

AGENDA
For
UNIVERSITY GRADUATE COUNCIL

Wednesday, Nov. 19, 2014

8:00 – 9:25 a.m.

SUB 235

Opening – 8:05 a.m.

Approval of Minutes – Nov. 5, 2014

Announcements

- Information on graduate committee status concerning Activity Insight (Brown);
Doctoral (10 years, and 3 terms not enrolled), Masters (6 years, and 3 terms not enrolled)
- CourseLeaf and CiM course requests process (Hoo)
- Review of Department-level exception to policy process (Brown)
- DegreeWorks for graduate students (Brown)

Old Business

- Curriculum Committee (Miles, LeCain, Lipfert, Babbitt)
 - Final review of procedures and questions to review Level II proposals
 - Level II PhD in Psychology approval and vote
- Grad faculty status of NTT, affiliate faculty on graduate committees (Hoo)
- Exam-Degree Completion, policy proposal (Cerretti)

New Business

- Age of Courses, policy proposal (Cerretti)
- Minimum grade on a Program of Study (Cerretti)
- Commencement participation for graduate candidates using One-credit Extension (Brown)

Policy and Procedures Committee (Borkowski, Bangert, Shreffler-Grant,)

- Ph.D. Enhancement Award
- Doctoral 12 credit requirement beyond master's degree, policy proposal

Governance Committee (Dyer, Codd, Christensen)

- By-laws modification
- Role of Faculty Senate member

End: 9:25 a.m.

Next scheduled meeting – Wednesday, Dec. 3, 2014 8:00 – 9:25 in ABB 138

Montana Board of Regents
CURRICULUM PROPOSALS

MONTANA STATE UNIVERSITY, PROPOSED PH.D. IN PSYCHOLOGICAL SCIENCE

1. Overview

The Department of Psychology at Montana State University, located in Bozeman, proposes to offer a Ph.D. in Psychological Science. This Ph.D. program will prepare students for research and teaching careers in academia, government, industry, education and the non-profit sector. Graduates will be trained as productive research professionals who will be able to compete successfully in state, regional, national and international job markets in both teaching and research, and who will bring recognition to the State of Montana, the Montana University System and to Montana State University as a center of post-graduate educational excellence in accord with the 2012 MSU Strategic Plan.

The field of Psychology is naturally partitioned into two distinct subfields: Clinical practice and Psychological Science. Psychological Science is the core subfield that involves the discovery and application of scientific findings about human and animal behavior. Psychological Science can be regarded as a core academic field that produces research widely cited by other fields (including medicine, math, physics, earth science, and chemistry)¹. With an emphasis on theory-driven scientific hypothesis testing, Psychological Science is also distinct from the other social sciences (such as Sociology and Political Science), and is more closely allied with biomedical sciences, neuroscience, and public health.

The proposed Ph.D. in Psychological Science will advance the 2012 strategic plan of Montana State University:

- **Learning**, via a hands-on active, student centered program to increase the number of PhD graduates at MSU².
- **Discovery**, via original empirically-based psychological science that creates new knowledge and elevates MSU's status as a leading Land Grant high research activity university. MSU strives to "raise its national and international prominence in research, creativity, innovation and scholarly achievement, and thereby fortify the university's standing as one of the nation's leading public research universities."³ The PhD in Psychological Science will position MSU more firmly among its peers as a Carnegie Very High Research Activity University. Of the 108 Carnegie Very High Research Universities, 105 offer a Psychology PhD with an emphasis on Psychological Science. At the same time MSU ranks 106th out of the 108 schools in doctoral conferrals among the Carnegie top research universities.⁴ Thus, a PhD in Psychological Science is an obvious solution for increasing MSU's status as a Carnegie tier 1 university. The Psychological Science Ph.D. will also contribute to the *Discovery* metrics by increasing the number of doctoral conferrals, attracting and retaining faculty members

¹ Caccioppo, 2007, Psychology is a hub science, APS Observer, 20(8). Boyack et al. (2005), Mapping the backbone of science. *Scientometrics*, 64, 351-374.

² Objective L.2, Increase Graduation Rates at MSU, Metric L.2.2, By 2019 ... increase the number of doctoral degrees granted per year from 56 to 80 per year. (p.4, 2012 MSU Strategic Plan).

³ p. 7, 2012 MSU Strategic Plan.

⁴ This statistic is found in Metric D.1.3, p. 8, 2012 MSU Strategic Plan

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with national recognition as well as memberships of faculty on government review panels.⁵ Importantly, the program will contribute to all metrics of Objective D.3. “Expand the scale, breadth and quality of doctoral education.”⁶ Because our M.S. students currently are highly successful in presenting research at national and international conferences and publishing their work in peer refereed journals, our doctoral students will contribute even more strongly to Metric D.3.4.⁷

- **Engagement**, via the theoretical and applied advances in psychological science about the human condition that will offer students the enhanced ability to answer scientific questions related to local, national and international social and interpersonal problems.
- **Integration**. The Psychological Science PhD will help MSU meet Metric I1.4, increasing faculty scholarly products in collaboration with undergraduate and graduate students.⁸ Psychology faculty are currently productive mentors of both undergraduate and graduate students. In the last 5 years alone, graduate students in our M.S. program co-authored 62 presentations at national and international conferences and 29 peer-refereed scientific publications; our undergraduates co-authored 61 presentations and 6 peer-reviewed publications. Ph.D. students will simultaneously take their science skills into teaching practice through co-mentoring of undergraduate students, classroom teaching, and collaborative research with other graduate students.
- **Access**. As a Land-Grant and Carnegie Very High Research Activity University, increasing access to graduate education is paramount.⁹ In the Western U.S., access to research-based doctoral education in Psychological Science is limited. Only one Big Sky Conference university had a Psychology “research doctoral” program ranked by the National Academy study (UC-Davis).^{10 11}

Current faculty and M.S. student quality. Faculty of the Psychology Department at MSU are highly active in research in several major areas of Psychological Science. The 10 Psychology Department faculty published 85 papers in peer-reviewed journals from 2011-2013. Department faculty brought in \$13.2 million in grant dollars as Principal Investigators or Co-Investigators between 2008 and 2012. The strong record of research productivity of the graduates of our M.S. program in Psychological Science (see *Integration* above and section 4.A. below) and their excellent record of admission to other PhD programs bodes well for the future success of a PhD in Psychological Science at MSU.

⁵ Metrics D.1.1 to D.1.3, p. 8, 2012 MSU Strategic Plan

⁶ Metric D.3., p. 9, 2012 MSU Strategic Plan

⁷ Metric D.3.4, “The number and proportion of graduate students presenting at national and international meetings, publishing in eminent academic outlets ...”, p. 9, 2012 MSU Strategic Plan.

⁸ Metric I.1.4, p. 15, 2012 MSU Strategic Plan, increase by 50% by 2019.

⁹ Metric A.1.3, p. 17, 2012 MSU Strategic Plan. Also note that one-half of the Public Carnegie Very High Research Universities are Land Grant.

¹⁰ <http://www.nap.edu/rdp/>, A data-based assessment of research-doctorate programs in the United States, National Academies Press, 2010, ISBN 978-0-309-16030-8

¹¹ Among Big Sky Conference universities, 5 schools with a PhD in aspects of Psychological Science (UC-Davis, U. of North Dakota, Idaho State University, U. of Montana, Portland State University) and 3 that offer a PhD in Clinical Psychology (Idaho State University, U. of Montana, U. of North Dakota). Only UC-Davis appears in the National Academy rankings.

