BS – Cell Biology & Neuroscience - Neuroscience	Discontinued
MS – Immunology & Infectious Diseases	Discontinued
MS - Microbiology	Discontinued

PhD – Immunology & Infectious Diseases	Discontinued
PhD - Microbiology	Discontinued
PhD – Neuroscience	Discontinued

Rationale or justification for the decision based on the program review process established at the campus.

Programs were reviewed via an MSU Program Review process including an on-site peer review team visit on April 9-10, 2026 and subsequent letter of recommendation by the college Dean Bajwa.

The Department of Microbiology & Cell Biology (MCB) has made significant progress in developing a more focused and systematic assessment framework since the 2019 merger of the former departments. The assessment process reflects a transition from a large and complex set of outcomes toward a more manageable and meaningful structure designed to support continuous improvement. Subsequently, relevant degree programs have been assessed and merged or discontinued. Teach out of these programs are evident in the enrollment and graduation data.

Expectations for programs noted with 'continue with modifications' include: 1) Reviewing the department's participation in the MS & PhD in Biological Sciences programs to determine whether withdrawing from these cross-college programs and concentrating graduate education within the department's remaining graduate programs would better support its mission and priorities. 2) Evaluating the department's role in the M.S. in Health Sciences program, with particular attention to opportunities for program renewal and revitalization. 3) Recognizing that the former B.S. in Microbiology, Environmental Health Option, has already been transitioned to the B.S. in Environmental Sciences, Environmental Health Option, within the Land Resources and Environmental Sciences Department, where enrollment has more than doubled since the change.

The next review cycle will focus on clearer program differentiation, stronger advising and assessment systems, selective investment in graduate curriculum depth, and alignment with college and university priorities in student success, research excellence, workforce development, and interdisciplinary collaboration.

1. **Provide a high level overview of the programs' assessment of programmatic learning outcomes.**

A major accomplishment during the review cycle was the reduction of approximately 180 program learning outcomes (PLOs) across the Cell Biology & Neuroscience programs to a smaller and more assessable set of outcomes. The department ultimately adopted four overarching undergraduate outcomes focused on critical evaluation of scientific literature, generation of testable scientific hypotheses, effective written and oral communication of biological concepts, and analysis and synthesis of primary scientific data.

MCB primarily uses direct assessment methods tied to coursework and capstone experiences, including research-based writing assignments, scientific presentations, written examinations, literature reviews, research methods projects, capstone seminars and workshops. The department has also developed curriculum maps linking coursework to learning outcomes, although the self-study notes that these curriculum maps are still being completed for all undergraduate programs.

The department points to several indicators demonstrating achievement of learning outcomes:

- 697 undergraduate students participated in faculty-mentored research experiences between 2019 and 2025.

- Students co-authored multiple peer-reviewed publications.
- More than 30% of MSU's Goldwater Scholars during the review period came from MCB programs.
- Graduate students contributed to more than 100 publications.
- Research-intensive courses have produced six peer-reviewed publications with undergraduate student co-authors.

These outcomes suggest students are achieving key goals related to scientific inquiry, communication, and data analysis.

Assessment findings have directly informed curricular changes and program improvement efforts, including streamlining degree requirements, reducing credit burdens, revising prerequisites, increasing capstone course availability, addressing high DFW-rate courses, modifying mathematics requirements to improve progression, placing low-performing programs (e.g., the BS in Cellbiology - Neuroscience option) into moratorium after assessment identified insufficient differentiation and weak productivity. The Dean's recommendation specifically calls for annual assessment reports that clearly identify outcomes assessed, evidence collected, results obtained, improvement actions taken, responsible parties, timelines, follow-up measures to demonstrate effectiveness.

Overall, MCB demonstrates a meaningful and maturing assessment culture. Assessment is clearly being used to support curricular improvement and student success initiatives, but the department's next stage of development should focus on closing the assessment loop by systematically documenting how assessment evidence leads to measurable improvements in student learning and program quality.

