

From: Deputy Commissioner Brock Tessman  
To: Board of Regents

Please see below for an executive overview of the Request to Plan items that are being proposed for your review and action at the September 2020 meeting of the Board of Regents. These items have been submitted by the campuses and reviewed by the Chief Academic Officers of the Montana University System and community colleges. OCHE staff has reviewed the items and provided a short analysis below relying on information submitted by the campuses. For more information and specific details on each item, please see the supporting documentation included on the Academic, Research, and Student Affairs Committee agenda.

---

## **Montana State University – Bozeman**

### ***M.S. in Materials Science***

The proposed Master's Degree in Materials Science will complement the existing multi-campus Materials Science Ph.D. program and will be administered by the existing Ph.D. program leadership. The Master's program will provide engineering undergraduate students with an option for an accelerated advanced degree, which can also serve as a recruiting tool for the collaborative Ph.D. program and as an exit ramp for students in the Ph.D. program who ultimately decide not to pursue the terminal degree. The current Materials Science Ph.D. program is offered in collaboration with Montana Tech and students can take classes with professors on both campuses. Master's programs students will have the same access to courses and faculty members at both campuses. The Master's program will rely on existing faculty, courses, and staff, and will therefore require few additional resources.

### ***M.A. In Professional Studies***

Professional Studies (or interdisciplinary studies) degrees provide the opportunity for students to flexibly combine areas of study or unique research into a graduate credential. MSU's proposed degree would provide students three pathways towards such a degree: 1) a 'stackable' pathway in which students combine graduate certificates with a professional paper; 2) a research-focused track in which students would propose a unique area of research that does not fit well into a single disciplinary area; and 3) as an option for students pursuing MSU's Individual Interdisciplinary Ph.D., but who choose to stop out.

The M.A. in Professional Studies will largely leverage existing course and certificate offerings and the infrastructure for the Individual Interdisciplinary Ph.D. No substantial costs are anticipated. Montana Tech and the University of Montana offer similar flexible master's degree pathways.

### ***Physics B.S. – Astronomy and Astrophysics Option***

The proposed Astronomy and Astrophysics Option in the Physics B.S. would become the 4<sup>th</sup> option within MSU's Physics B.S. program. The proposed option would offer suggested pathways for students who want to emphasize experimental versus theoretical approaches. Both pathways will provide a solid background in the experimental and theoretical fundamentals of physics, mathematics, astronomy, and astrophysics. The proposal arose from strong interest from current and prospective students. The department will develop one new

upper-division course and adapt two other courses as they implement the program. The MSU faculty have been in contact with the UM Department of Physics and Astronomy and have received support for the proposal.

## **University of Montana – Missoula**

### ***Ph.D. in Computer Science***

The University of Montana's Computer Science Department has a highly active and growing research profile. Their existing graduate program has 26 students (75% of the cohort) supported as research assistants through external grants. The department's research has now grown to the point where they can support – and need – more experienced research students who will have a longer time to work on a project. The department also feels the Ph.D. could help as they seek to recruit a more diverse faculty.

To create the Ph.D., the department anticipates creating two new Ph.D. TA lines and modifying two current TA positions from graduate-level to Ph.D.-level (which carries a small ongoing cost). MSU has an existing PhD in Computer Science, but supports UM moving forward with their own Ph.D.

### ***C.A.S. and Certificate in Brewing Science***

The University of Montana proposes to offer a 17-credit certificate and a 30-credit Certificate of Applied Science in Brewing Science. The Certificate of Applied Science will allow students of chemistry, biochemistry, microbiology, and related scientific fields to complete a certificate in brewing science through completion of appropriate prerequisites and a new 3-credit course in brewing science. The partnered 17-credit certificate will require fewer prerequisites so that it can be accessible to non-science majors. UM also anticipates offering a non-credit micro-credential program and to formalize testing services for local and regional breweries.

UM anticipates seeking external funding to support the program in the first few years and to purchase instrumentation. UM also proposes a \$50 laboratory course fee to support consumables in the brewing science course. Other anticipated costs include release time for one faculty member to develop the coursework. MSU Billings has, in the past, offered non-credit brewing coursework. Flathead Valley Community College currently offers an Associates of Applied Science in Brewing and provides related testing services.

### ***Human Physiology Option in the Integrative Physiology B.S.***

The proposed option would streamline coursework for students who expect to pursue graduate education as a physician assistant, occupational therapist, or nurse rather than immediately entering professional practice. The curriculum would better align core science requirements with the expectations of profession health sciences graduate schools while allowing students to avoid courses not required by such programs. The net effect is to shorten the number of credits needed for graduation and a clearer pathway for students interested in these high-demand health fields. Only incidental costs are anticipated, as UM already offers all the required coursework for the proposed option.