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2. Provide a one paragraph description of the proposed program. Be specific about what degree, major, minor or option is sought.

Degree: Ph.D. in Psychological Science.

The Ph.D. in Psychological Science will emphasize closely mentored independent doctoral research with supporting coursework, research discovery expectations, and advanced training in the teaching of psychology. The program strengths will be in the basic scientific approaches to psychology in the core areas of cognitive, social, developmental and biological psychology. Psychology Department faculty have expertise in memory (including aging and memory), attention (including the development of cognitive control in both adults and children), social psychology (including attitudes and values, social cognition, goals and motivation, stereotyping, and prejudice), and the biological substrates of behavior (including biological processes of psychosocial stress, motivation, addictions, memory, attention, anxiety, and the effects of stroke and other physical trauma on functioning). Psychological Science as a field continues to expand the incorporation of neuroscience and biological measures into social and behavioral science research. The Psychology Department laboratories will provide Ph.D. students with access to state-of-the-art equipment needed for cutting-edge research methods in cognitive, social, affective, and behavioral neuroscience across the lifespan and across species. This equipment includes advanced EEG methods, pupillometry, oculomotor behavior, and mobile systems for electrodermal responses, heart rate, heart rate variability, vagal tone, genetics, tissue histology, and sophisticated computer data collection tools including Anymaze, Qualtrics, Empirisoft, and E-prime. A further important aspect of the program is that PhD students will participate in mentored teaching of undergraduates in both lab and lecture settings, as well as in research projects.

3. Need

A. To what specific need is the institution responding in developing the proposed program?

Bureau of Labor Statistics data indicate that psychology is a growing profession, especially industrial and organizational psychology, i.e., scientists who can address issues of human variables in organizations, human interactions with technology, and enhancing the morale and function of employees in the workplace. Further, data indicate that job prospects are best for “candidates with a doctoral or specialist degree and post-doctoral work experience”.¹² Within science, engineering, and health fields, unemployment among Psychology PhDs is especially low.¹³ Job prospects are also very good for graduates with strengths in neuroscience and the science of aging¹⁴; these are two strengths of the MSU Psychology Department faculty.

In the Western U.S., PhD programs in Psychological Science are lacking. Excluding California, the *National Academy of Sciences* study of U.S. Research Doctoral programs had only 13 research doctoral Psychology programs in the 9 western states.¹⁵ Idaho and Montana had no Psychology research doctoral programs in the

¹² <http://www.bls.gov/ooh/life-physical-and-social-science/psychologists.htm#tab-6>

¹³ From National Center for Science and Engineering Statistics. <http://www.nsf.gov/statistics/infbrief/nsf14317/>

¹⁴ <http://www.apa.org/gradpsych/2011/03/cover-sunny.aspx>

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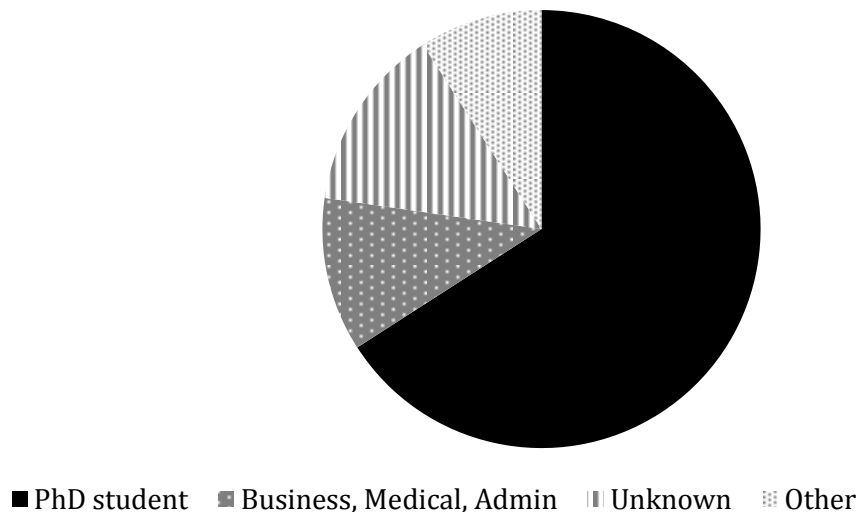
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the National Academy rankings. (The University of Montana Psychology Department PhD was not included as a research doctoral program in the National Academy study.¹⁶) The National Academy report emphasizes the important role of public universities in doctoral education, “The health of research and doctoral education in the United States depends strongly on the health of public education.”¹⁷ As mentioned earlier, among the schools of Big Sky athletic conference, only UC-Davis has a National Academy ranked research doctoral program in Psychology.

B. How will students and any other affected constituencies be served by the proposed program?

Approximately 70% of students earning the M.S. in Psychological Science at MSU (2005-2013) applied to other universities for PhD programs, and 93% were admitted. Changing universities en route to a Ph.D. disrupts a student’s research productivity and places the student at a disadvantage on the job market later. Students in MSU’s M.S. in Psychological Science have an excellent record of publications in refereed journals and scientific

Figure 1. 65% of M.S. graduates since 2005 have become PhD students at other universities.



¹⁵<http://www.nap.edu/rdp/>, A data-based assessment of research-doctorate programs in the United States, National Academies Press, 2010, ISBN 978-0-309-16030-8. Excluding California, the nine states in the Western region of the National Academy study are Washington, Oregon, Nevada, Arizona, New Mexico, Utah, Idaho, Wyoming, and Montana.

¹⁶The University of Montana reported data for the National Academy survey for 3 PhD programs: Forestry, Organismal Biology and Ecology, and Chemistry. Montana State University reported data to the National Academy in 11 areas: Plant Sciences, Biochemistry, Chemistry, Biology, Earth Sciences, Mathematics, Physics, Fish and Wildlife Biology, Immunology and Infectious Disease, Microbiology, and Engineering.

¹⁷<http://www.nap.edu/rdp/>, A data-based assessment of research-doctorate programs in the United States, National Academies Press, 2010, ISBN 978-0-309-16030-8, p. 6.

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presentations at national and regional conferences (see *Integration* above). The Ph.D. in Psychological Science will facilitate the students' career advancement and will prepare them for the job market in a timely manner (likely with fewer student loans) with qualifications for an entirely different set of careers than the M.S.

C. What is the anticipated demand for the program? How was this determined?

Based on regional university graduate application statistics available online, we anticipate receiving approximately 20-25 complete applications per year, while admitting between 4 and 6 students per year (a ratio of demand to admissions of approximately 4 to 1). Most of our current M.S. students applied to other Ph.D. programs and are seeking the M.S. to enhance their credentials for admission to the Ph.D. elsewhere. Hence, we anticipate more applications for our Ph.D. program than we receive for our M.S. program (currently approximately 18-20 complete applications per year). The nearest neighbor Ph.D. programs in Psychological Science (or other research-based psychology doctoral program) report receiving an average of 20 (Idaho State) and 10 (U. North Dakota) student applications per year over the last 4 years. They report acceptance rates around 20%.

4. Institutional and System Fit

A. What is the connection between the proposed program and existing programs at the institution?

The Ph.D. program in Psychological Science will replace the existing M.S. Psychological Science degree. The first two years in the Ph.D. program will consist of a combination of coursework and faculty-mentored research. The Psychology Department faculty have proven that they are highly committed to and effective in mentoring graduate students in research. Excluding the three faculty members hired in 2013-2014, all our faculty have mentored students (see Table 1) and voted unanimously in support of the currently proposed Ph.D. program. The three newest faculty also strongly support the proposed Ph.D. program. Also, in the last 5 years, students in the two-year M.S. Psychological Science program were co-authors on 62 presentations and 29 publications in peer-refereed journals.