2. **What is the alignment of these programs with the institution's strategic plan? (i.e. university mission, vision, values, and/or goals)**

The MCB programs exhibit strong alignment with both the department mission and Montana State University's strategic plan, Choosing Promise, particularly in the areas of student success, research excellence, experiential learning, workforce development, and interdisciplinary collaboration.

The department's mission is to educate students, create knowledge, and serve communities by integrating learning, discovery and engagement in microbiology, immunology and cell biology. This aligns closely with MSU's land-grant mission through education of undergraduate and graduate students; creation of new knowledge through research; service to Montana communities and industries; support of healthcare, veterinary medicine, agriculture, biotechnology, and environmental stewardship. MCB strongly advances MSU's commitment to high-impact educational practices through undergraduate research experiences, internships, clinical and laboratory training, faculty mentoring, publication and conference opportunities.

MCB programs align exceptionally well with workforce needs in Montana and nationally through Medical Laboratory Science, biotechnology, veterinary medicine, environmental health, biomedical research, and healthcare professional preparation. Particularly notable are the Montana Veterinary Medicine Program, WWAMI medical education partnership, Medical Laboratory Science program, Pre-veterinary certificate. These programs directly support Montana's healthcare, agricultural, veterinary, and biotechnology workforce needs. The Dean's report specifically highlights opportunities for continued leadership in One Health, biotechnology, bioinformatics, environmental microbiology, infectious disease research, and data-intensive biology.

MCB's programs are well aligned with Montana State University's mission and strategic priorities. The strongest areas of alignment are:

1. Student success and retention, demonstrated through strong persistence and graduation outcomes.
2. Transformational learning, particularly through extensive undergraduate and graduate research opportunities.
3. Research excellence, where MCB is one of MSU's leading research units.
4. Workforce development, especially in healthcare, veterinary medicine, biotechnology, and agriculture.
5. Interdisciplinary collaboration, supporting university priorities around One Health, biomedical science, environmental systems, and data-driven biology.

The primary opportunity moving forward is to strengthen the connection between assessment results and documented program improvements so the department can more clearly demonstrate how student learning evidence drives curricular and strategic decisions.

3. Provide enrollment numbers and graduation rates for the past 7 years

ENROLLMENT									
DEGREE	MAJOR 1, 2, 2nd DEGREE	CONCENTRATION	2019	2020	2021	2022	2023	2024	2025
BS-MBEN,MBMC, MBNA, MBOA, MBOP, MBPA, MBPM, MBPV, PBPM	Microbiology		212	206	174	162	177	164	214
CertificatePVCT	Pre-Vet Med Certificate		29	24	21	26	16	8	
BS-MBCA, MBDA	Microbiology	Medical Lab Sciences	69	58	83	75	67	65	64
BS-MBEV, MBVA	Microbiology	Environmental Health	15	17	19	13	19	19	18
BS-BANS, BTMA, BTMB	Biotechnology	Animal or Microbial Systems	29	31	35	30	21	26	24
BS-CLBA	Cell Biology & Neuroscience	Biomedical Sciences	296	257	236	225	190	152	218
BS-CLNA	Cell Biology & Neuroscience	Neuroscience	35	36	39	50	42	44	11
***TOTAL UNDERGRADUATE ENROLLMENT:**			***656***	***605***	***586***	***555***	***516***	***470***	***549***
DEGREE	MAJOR	CONCENTRATION	2019	2020	2021	2022	2023	2024	2025
MS- BIOA	Biological Sciences				1	2	1	2	1
MS-IMID	Immunology and Infectious Diseases		2	1					