### ***Ph.D. in Integrative Physiology and Rehabilitation Sciences***

The proposed Ph.D. in Integrative Physiology and Rehabilitation Sciences would prepare students to serve as faculty in key health professions, including physical therapy, occupational therapy, and speech pathology, all areas where there is substantial evidence of a shortage of qualified faculty. This program could also create new dual degree options (with UM's new Occupational Therapy doctorate, or existing physical therapy and speech pathology programs) for students who want a mixed clinical/academic career. No new coursework is anticipated. The primary costs will likely be for faculty time to supervise PhD students. The department currently advises 3 doctoral students through UM's Doctorate of Interdisciplinary Studies (D.I.S.) program. No similar degree program exists in the MUS.

### ***Establish Montana Repertory Theatre as a Center***

The Montana Repertory Theatre, established in 1967, is the professional theatre-in-residence at the University of Montana. The Rep's programming reaches more than 10,000 Montanans each year and has included performances or workshops in almost every county in the state. This includes service through the Rep's educational outreach program, which brings art and arts education to Montana schools.

This proposal would recognize the Montana Repertory Theatre as an established unit of the University of Montana. Given the Rep's size, scope, and longstanding operations, such recognition seems appropriate.

### ***Skaggs Center for Telehealth and Precision Medicine***

**\*\*NOTE\*\*** Due to the use of an honorific name, the Level II paperwork for this proposal will return for BOR review and approval at a future meeting. The materials submitted for BOR consideration at that time will include a summary of comment received from the public in accordance with BOR policy 1004.1 "Naming of Buildings".

The proposed Skaggs Center for Telehealth and Precision Medicine would serve as a statewide hub for education, research, and telehealth and precision medicine services. Operating out of the Skaggs School of Pharmacy, the Center would host 1) an interprofessional telehealth effort to provide team-based care to communities across the state, 2) a testing and consultation site for precision medicine innovations, including pharmacogenetics, and 3) a base for expanding the University of Montana's ImProving Health Among Rural Montanans (IPHARM) program, which connects patients with poor healthcare access to services from UM pharmacy students and faculty.

The Center will be housed in an addition to the Skaggs building on the UM campus, which has been made possible through an \$8M philanthropic commitment. UM has committed to securing a further \$2M in philanthropic support for the building and center operations. Establishing the center will require significant financial commitment, including hiring full- and part-time staff (e.g. program manager, IT personnel, and bioinformaticist) and additional faculty and staff as the center grows.

### ***Certificate in General Studies***

The proposed Certificate of General Studies would provide students a milestone toward receiving their Associate of Arts or Associate of Science degree at Missoula College. Alternatively, they can use the certificate to demonstrate completion of core general education

courses, which can help to facilitate transfer within the Montana University System or accelerate their work in a baccalaureate program at the UM Mountain Campus. Several other MUS two year colleges have either established (Great Falls College; Miles Community College) or are considering (Helena College) a similar credential to improve their ability to track completion of general education coursework and to assist students in successfully transferring that coursework as a block, in accordance with MUS transfer policies. This credential relies entirely on existing coursework, so no substantial costs are anticipated.

## **Montana Technological University**

### ***M.S. in Geological Engineering***

Currently, Montana Tech's M.S. in Geosciences has seven options: four in geoscience (engineering geology, geochemistry, geology, and hydrogeology) and three in engineering (geological engineering, geophysical engineering, and hydrogeological engineering). This request would separate the seven options into two M.S. degrees (an M.S. in Geosciences and an M.S. in Geological Engineering), change the name of the option in Geophysical Engineering to Geophysics, and establish a new option in Geotechnical Engineering. The titles of the resulting degrees and options would better reflect the content of each pathway and be less confusing for students. No additional coursework is required to make these changes to existing courses of study, so only incidental costs are envisioned.

## **Helena College**

### ***C.A.S. in Fire & Emergency Services and A.S. in Fire & Emergency Services***

The proposed Certificate of Applied Science (C.A.S.) and Associate of Science (A.S.) represent a reconfiguration of the current Associate of Applied Science (A.A.S.) in Fire and Rescue. The reconfiguration is the result of conversations with local and regional fire service, review of labor statistics and projections, and student feedback (both former and current). The proposed changes will add a work-based learning component to the program and the opportunity for students to earn industry recognized credentials, both of which were strongly encouraged in the meetings with industry. The program will also include alternate pathways so that students are able to earn an industry recognized credential regardless of which path they choose. Given that this is a reconfiguration of an existing program, minimal resources will be needed.