There are no other existing programs at MSU that will be either directly connected to, similar to, or in competition with this program. However, existing programs at MSU are expected to benefit from a Ph.D. in Psychological Science. Psychology faculty maintain collaborations on campus (e.g., in Cell Biology and Neuroscience) that will enhance interdisciplinary work. A list of current, past, and potential collaborations among Psychology faculty and other MSU faculty is given in Appendix A. Note that this includes all 5 colleges within the university and reinforces the assertion that Psychology is indeed a hub science.¹ The proposed PhD program will strengthen our future role in interdisciplinary research and coursework at MSU. This integration with other programs will be highlighted in section 5 below.

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Table 1. Faculty participation in mentoring students for our M.S. program.

| Faculty Mentor | M.S. Awarded 2006-2014 | New M.S. Students 2014-2015 |
|----------------|------------------------|-----------------------------|
| Babcock | 7 | 0 |
| Block | 2 | 1 |
| Brooker | na | 1 |
| Handley | 7.5 | 3 |
| Hutchison | 7 | 1 |
| Lynch | 5 | 0 |
| Meade | 5 | 1 |
| Skewes | na | 0 |
| Smith | 6.5 | 2 |
| Vess | na | 3 |

B. Will approval of the proposed program require changes to any existing programs at the institution? If so, please describe.

Yes, the M.S. program in Psychological Science will be replaced by the Ph.D. program in Psychological Science. The M.S. program is currently modelled after the first two years of a typical research-based Ph.D. program, with rigorous graduate seminar courses and extensive research, under faculty supervision, culminating in a thesis. Therefore, much of the needed resources in terms of coursework and first two years of funding are already in place. Including the three hires this year, 8/10 faculty have already taught courses in our M.S. program. We currently offer 1 graduate research methods course and 1-2 graduate seminar-style content courses each semester. Because these courses are already designed as Ph.D. courses, they will be easily transitioned into the Ph.D. curriculum.

C. Describe what differentiates this program from other, closely related programs at the institution (if appropriate).

There are no closely related programs at MSU. The most closely related program is the PhD in Engineering, option in Industrial and Management Engineering with a research focus on either Human Factors or Service Systems Engineering.¹⁸ In order to take advantage of the interdisciplinary resources available on campus, students in the Psychological Science Ph.D. will be encouraged to take additional courses outside of our department. Some sample courses include EDLD 530 (College Teaching), BIOB 510 (Topics in Neurobiology), BIOB 524 (Ethical Practice of Science), EIND 554 (Design of Experiments for Engineers), EIND 557 (Regression

¹⁸ http://www.coe.montana.edu/ie/gradprog/PhD_program.htm

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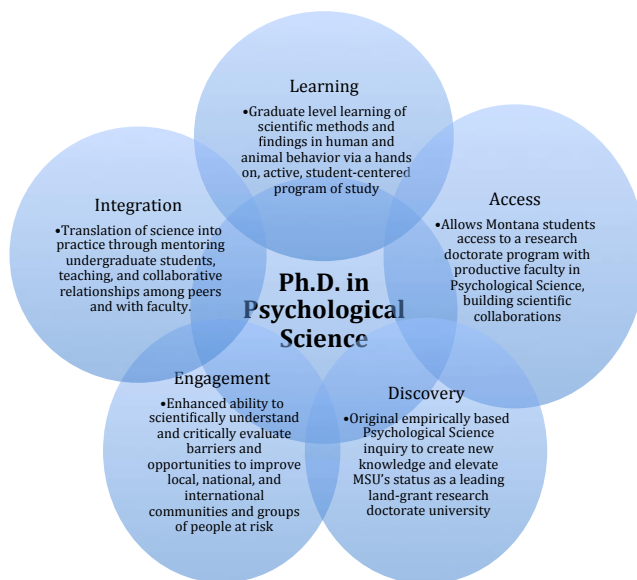
and Multivariate Analysis), LAC 502 (Psychopharmacology and Addictions), LAC 504 (Alcohol and Drug Studies), STAT 511 and 512 (Methods of Data Analysis I and II), STAT 528 (Biostatistics), STAT 532 (Bayesian Data Analysis), and STAT 541 (Experimental Design).

D. How does the proposed program serve to advance the strategic goals of the institution?

Figure 2 illustrates the ways in which the Psychological Science Ph.D. will meet the goals of MSU’s 2012 Strategic Plan. The Overview section above also provided details of how the program will help to advance MSU’s 2012 Strategic Plan. MSU is one of the smallest enrollment land-grant universities to achieve the Carnegie Foundation Very High Research Activity designation, and produces a relatively small number of Ph.D.s per year. MSU’s strategic plan 2012 calls for an increase of in the number of Ph.D.s awarded per year.

A second central part of MSU’s strategic plan is that more undergraduates integrate learning and engagement. The Ph.D. in Psychological Science will facilitate undergraduate Integration of Learning and Engagement through enhanced undergraduate involvement in research lab groups led jointly by faculty and their graduate students. The Psychology Department is already highly successful in mentoring undergraduates in hands-on research, teaching 945 cr hours during the last 5 years. We anticipate that this will increase.

Figure 2. Interfaces of the proposed Ph.D. in Psychological Science with the MSU Strategic Plan



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E. Describe the relationship between the proposed program and any similar programs within the Montana University System. In cases of substantial duplication, explain the need for the proposed program at an additional institution. Describe any efforts that were made to collaborate with these similar programs; and if no efforts were made, explain why. If articulation or transfer agreements have been developed for the substantially duplicated programs, please include the agreement(s) as part of the documentation.

The scholarship in the MSU and U of M Psychology Departments emphasizes quite different aspects of Psychology. Psychology is a very diverse discipline. U of M Psychology has an emphasis on training practitioners in Clinical and School Psychology, whereas MSU emphasizes Psychological Science and research, and does not offer clinical training. U of M currently has a Ph.D. program in Clinical Psychology that is accredited by the American Psychological Association and that produced 31 graduates in the 7 years between 2005 and 2011.¹⁹ Training clinical practitioners is clearly the strength of the U of M Psychology Department. The U of M, after the 2011 program review of the Psychology Department, combined the non-practitioner Ph.D. options (formerly titled Psychology, Animal Behavior, and Developmental Psychology, with 4, 5 and 4 Ph.D.s in 7 years, respectively) into one 'Experimental Psychology' Ph.D. The two non-clinical options that produced the most Ph.D.s in U of M's Program Review (Animal Behavior and Developmental Psychology) have virtually no overlap with the MSU proposed Ph.D. in Psychological Science.

As mentioned in section 3.A., the U of M Psychology Ph.D. was *not* included in the National Academy study of "research doctoral" programs, though programs from other departments at U of M were included. The absence of the U of M Psychology Ph.D. from the National Academy rankings of research doctorate programs punctuates the clinical practitioner emphasis of the U of M Psychology Ph.D. program.

U of M Psychology faculty insight and advice was incorporated at the earliest stages in our development of this proposal. In 2010, three MSU faculty members visited Missoula and met with faculty from the U of M Psychology Department to discuss the possibility of a Psychology Ph.D. at MSU. During this meeting, faculty at U of M said that they were supportive of MSU developing a program in Psychological Science and provided helpful suggestions (e.g., adding a significant teaching component) that we have incorporated in this proposal. In 2013, Provost Perry Brown wrote that U of M Psychology faculty recognize the distinct differences between the two departments, and "... they are willing to support a Ph.D. initiative when you are ready to go forward with it."²⁰

¹⁹ M.U.S Program Review documents, 2011-12, p. 2.