MS-MB, MBI	Microbiology			9	5				
MS-MBIA	Microbiology & Immunology				3	13	11	7	3
MS-HLTH	Health Sciences	Molecular Medicine or Health and Medicine					9	8	11
PhD-BIOA	Biological Sciences				1	2	2	1	4
PhD-IMID	Immunology & Infectious Diseases		7	7	5	2	2		
PhD-MB, MBI	Microbiology		33	32	30				
PhD-MBIA	Microbiology & Immunology				5	32	45	50	50
TOTAL GRADUATE ENROLLMENT:			***42***	***49***	***50***	***51***	***61***	***50***	***69***
TOTAL ENROLLED:			***698***	***654***	***636***	***606***	***577***	***520***	***618***
	MINOR DESCRIPTION		2019	2020	2021	2022	2023	2024	2025
ASBO	Astrobiology		7	6	8	15	18	15	9
GLBH	Global Health		37	38	49	35	22	20	27
GNTC	Genetics		40	44	37	35	43	25	26
MB	Microbiology		20	19	13	17	18	23	20
TOTAL MINOR ENROLLED:			***104***	***107***	***107***	***102***	***101***	***83***	***82***
AWARDED DEGREES									
DEGREE	MAJOR	CONCENTRATION	2019	2020	2021	2022	2023	2024	2025
BS-MBEN,MBMC, MBNA,	Microbiology		56	57	51	53	43	52	40

MBOA, MBOP, MBPA, MBPM, MBPV, PBPM									
BS-MBCA, MBDA	Microbiology	Medical Lab Sciences				15	13	15	15
BS-MBEV, MBVA	Microbiology	Environmental Health	2	3	4	8	4	4	8
BS-BANS, BTMA, BTMB	Biotechnology	Animal or Microbial Systems	10	6	7	6	7	8	4
BS-CLBA	Cell Biology & Neuroscience	Biomedical Sciences	44	75	73	63	53	53	46
BS-CLNA	Cell Biology & Neuroscience	Neuroscience	3	3	6	6	7	7	7
MS- BIOA	Biological Sciences								1
MS-IMID	Immunology and Infectious Diseases			2	1				
MS-MB, MBI	Microbiology		1	2	1				
MS-MBIA	Microbiology & Immunology					4	7	5	7
MS-HLTH	Health Sciences	Molecular Medicine or Health and Medicine						8	8
PhD-BIOA	Biological Sciences								
PhD-IMID	Immunology & Infectious Diseases		2	1	1	1		1	1
PhD-MB, MBI	Microbiology		6	9	3	6			
PhD-MBIA	Microbiology & Immunology					2	5	4	12

NEUA	Neuroscience					1			
NEUS	Neuroscience			1	3	1			
TOTAL DEGREES AWARDED:			***124***	***159***	***150***	***166***	***139***	***158***	***149***
AWARDED MINORS									
	MINOR DESCRIPTION		2019	2020	2021	2022	2023	2024	2025
ASBO	Astrobiology		7	3	4	1	2	6	5
GLBH	Global Health		3	11	10	24	14	14	5
GNTC	Genetics		18	9	27	13	16	17	15
MB	Microbiology		3	11	9	6	8	9	9
TOTAL MINORS AWARDED:			***62***	***68***	***100***	***88***	***80***	***92***	***66***

Montana University System

PROGRAM REVIEW

Institution/Department: **Montana State University – Native American Studies**

Years Under Review: **AY2019-AY2024**

List of programs reviewed and decision(s) concerning the future of the program(s), based on the program review criteria established at the campus: Chose from Continue, Continue with Modifications, Discontinue

PROGRAM	DECISION
MA – Native American Studies	continue
Graduate Certificate – Indigenous Food Systems	continue
Graduate Certificate – Native American Certificate	continue
Minor – Native American Studies	continue

Rationale or justification for the decision based on the program review process established at the campus.

Programs were reviewed via an MSU Program Review process including an on-site peer review team visit on April 23-24, 2026 and subsequent letter of recommendation by the college Dean Thomas.

The Department of Native American Studies offers degrees at the graduate level and an undergraduate minor, but serves an out-sized role in holistic advising of Native American/Alaska Native undergraduate students in programs across MSU.

1. **Provide a high level overview of the programs' assessment of programmatic learning outcomes.**

The Native American Studies (NAS) Department is in the midst of a significant transition from traditional learning outcomes assessment toward a more culturally grounded assessment framework guided by its accreditation through the World Indigenous Nations Higher Education Consortium (WINHEC) and the department's Student Well-Being Model (SWBM).

