Montana University System

INTENT TO PLAN FORM

Program/Center/Institute Title: 5-Year Dual B.S./M.S. in Cellular and Molecular Neuroscience

Campus, School/Department: UM Missoula, CHPBS and CHS

Contact Name/Info: Richard Bridges, BMED, College of Health Professions and Biomedical Sciences

Expected Submission Date: 9/15/17

To increase communication, collaboration, and problem solving opportunities throughout the MUS in the program/center/institute development process, please complete this form not more than 18 months in advance of the anticipated date of submission of the proposed program/center/institute to the Board of Regents for approval. The completed form should not be more than 2-3 pages. For more information regarding the Intent to Plan process, please visit http://mus.edu/che/arsa/preparingacademicproposals.asp.

1) Provide a description of the program/center/institute.

The proposed 5-year dual B.S./M.S. program in Cellular and Molecular Neuroscience leverages courses and faculty from ongoing undergraduate and graduate programs in neuroscience to create an accelerated curricular path that allows top students interested in advanced research training to obtain both degrees in five years, rather than six. It does not merge or replace either parent program. Owing to an accelerated pace, the proposed curriculum will require that a number of graduate course credits (maximum of 16) count toward both the B.S. and M.S degrees. (UM’s B.S./M.S in Athletic Training provides a precedent for such an accommodation.)

2) Describe the need for the program/center/institute. Specifically, how the program/center/institute meets current student and workforce demands. (Please cite sources).

The study of our nervous system and the brain is both an established area of scientific inquiry and yet an emerging area of intense focus, especially as related to devastating neurological conditions such as Alzheimer’s, Parkinson’s, traumatic brain injury, PTSD, addiction, schizophrenia, depression, etc. The Cellular and Molecular Neuroscience BS program at UM continues to respond to the increasing attention and need to understand brain structure and function under both physiological and pathological conditions by educating enthusiastic students from across the state of Montana, the US and the world. The dual BS/MS will further meet this need by enhancing student coursework with the “hands-on” experiential research training that emphasizes critical thinking, team-based science, experimental design and interpretation, information technology, and science communication associated with an independent M.S.-level research project. The result will be students who are better prepared to further their research and/or clinical education (graduate school, medical school, etc.) and address the cause and treatment of the neurological disease that have become a national priority. Alternatively, these students will enter the private sector, meeting the growing demands in the health care fields, and be better prepared for a “knowledge economy” that will require the same innovation skills that are integral to the research and discovery process.

3) Describe how the program/center/institute fits with the institutional mission, strategic plan, and existing institutional program array.

The proposed B.S./M.S. program will allow exceptional neuroscience students to seamlessly build on their undergraduate coursework with an independent M.S.-level research project. The intentions and
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Aims of this program are numerous and align well with goals outlined in UM Strategic Vision 1.1, especially:

**Engage students where they are:** The core of this effort lies not in the classroom, but in getting students into productive research labs where they will learn both the process and rewards of scientific discovery. Beginning in their 3rd year, this experiential training affords students not only with “hands-on” research in a “real-lab” setting, but also the opportunity for valuable “multiple level mentoring” by faculty, post-docs, graduate students, senior undergraduates, and technicians. It is not uncommon for the mentoring relationship that is established between the student and research mentor to last beyond the student’s career at UM.

**Foster Knowledge Creation and Innovation:** Again, students conducting research projects in neuroscience labs will participate first hand in the innovative process of experimental design and the discovery of new knowledge. Almost as important, the student will also gain experience in conveying that knowledge as they prepare poster presentation and contribute to the publications generated in the lab.

4) **Describe how the program/center/institute overlaps, compliments, or duplicates existing efforts in the MUS.**

A 5-year dual B.S/M.S degree in Neuroscience is not presently available within the MUS system. While MSU does offer a B.S. in Cell Biology and Neuroscience, the B.S. degrees in Cellular & Molecular Neuroscience and Cognitive and Behavioral Neuroscience at UM remain distinct with respect to their depth of focus and curriculum. Similarly, both UM and MSU offer Ph.D. and M.S. degrees in Neuroscience, as do most research-intensive universities in the country. Importantly, neither program currently offers the proposed 5-year dual B.S/M.S degree in Cellular and Molecular Neuroscience.

**Signature/Date**

**College/School Dean:**

[Signature]

19 Sept., 2017

**Chief Academic Officer:**

[Signature]

19 Sept., 2017

**Chief Executive Officer:**

[Signature]

9/22/17

**Flagship Provost***:

[Signature]

9/25/17

**Flagship President***:

[Signature]

9/25/17

*Not applicable to the Community Colleges.

**Date of Final Review:**

When submitting the proposal to the BOR, include this signed form with the Level II request.