²⁰ Email, Perry Brown to Martha Potvin, April 24, 2013.

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5. Program Details

A. Provide a detailed description of the proposed curriculum. Where possible, present the information in the form intended to appear in the catalog or other publications. NOTE: In the case of two-year degree programs and certificates of applied science, the curriculum should include enough detail to determine if the characteristics set out in Regents' Policy 301.12 have been met.

The Graduate School requires that Ph.D. candidates complete a minimum of 60 total credit hours beyond the bachelor's degree. This may include a maximum of 30 cr from a previously earned master's degree from either MSU or another program. Credits from a master's degree from another university with a focus on psychological science may be accepted toward the Ph.D. in Psychological Science subject to approval by the department. At least 12 credits of coursework must be beyond the master's degree. The Graduate School requires that 18 to 28 credits must be dissertation credits.

Each student admitted to the program will be assigned a major professor and a mentoring committee of 3 faculty members (major professor plus two others). At least two members of the mentoring committee must have their primary appointment in the Psychology Department. We encourage integration and collaboration with other departments throughout MSU and anticipate many third committee members from the list of collaborators in Appendix A. The student's individual coursework program, beyond the core requirements described below, will be developed in partnership with the mentoring committee. The mentoring committee will evaluate the student's satisfactory progress toward the degree each semester and will forward their progress recommendation to the Department.

Requirements of the Ph.D. curriculum in Psychological Science:

- Two graduate level research methods courses in Psychology (Psyx 501 and 502), plus one other graduate level research methods/statistics course from either the Psychology Department or another department with approval of the mentoring committee.
- At least one 3 cr graduate course from each of three foundational areas (Cognitive, Social, and Biological), total 9 cr.
- At least 3 graduate courses in Psychology beyond the M.S. degree (9 cr, not including the Teaching course requirement)
- 2 cr of the Teaching of Psychology course
- The remaining coursework should be selected in consultation with the mentoring committee. With approval of the mentoring committee, graduate level courses from outside the department may be counted toward the Ph.D. in Psychological Science.
- Each student must present a written dissertation proposal, give an oral presentation of the proposal to the dissertation committee, and take an oral exam on the proposal. The proposal document can be written in the form of an NIH or NSF grant proposal, or other format determined by the committee.
- The Comprehensive Exam should be taken during the first semester of the 4th year of study.
- Each student must be productively involved in research in every semester of enrollment.
- Each student must attend the department weekly research symposium ('brown bag'), and is expected

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to give a presentation annually.

- Each student must meet the Psychology Department Ethical Practices in Science training requirement. This can be met by completing the relevant CITI modules, plus any other training required by the mentoring committee.

The outline below shows the approximate curriculum sequence for a student in the PhD program. See Appendix B for the list of required Psychology courses, Psychology graduate content courses, and alternative content courses external to the Psychology Department.

First year

- semester 1, 6 or 7 cr, Psyx Advanced Design and Statistics I, graduate content course, possibly 1+ cr Masters Thesis Psyx 590.
- semester 2, 6 or 7 cr, Psyx Advanced Design and Statistics, graduate content course, possibly 1+ cr Masters Thesis Psyx 590.

Second year

- semester 1, 9 cr: Two graduate content courses, 3 cr Masters Thesis Psyx 590.
- semester 2, 10 cr: graduate content course, 7 cr Masters Thesis Psyx 590, 1 cr Teaching of Psychology. Successfully defend M.S. thesis. (Note: 1 cr Teaching of Psychology taken only by students accepted to continue for Ph.D.).

(Cumulative credits to M.S. degree = 31 or 32 cr)

Third year

- semester 1, 9 cr: graduate content course, 3rd research methods course, 1 cr Teaching of Psychology, 2 cr Doctoral Thesis Psyx 690. Qualifying exam (dissertation proposal).
- semester 2, 9 cr: graduate content course, 6 cr Doctoral Thesis Psyx 690.

Fourth year

- semester 1, 6 cr: graduate content course, 3 cr Doctoral Thesis Psyx 690, Pass Psychology Department Ph.D. Comprehensive Exam
- semester 2, 7 cr Doctoral Thesis, Psyx 690.

Fifth year: Doctoral Thesis Psyx 690 credits, optional coursework

(Minimum cumulative credits to PhD degree = 63 cr)

(Note: the Graduate School rules for curricula are found here:

http://www.montana.edu/gradschool/cat_for_doc_stud.html)

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Table 2: Outline of requirements for PhD in Psychological Science (minimum requirements; * indicates 690 dissertation credits for those continuing dissertation work)

| | Year 1 | | Year 2 | | Year 3 | | Year 4 | | Year 5 | |
|--------------------------------|--------------------------|-------|-------------------------|--------------------|--|--------------------------|---------------|------------------------------------|--------|-------|
| | Sem 1 | Sem 2 | Sem 1 | Sem 2 | Sem 1 | Sem 2 | Sem 1 | Sem 2 | Sem 1 | Sem 2 |
| Research methods | 3 | 3 | | | 3 | | | | | |
| Content Courses | 3 | 3 | 6 | 3 | 3 | 3 | 3 | | | |
| Teaching of Psychology course | | | | 1 cr | 1 cr | | | | | |
| Psyx 590 MS thesis (min 10 cr) | | | 3 | 7 | | | | | | |
| Psyx 690 Diss. | | | | | 2 | 6 | 3 | 7 | * | * |
| Other milestones | Research ethics training | | Submit MS Prog of study | Defend M.S. thesis | Establish Doctoral Comm/ Diss proposal | Submit PhD Prog of Study | PhD Comp exam | (defend diss. possibly this early) | | |
| Credits/sem | 6 | 6 | 9 | 11 | 9 | 9 | 6 | 7 | | |
| Cumulative cr | 6 | 12 | 21 | 32 | 41 | 50 | 56 | 63 | | |

B. Describe the planned implementation of the proposed program, including estimates of numbers of students at each stage.

Once our proposal is accepted, we anticipate advertising the availability of the program to outlets such as the APA, APS, COGDOP (Council of Graduate Departments of Psychology), as well as pamphlet distribution at professional conferences likely to be attended by top undergraduate students, and by personal communication to faculty at other institutions. We anticipate advertising our program during fall 2015 and accepting our first students during Spring of 2016 to start fall 2016. We anticipate the initial class to consist of some students entering straight from a bachelor's degree and others entering upon completion of a Master's degree from MSU or elsewhere. If any initial students enter with a Master's degree, it is possible we could have our first Ph.D. graduates as early as May 2018. Because we anticipate accepting students into our Ph.D. program during spring of 2016, our last M.S. students will be accepted during spring 2015 with anticipated graduation May 2017. Thus, there will be a 1-year overlap in programs with 2nd year M.S. students combined with 1st year Ph.D. students. This initial overlap is necessary to maintain enough GTA support for our courses (including the 20+ sections of Introductory Psychology lab). Based on current faculty resources (10 tenure-track faculty), the department expects to eventually have a total of 16-22 students enrolled in the program at one time (financial support for 11 as GTAs, 5-7 third or fourth year students supported through GRAs, and potentially 1-2 third or fourth year students supported by adjunct teaching). Obviously, with additional GTA positions to support our undergraduate teaching mission, and/or tuition remission funding from the Graduate School, we could increase our Ph.D. enrollment to approximately 20-26 enrolled at one time (2 or 3 students

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per tenure-track faculty member). We anticipate about 5 new students entering our program each year and detail in section 6B below both our departmental plan to increase GRA funding and our anticipated enrollment growth and GRA/GTA distribution.