Since receiving provisional WINHEC accreditation in 2021, the department has shifted assessment toward Indigenous-centered measures of student learning, cultural engagement, and well-being. The department established an Internal Oversight Committee (IOC), and a Cultural Oversight Board (COB) comprised of representatives from Montana Tribal Nations. These groups provide guidance on assessment design, cultural standards, learner outcomes, and program improvement.

The department is encouraged to continue development of culturally grounded assessment and implementation of the Student Well-Being Model within graduate education. The review team encouraged continued evaluation of student outcomes and effectiveness, particularly in online delivery environments.

The review team noted that while assessment implementation is still evolving, there is evidence of, meaningful reflection on student learning, development of culturally grounded assessment practices, and alignment of assessment with Indigenous ways of knowing and community values.

2. **What is the alignment of these programs with the institution's strategic plan? (i.e. university mission, vision, values, and/or goals)**

The Native American Studies programs show exceptionally strong alignment with Montana State University's mission, strategic priorities, land-grant identity, and institutional commitments to Tribal engagement and student success. NAS plays a critical role in creating educational access and culturally relevant educational opportunities for all Indigenous students studying at MSU.

The review report explicitly notes that the department embodies MSU's responsibilities as a land-grant institutionby honoring Tribal sovereignty, supporting Native communities, fulfilling educational trust responsibilities to Tribal Nations, expanding educational access, and building reciprocal relationships with Indigenous communities. NAS' interdisciplinary structure and extensive collaborations across colleges and departments make it a particularly strong contributor to the College of Letters and Science priorities. Indigenous Food Systems initiatives, and land-based education programs further support the university's land-grant mission through applications of Indigenous science, environmental stewardship, food sovereignty, and community-based problem solving.

As part of its continued growth and commitment to undergraduate education, the Native American Studies Department, with the support of the CLS Dean, plans to propose a Bachelor of Science in Indigenous Food Systems within the next year. The proposed degree would build on existing program strengths and create new opportunities for interdisciplinary learning, research, and engagement in areas of food sovereignty, sustainability, and Indigenous knowledge systems.

3. **Provide enrollment numbers and graduation rates for the past 7 years**

ENROLLMENT										
DEGREE	MAJOR 1, 2, 2nd DEGREE	CONCENTRATION	CONC	2019	2020	2021	2022	2023	2024	2025
None										
TOTAL UNDERGRADUATE ENROLLMENT:				***na***	***na***	***na***	***na***	***na***	***na***	***na***
DEGREE	MAJOR	CONCENTRATION	CONC	2019	2020	2021	2022	2023	2024	2025
MA	Native American Studies		NAS	16	19	14	10	16	13	10
Grad Cert	Indigenous Food Systems		IFSO	na	na	na	na	na	na	3
Grad Cert	Native American Certificate		NASC/NASO	13	12	23	18	20	26	9
TOTAL GRADUATE ENROLLMENT:				***29***	***31***	***35***	***28***	***37***	***40***	***22***
TOTAL ENROLLED:				***29***	***31***	***35***	***28***	***37***	***40***	***22***

	MINOR DESCRIPTION		CONC	2019	2020	2021	2022	2023	2024	2025
Minor	Native American Studies			17	19	20	27	22	28	23
TOTAL MINOR ENROLLED:				***17***	***19***	***20***	***27***	***22***	***28***	***23***
AWARDED DEGREES										
DEGREE	MAJOR	CONCENTRATION	CONC	2019	2020	2021	2022	2023	2024	2025
MA	Native American Studies		NAS	4	5	3	9	2	4	9
Grad Cert	Indigenous Food Systems		IFSO	na	na	na	na	na	na	na
Grad Cert	Native American Certificate		NASC/NASO	4	3	6	6	6	9	19
TOTAL DEGREES AWARDED:				***8***	***8***	***9***	***15***	***8***	***13***	***28***
AWARDED MINORS										
	MINOR DESCRIPTION		CONC	2019	2020	2021	2022	2023	2024	2025
Minor	Native American Studies			5	7	7	10	4	8	9
TOTAL MINORS AWARDED:				***5***	***7***	***7***	***10***	***4***	***8***	***9***