6. Resources

A. Will additional faculty resources be required to implement this program? If yes, please describe the need and indicate the plan for meeting this need.

The Ph.D. in Psychological Science can be initiated with current tenure-track faculty (10 FTE) and GTA (11, 50%) appointments. See also section 6.B. below.

The Ph.D. program will enhance the ability of current faculty to obtain research grants from NSF and NIH. Although doctoral programs are not formally required for grant funding from NIH, NSF, and other federal agencies, grant reviewers consider a Ph.D. program to be an important component of the "institutional resources available to faculty" criterion. The resources of federal grants are important to the State of Montana and MSU not only as an economic stimulus, but also for enhancing faculty research productivity and for enhancing opportunities for undergraduate and graduate student in research Engagement and Integration of Engagement and Learning through hands-on activity in faculty research labs. Faculty in the Psychology Department have garnered \$13.2 million in grant funds as Principal Investigators or Co-Investigators between 2008 and 2012. A new Psychology faculty member hired in 2013 brought in an NIH grant at the time of hire, and faculty have submitted 12 grant proposals to external funding agencies in the past 12 months. All faculty members in the Psychology Department are research-active, have supervised M.S. graduate students and undergraduate students in labs, presented at national, international and regional conferences with students as co-authors, and publish in refereed journals. From 2011 to 2013, the 10 Psychology Department faculty published 85 peer-reviewed articles.

The undergraduate major has grown from approximately 250 to 400 students in less than 5 years. In 2013, three established professors from prominent psychology programs at other universities conducted an independent review of the Psychology Department at MSU. The 2013 external program review described the Psychology Department as under-resourced for the undergraduate program. The addition of two more tenure-track faculty would bring the department to 12 FTE TT, a number that is more commensurate with the number of majors. Additional GTAs would help the undergraduate major while providing support for graduate students to increase the number of Ph.D.s produced by this program.

It is important that faculty retirements be replaced with tenure-track faculty in order to foster the growth of the undergraduate major while also building the reputation and productivity of the Ph.D. program.

B. Are other, additional resources required to ensure the success of the proposed program? If yes, please describe the need and indicate the plan for meeting this need.

The Ph.D. in Psychological Science can be initiated with current resources.

Montana Board of Regents
CURRICULUM PROPOSALS

MONTANA STATE UNIVERSITY, PROPOSED PH.D. IN PSYCHOLOGICAL SCIENCE

Graduate student financial support. The limiting factor regarding number of students admitted to the Ph.D. program will be availability of funding with tuition remission. Graduate student support is important in the National Academy ranking of research doctorate graduate programs. To foster excellence in the MSU Ph.D. in Psychological Science, additional funding for graduate students is highly desirable. At present the Psychology Department has 11 50% GTA positions with tuition remission. GTA positions provide essential instructional support for undergraduate education while simultaneously providing financial support for graduate students pursuing their degrees. About four students per year can be sustainably admitted to the Ph.D. program by using 11 50% GTA positions plus having graduate students serve as adjunct instructors as part of their 3rd and 4th years of study.

However, research-funded GRA positions will be essential to growing a healthy and self-sustaining program that does not simply rely on GTA funding from the university. As such, the department is committed to aggressively seeking GRA funding to grow our program. In fact, the department has already submitted 5 federal grants in the last 4 months, with over \$2 million in direct costs. Several more grant proposals are currently being written and include many of our interdisciplinary collaborators listed in Appendix A. These interdisciplinary grants could include either separate GRAs per department or, instead, a stipend split between departments as the student works on the interdisciplinary project. Further, although faculty have occasionally used federal funding to hire post-docs in the past, the department has agreed that, once the PhD proposal is accepted, any new grant containing a post-doc salary must also contain at least one GRA. Moreover, the department has researched several funding options for graduate students beyond simply relying on traditional NSF/NIH support (which we will of course also pursue). These alternative funding sources are listed in Appendix C.

Given the departmental commitment to growing our Ph.D. program, we anticipate 7-10 grant applications per year that include at least one GRA. Of course, the extent to which we can offer GRAs will depend upon the number of applications submitted and the current funding climate. Given the current funding climate and likelihood that applicants will use reviewer feedback on initial submissions to resubmit improved grants the following year, we anticipate the success rate of these proposals (and hence our number of GRAs) to increase each year. We therefore project to enroll five students in each of our first two years and support them with GTA stipends. If we assume our funding success rate will increase from a very conservative 0% our first year, to 25% our second year (2 GRAs), to 33% our third year (3 GRAs) and beyond, then this would allow us to transition our initial 5 students from GTAs to GRAs, freeing up 5 openings for new Ph.D. students by year 3. This same model would apply to year four, with potentially 1-2 remaining unfunded Ph.D. students supported through adjunct teaching. Using this model, we project between 16-20 students in our program by year 4 (11 GTAs + 5-7 GRAs, + potentially 1-2 adjuncts) with a sustained and healthy program in which graduating students and additional GRA funding frees up positions for new students.

In addition to the GRAs, one strength of our Ph.D. proposal is training in the teaching of psychology. Students will begin with GTA duties in Introductory Psychology labs. In their 4th and 5th semesters, students will take the 1cr Teaching of Psychology course, with the option of also taking EDLD 530 (College Teaching) if available. During their first Teaching of Psychology semester students will prepare a syllabus for an undergraduate course, and during the second semester of the course the students will be the adjunct instructor for an undergraduate course while receiving mentoring from both peers and the professor in charge of the course.

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Teaching undergraduate courses as the 'instructor of record' will enhance our students' marketability at graduation. It would be highly advantageous for these students to receive tuition remission while serving as adjunct instructors.

7. Assessment

How will the success of the program be measured?

Variables from the *National Academy of Sciences* ratings of research doctoral programs will be the primary outcomes for the Ph.D. in Psychological Science: research activity, student support and outcomes, and diversity of educational environment.²¹ Methods similar to the National Academy study can be used internally for most of the variables below. In addition, student satisfaction will be measured.

- percentage of students who complete the program within 5 or 6 years of first enrollment
- percentage of students with financial support, including tuition remission, during the academic year
- per capita rate of student-authored and co-authored research presentations at national, international and regional conferences
- per capita rate of student-authored and co-authored publications in refereed journals
- percentage of graduates receiving post-doctoral appointments or full-time employment related to their specific expertise after graduation
- percentage of students receiving outside fellowships (NSF, NIH pre-doctoral, or other)
- faculty productivity in grant funding, publications, conference presentations, editorships and service on review panels
- faculty and graduate student involvement in interdisciplinary scholarship
- diversity of the educational environment (gender of students and faculty, racial/ethnic identity of students and faculty, international students and faculty)

In order to achieve realistic expectations for our program, we solicited graduation and job placement information from the Experimental Psychology Ph.D. program at the University of North Dakota.²² At UND, there are only "a handful" of students who did not graduate within 5 years. Of their most recent 14 graduates, 11 hold faculty positions at academic institutions, 2 hold postdoctoral positions, and 1 is working in a non-academic setting.

8. Process Leading to Submission

Describe the process of developing and approving the proposed program. Indicate, where appropriate, involvement by faculty, students, community members, potential employers, accrediting agencies, etc.

Students in the M.S. program regularly request that our department develop a Ph.D. program and express their desires to continue graduate study in our department. As stated earlier, our M.S. students have good success in admission to Ph.D. programs at other institutions (nearly 70% apply to Ph.D. programs elsewhere and 93% are accepted; see section 3.B above).

²¹ <http://www.nap.edu/rdp/>, A data-based assessment of research-doctorate programs in the United States, National Academies Press, 2010, ISBN 978-0-309-16030-8 p. 13

²² We also solicited Idaho State University's PhD program, but they did not share that information with us.

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The recruiting of tenure-track faculty in the last 10 years has included discussion and promise of the possibility of a Ph.D. program, and all those hired have expressed enthusiasm about developing the Ph.D. in Psychological Science. The Ph.D. program will enhance faculty retention. The Psychology Department faculty have actively discussed developing a Ph.D. in Psychological Science since 2009. In 2010 a meeting was held with some members of the U of M Psychology Department. When hiring a new department chair in 2011, candidates discussed potential plans for a Ph.D. program with the current department faculty and with the Dean of the College of Letters and Science.

The 2013, an external review panel reviewed and consulted our department and examined our potential for a successful Ph.D. proposal. The external review panel rated the Psychology Department's potential for a Ph.D. program as **very favorable** based on the high research productivity of current faculty and graduate students. The committee further recommended converting our M.S. program into a Ph.D. program for four reasons: (1) MSU places very high priority on continuing to increase annual research expenditures and the number of doctoral programs, (2) the major division of the discipline of psychology coincides perfectly with the existing clinical/school psychology program at U of M and the proposed Psychological Science Ph.D. at MSU, (3) all the TT faculty are productive researchers, and (4) the record of external funding for a master-level program in psychology is already remarkable, with seven of the eight faculty who are not in their first year at MSU having already received either NIH or NSF funding. They further recommended resources to assist in this program as it develops which included (1) an increase in TT faculty over the next seven years, (2) a comparable increase in NTT faculty, (3) an increase in the number of GTAs, and (4) additional laboratory space. Our faculty, of course, agree with these recommended resources and are hopeful the university will take heed of the review committee's recommendations.

The Department Chair discussed potential plans with the Dean of the College of Letters and Science following the external program review, and was encouraged to develop the proposal because of the potential of the Psychological Science Ph.D. to further the goals of MSU's Strategic Plan. The MSU Psychology Faculty began actively developing the conceptual framework in Spring 2013 while preparing for External Program Review. The Psychology faculty have worked intensively as a team on the details of this proposal following the External Program Review in Fall 2013 until its submission in March 2013 and present revision based upon UGC feedback provided over the summer.

Appendices

- A. List of current, past, and potential collaborations among MSU faculty with Psychology faculty.
- B. Required psychology graduate research courses, current and pending graduate psychology content courses, and potential graduate content courses outside of psychology.
- C. Alternative graduate funding opportunities.
- D. Letters of support from prominent MSU collaborating faculty.

Appendix A:

Current, Past, and Potential* Research Collaborations among MSU faculty with Psychology Faculty

The Jake Jabs College of Business & Entrepreneurship

| Business | |
|------------------|----------------------------|
| C. Graham Austin | Ian Handley; Jessi L Smith |
| Omar Shehryar* | Matthew Vess |

College of Engineering:

| Computer Science | |
|--|---|
| John Paxton | Jessi L Smith |
| Chemical and Biological | |
| Christine Foreman | Jessi L. Smith |
| Electrical Engineering | |
| Brock LaMeres | Jessi L. Smith |
| Mechanical and Industrial Engineering | |
| Frank Marchak | Ian Handley; Keith Hutchison |
| Laura Stanley | Monica Skewes; Jessi L. Smith |
| Nic Ward | Keith Hutchison; Michelle Meade; Matthew Vess |

College of Letters and Science

| Cell biology and Neuroscience | |
|--------------------------------------|--|
| Frances Lefcort | A Michael Babcock; Rebecca Brooker |
| Behard Noudoost | Rebecca Brooker; Keith Hutchison |
| Renee Rejo-Pera | Rebecca Brooker |
| Chemistry | |
| Ed Dratz | Rebecca Brooker; Keith Hutchison; Michelle Meade |
| Earth Science | |
| Dave Mogk | Michelle Meade |
| Ecology | |
| Alexander Zale | Ian Handley; Jessi L. Smith |
| Jia Hu | Jessi L. Smith |
| | |
| History and Philosophy | |
| Kristen Intemann | Jessi L Smith |
| Robert Rydell | Keith Hutchison |
| Mathematical Science | |
| Elizabeth Burroughs | Ian Handley; Jessi L. Smith |
| | |
| Microbiology | |
| Sandra Halonen, | A. Michael Babcock |
| Political Science | |
| Sara Rushing | Ian Handley; Jessi L. Smith |

| | |
|--------------------|-----------------------------|
| Elizabeth Shanahan | Ian Handley; Jessi L. Smith |
| Physics | |
| Shannon Wiloughby | Jessi L. Smith |
| Nico Yunes | Jessi L. Smith |

College of Education and Human Health and Development

| | |
|-------------------------------------|-----------------------------------|
| Education | |
| Jayne Downey | Jessi L. Smith |
| Mary Leonard | Michelle Meade |
| Carrie Myers | Jessi L. Smith |
| Lynda Ransdell | Jessi L. Smith |
| Human Health and Development | |
| Elizabeth Asserson | Rebecca Brooker |
| Suzanne Christopher | A. Michael Babcock; Monica Skewes |
| Mary Miles | Jessi L. Smith |
| Ryan Niehuis | Rebecca Brooker |
| Beth Rink | Monica Skewes |
| Vanessa Simonds* | Monica Skewes |

College of Nursing

| | |
|--------------------|--------------|
| Nursing | |
| Yoshiko Colclough* | Matthew Vess |

Appendix B:

Required Psychology Graduate Research Courses, Current and Pending Graduate Psychology Content Courses, and Potential Graduate Content Courses Outside of Psychology.

Required Graduate Research Courses

Currently Offered Courses for our M.S. Program

PSYX 501 (Advanced Research Design and Analysis)

PSYX 502 (Advanced Statistical Analysis)

Required Graduate Teaching Course

Additional Courses proposed for the PhD Program

PSYX 505 (Teaching of Psychology, 1 cr, may be repeated once)

Psychology Graduate Content Courses

Currently Offered Courses for our M.S. Program

PSYX 539 (Physiological Processes)

PSYX 530 (Developmental Psychology, taught as a 594 course during spring 2013)

PSYX 541 (Cognitive Processes)

PSYX 542 (Learning)

PSYX 543 (Memory)

PSYX 544 (Social Psychology)

PSYX 546 (Social Cognition)

Additional Courses proposed for the PhD Program

PSYX 510* (Topics in Psychological Science, may be repeated up to 3 times, maximum of 9 cr)

Sample Optional Graduate Courses Outside of Psychology

Currently Offered Courses

BIOB 510 (Topics in Neurobiology)

BIOB 524 (Ethical Practice of Science)

EDLD 530 (College Teaching)

EIND 554 (Design of Experiments for Engineers)

EIND 557 (Regression and Multivariate Analysis)

LAC 502 (Psychopharmacology and Addictions)

LAC 504 (Alcohol and Drug Studies)

STAT 511 (Methods of Data Analysis I)

STAT 512 (Methods of Data Analysis II)

STAT 528 (Biostatistics)

STAT 532 (Bayesian Data Analysis)

STAT 541 (Experimental Design)

* This course is modeled on the successful BIOL 510, Topics in Neuroscience, taught as part of the graduate program in Cell Biology and Neuroscience.

Appendix C: Graduate Alternative Funding Opportunities

| Funding Agency | Award Name | Due Date | Award Amount |
|--|---|---------------|------------------------------|
| <i>Institutional Awards</i> | | | |
| NIH (NCI, NIA, NIAAA, NICHD, NIDA, NIMH, etc.) | Insitutional National Research Service Award (T32) | Standard | Variable |
| NIH (NCI, NIA, NIAAA, NICHD, NIDA, NIMH, etc.) | Short-term Insittuional Research Training Grant (T35) | Standard | Variable |
| NIH (NCI, NIA, NIAAA, NICHD, NIDA, NIMH, etc.) | Research Supp to Promote Diversity in Health-Related Research (Admin Supp) | Varies | Variable |
| <i>Other Opportunities</i> | | | |
| NIH (NCI, NIA, NIAAA, NICHD, NIDA, etc.) | NRSA Indiv Predoc Fellow, Diversity in Health-Related Research (F31- Diver) | Apr, Aug, Dec | Up to 4 yrs |
| NSF | Graduate Research Fellowship | Nov | 3 year, \$32K. \$12K tuition |
| NIH (NCI, NIA, NIAAA, NICHD, NIDA, etc.) | NRSA Individual Predoctoral Fellowship (F31) | Apr, Aug, | Up to 4 yrs |
| APA Minority Fellowship Program | Mental Health and Substance Abuse Services Fellowship | 1/15 | 3 years support |
| American Psychological Foundation | Elizabeth Munsterberg Koppitz Child Psychology Graduate | 11/15 | \$25,000 |
| American Psychological Foundation | Randy Gerson memorial Grant | 2/1 | \$6,000 |
| American Psychological Foundation | Various | 6/30 | \$1,000 - \$5,000 |
| American Psychological Association | APA Dissertation Research Award | 9/15 | \$1000-\$5000 |
| American Psychological Foundation | Benton-Meier Scholarships | 6/1 | \$2,500 |
| American Psychological Foundation | F.J. McGuigan Dissertation Award | 6/1 | \$2,000 |
| APAGS/Psi Chi | APAGS/Psi Chi Junior Scientist Fellowship | 6/30 | \$1,000 |
| American Psychological Association | APA Travel Award | 4/1 | \$300 |
| APA Division 7 | Dissertation Research Grant in Developmental Psychology | 3/15 | \$500 |
| APA Division 20 | Doctoral Dissertation Award in the Psychology of Aging | 3/15 | Not stated |
| APAGS | Basic Psychological Science Research Grant | 12/3 | \$1,000 |

Appendix D:
Campus Letters of Support for Psychology Ph.D. Program

- **Dr. Frances Lefcort:** Department Head, Cell Biology and Neuroscience, Interim Director-Center for Mental Health Research and Recovery
- **Dr. Linda M. Young:** Department Head of Political Science
- **Dr. Allen G. Harmsen:** Director of Montana INBRE and COBRE
- **Dr. Edward A. Dratz:** Professor of Chemistry and Biochemistry
- **Dr. Nicholas J. Ward:** Professor of Mechanical and Industrial Engineering; Director-Center for Health and Safety Culture.

Oct 21, 2014

To: MUS Faculty, Deans and Regents
RE: MSU Department of Psychology Ph.D program

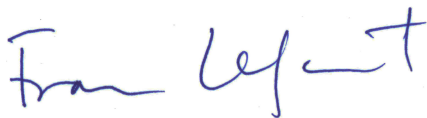
I enthusiastically support the proposed Psychological Science PhD program in Psychology. The Psychology department has a strong group of research-active faculty who collaborate with faculty in the Department of Cell Biology and Neuroscience (CBN). Several of the Department of Psychology faculty members are already integral members of our newly formed Center for Mental Health Research and Recovery (CMHRR) at MSU. From my point-of-view, there are many benefits to including a Psychology PhD program. I'll expand on these benefits below.

First, a Psychology PhD would facilitate existing and future collaborations between CBN, Psychology, and the new CMHRR. This interdisciplinary collaboration will, in turn, make us more competitive for federal grants. Including Psychology PhD students will enhance our ability to conduct collaborative research because the graduate students in Psychology will be trained in human and animal behavioral testing, with expertise in testing attention, memory, personality, psychosocial stress, anxiety, motivation, and well-being and in using equipment such as advanced EEG methods, pupillometry, oculomotor behavior, and mobile systems for electrodermal responses, heart rate, heart rate variability, vagal tone, genetics, and tissue histology. Also, these students will have expertise in assessing sensitive topics such as family history, family dynamics, and addictive behaviors and relating them to performance on objective behavioral measures. Including PhD students with such expertise will be essential for the growth and success of the CMHRR.

In addition to increasing research collaborations, adding a Psychology doctoral program will broaden our graduate students' course options, by offering doctoral-level courses in content areas of interest to many of our students such as Cognition, Memory, and Development. Similarly, interested Psychology doctoral students can increase enrollment in our CBN courses thereby enriching the graduate education experience of our students.

For these reasons and more, I greatly endorse this proposed program.

Sincerely,



Frances Lefcort, Ph.D
Professor and Head
Department of Cell Biology and Neuroscience
Interim Director, Center for Mental Health Research and Recovery



Dr. Keith Hutchison
Chair
Department of Psychology
Montana State University

October 25, 2014

Dear Dr. Hutchison,

Political Science

I am happy to support your department's proposal to replace your masters program with a doctoral program in Psychological Science. I think that the program you describe in your proposal meets several key criteria for such an undertaking. First, departmental support is strong and the faculty is distinguished both in research and the amount and quality of external funding they secure. They have a history of successful mentoring of graduate students and an understanding of the market for potential graduates of a doctoral program.

I agree that the proposal advanced by your Department for a doctoral program will advance several key MSU strategic objectives, including the creation of knowledge and the graduation of doctorates. I also believe that it will increase the opportunity for interdisciplinary research on campus, for example, this doctoral program may use the Human Ecology and Learning and Problem Solving Lab (a facility offering surveys of several types) that our department is developing and be a key partner with the Center for Mental Health and Recovery.

I fully support the creation of your doctoral program and look forward to having it increase our ability to collaborate with your department on research questions.

Sincerely,

Linda M. Young
Head, Dept of Political Science

2-143 Wilson Hall
Bozeman, MT 59717-0224
www.montana.edu/wwwpo

Tel (406) 994-4141
Fax (406) 994-6692
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Telephone (406) 994-7626

Fax (406) 994-4303

Email: aharmsen@montana.edu

Oct 27, 2014

To: Keith Hutchison, Psychology Department Head
Montana State University

RE: Psych Ph.D. support letter

Dear Dr. Hutchison,

I am writing this letter in support of your proposal for a new Ph.D. program in Psychological Science. A Ph.D. program in psychology would enhance research productivity not only within your department, but campus-wide. As PI of MSU's INBRE and COBRE grants, I recognize that NIH is moving in the direction of interdisciplinary collaborations and Multiple PI awards. Further, addressing the significant health disparities in rural Montana will require inter- and trans-disciplinary efforts among scientists, and psychology as a discipline will play an important role. Many of the priority health concerns of our Native American communities involve behavioral health, and a doctoral program in psychology will enhance our university's efforts to further rural health research in the state.

I see potential for the new Ph.D. program to advance opportunities for students, for faculty members from multiple departments who are working to develop careers as NIH-funded independent investigators, and for the MSU strategic plan. Regarding students, the Ph.D. program will provide training relevant to rural health and health disparities research. Students may be co-mentored by faculty in different disciplines and gain a breadth and depth of skills that can be applied to solving the complex health problems in Montana. Faculty may be more competitive for NIH funding with graduate students who stay at MSU beyond the two years required for the M.S. degree. MSU's status as a Carnegie Very High Research University will benefit from the potential increase in external funding and the increase in Ph.D.s conferred. And finally, the MSU strategic plan will be advanced in the areas of Learning, Discovery, and Integration.

In all, I am in favor of this proposed Ph.D. program and support the Psychology department in their efforts to bring this dream to fruition. Psychology has made some excellent young faculty hires in the last few years and has had many recent research successes with their established investigators. Thus, Psychology is definitely an up and coming research department at MSU. With this excellent trajectory of the department, developing a Ph.D. program at this point is well justified. Finally, investigators supported by my INBRE and COBRE grants will be more likely to succeed in their research careers if this program is approved, and it is my hope that they will be training the next generation of health researchers to further address rural and Native American health disparities in Montana. Thus, I offer my wholehearted support and enthusiasm for this proposal.

Sincerely,

A handwritten signature in blue ink, appearing to read "Allen G. Harmsen". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Allen G. Harmsen, Ph.D.
Professor and Director of Montana INBRE and COBRE
Immunology and Infectious Diseases
Montana State University



Edward A. Dratz
Professor of Chemistry & Biochemistry
Montana State University
Bozeman, MT 59717

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406-994-5407 (Fax)
dratz@chemistry.montana.edu
<http://www.chemistry.montana.edu/dratz.html>

Oct 21, 2014

Keith Hutchison
MSU Psychology Department

RE: Psychology PhD Program support letter

Dear Keith,

I am pleased to write a letter of support for the Psychology Department PhD proposal. I have been increasingly interacting with members of the Psychology Department at MSU in my research efforts. I am interested in more fully understanding and demonstrating the crucial role of the “nutrition dimension” in brain development, cognitive performance, attention, depression and cognitive decline. Thus, interactions with members of the MSU Psychology Department have been and I expect will increasingly be important for the continued development of my research program.

I am a Co-investigator, with two MSU psychologists, on a pending proposal to the Montana Mental Health Trust to better understand nutritional factors which can predict short-term and long-term success of treatment for suicide ideation. This proposal, *The Montana 10,000 Pilot: Biomarkers of responsiveness to treatment for depression and comorbid symptoms in at-risk college students*, is the first step in seeking funding for a new Center for Mental Health Research and Recovery at MSU that was recently approved by the Montana Board of Regents. We expect that this Center will grow to follow the factors that influence the mental health of a large number of Montana citizens by mounting additional projects.

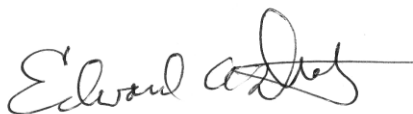
I am the PI of a pending NIH R01 proposal, with two other MSU psychologists as co-investigators, titled *Mitigation of Health Disparities in Native American Youth using Nutritional Intervention*, which promises to greatly improve the school performance and mental health of Native American children. This is proposed to be a five year program on one reservation in Montana, but if successful there is interest from the Montana Department of Public Instructions GEAR UP program to expand this effort to all the low performing Montana Schools on and off the reservations.

My research program is multidisciplinary, involving Plant Sciences (for development of crops with improved nutrient content), Education (for assessing effects of nutritional improvement on educational performance), Health and Human Development (for assessment of physiological and physical performance), Biological and Chemical Engineering (for modeling metabolic networks), Electrical and Computer Engineering (for improved data acquisition and evaluation systems), and several biosciences

groups on campus. I have been one of the leading NIH research grant support recipients at MSU over the years and I believe that my current research direction will be strongly supported by external grants from a variety of sources. A Psychology PhD program at MSU will greatly facilitate productive research collaborations by allowing PhD students trained in psychological methodology and their faculty mentors to fill important roles on many of these federally-funded interdisciplinary projects.

All of these research efforts have direct or indirect connections to assessment of psychological variables and there will surely be many opportunities to co-mentor graduate and undergraduate students with PIs in psychology. I believe a PhD program in Psychology would enhance research productivity not only in my research program but on many research efforts, campus-wide. Additional PhD programs will enhance the pursuit of the mission of MSU and contribute to retaining MSU's status as a Carnegie tier 1 research university, which is a major expressed goal of MSU faculty.

Sincerely,

A handwritten signature in cursive script that reads "Edward A. Dratz". The signature is written in black ink and is positioned above the printed name.

Edward A. Dratz
Professor of Chemistry and Biochemistry

Oct 21, 2014

To: Keith Hutchinson, Associate Professor & Chair, Department of Psychology
From: Nic Ward, Professor of Mechanical and Industrial Engineering, Director of Center for Health and Safety Culture.
RE: Psych PhD support letter

I offer my strongest support for the proposed Psychological Science PhD program in Psychology. The Department of Psychology has growing group of faculty that are successful researchers in many areas that support collaboration with multiple disciplines.

No doubt the application by the Department of Psychology for their proposed Psychology PhD program espouses all the reasons that department is seeking this new program. So let me comment on how the success of this program would have benefits outside the program. In particular, I want to share several reasons how this program can benefit research within the College of Engineering and across the university.

First, I am the Director of the Center for Health and Safety Culture within the College of Engineering. This is a multi-disciplinary center that studies the role of social and cultural factors in decisions about health and safety behaviors across the social ecology. One of my goals as the director of this center is to establish collaborative relationships with other disciplines across campus. Indeed, I have already collaborated with many of your colleagues including yourself. However, we also have a need to have high quality PHD students to work on our research projects. Preferably, these would be PHD students with a background in the social sciences. In many cases, we can not find such qualified students within the College of Engineering. The proposed Psychological Science PhD program in Psychology would be an important source for qualified students with the background we require.

Second, as a Professor of Mechanical and Industrial Engineering, I teach product and system design including usability testing. In these courses I adopt the human-centered approach to defining systems and approaching design solutions. This approach is naturally founded on the psychology of humans. And so, psychology plays a fundamental role in these courses. It is therefore possible that these courses could be part of the elective courses for the Psychological Science PhD program in Psychology. This is the area of interdisciplinary collaboration you and I have discussed in relation to the interface between engineering and psychology (Engineering Psychology). In this regard, the expertise in our two departments is ideal for investigating this topic and I foresee Psychology and Engineering PhD students conducting research within both departments, taking courses in both departments, and having co-mentors across departments. Increased interdisciplinary funding for collaborative projects in Engineering Psychology should also support doctoral student growth and support within both departments.

Finally, the proposed Psychology PhD should support MSU's status as a "very high research university" (Carnegie), through increasing the number of PhD programs and graduates. Out of the 108 Carnegie top research universities, MSU is third from last in conferring doctoral students and one of only 3 schools without a Psychology PhD program. This impact on supporting our Carnegie 1 status will continue to increase the quality of students and faculty coming to MSU. And so, it would benefit the entire university community.

For these reasons, I greatly endorse this proposed program.

Sincerely,



Nicholas J. Ward
Professor of Mechanical and Industrial Engineering
Director, Center for Health and Safety Culture