

AGENDA
For
UNIVERSITY GRADUATE COUNCIL

Monday, April 07, 2014

9:00 a.m.

103 Sherrick Hall

Opening – 9:05am

Introduction of New Member – Dr. John Borkowski, Letters & Science (Sciences) Mathematical Sciences

Open Campus Forum – Comments from campus visitors

Approval of Minutes – March 24, 2014

Guest presenter – Dr. Colleen Moore, Department Chair, Psychology
Level II PhD in Psychological Science Proposal

Committee Updates and Reports

- Policy and Procedures Committee (Murphy, Shreffler-Grant, Borkowski)
 - Video Conferencing Policy
 - Inactive Students

- Curriculum Committee Report (Ruff, Livingston, Myles)
 - * Course Changes: BIOE 521, NRSG 509
 - o *Reviewed by Dean Hoo BIOM 525, ENTO 510, LRES 552, MB 544, WILD 504, WILD 513*
 - * Course Deletions:
 - o *Reviewed by Dean Hoo EENV 535, EENV 564, PSCI 573*
 - * New Course Requests: PSYX 505, PSYX 510
 - o *Reviewed by Dean Hoo AMST 689, BIOH 565, CSCI 591-850, FILM 524, KIN 525, NRSG 609, NRSG 620, NRSG 621, NRSG 630, NRSG 631*

- Governance Report (Dyer, Codd, Christensen, Reidy)
 - o Graduate Committee composition wording

Discussion Items

- Nomination for Vice Chair of the UGC
- Confirmation of the Chair of the UGC
- Takeaways from the WAGS conference Spring 2014, Fargo, ND

End: 11:55am

Next scheduled meeting – April 21, 2014 9:00-11:00 am Sherrick 103

*Documentation on UGC shared drive

**Montana Board of Regents
LEVEL II REQUEST FORM**

Item Number: XXX-XXXX-XXXXX Meeting Date: _____

Institution: Montana State University --
Bozeman CIP Code: _____

Program Title: Ph.D. in Psychological Science

Level II proposals require approval by the Board of Regents.

Level II action requested (place an X for all that apply and submit with completed Curriculum Proposals Form):

Level II proposals entail substantive additions to, alterations in, or termination of programs, structures, or administrative or academic entities typically characterized by the (a) addition, reassignment, or elimination of personnel, facilities, or courses of instruction; (b) rearrangement of budgets, cost centers, funding sources; and (c) changes which by implication could impact other campuses within the Montana University System and community colleges. Board policy 303.1 indicates the curricular proposals in this category:

1. Change names of degrees (e.g. from B.A. to B.F.A.)
2. Implement a new minor or certificate where there is no major or no option in a major;
3. Establish new degrees and add majors to existing degrees; and
4. Any other changes in governance and organization as described in Board of Regents' Policy 218, such as formation, elimination or consolidation of a college, division, school, department, institute, bureau, center, station, laboratory, or similar unit.

Specify Request:

To establish a Ph.D. in Psychological Science at Montana State University—Bozeman. See attached Curriculum Proposal.

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CURRICULUM PROPOSALS

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

1. Overview

The Ph.D. in Psychological Science is intended to 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 training of practitioners 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 one of the core academic fields 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 the PhD in Psychology with an emphasis on Psychological Science. At the same time MSU ranks 106th in doctoral conferrals among the Carnegie top research universities⁴. The Psychological Science PhD will also contribute to the *Discovery* metrics by increasing the number of doctoral conferrals, attracting and retaining faculty members with national recognition as well as memberships of faculty on government review panels⁵. Importantly, the program will contribute to all metrics of Objective D.3. "Expand the scale, breadth and quality of doctoral education"⁶. Because our

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

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

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M.S. students are currently 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.3.4⁷.

- **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 students⁸. 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. PhD 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 paramount⁹. In the Western U.S. access to research-based doctoral education in Psychological Science is limited. Only two Big Sky Conference universities had a Psychology “research doctoral” program ranked by the National Academy study (UC-Davis and NDSU)^{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.

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.

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 the universities of the Big Sky Conference there are 6 schools with a PhD in aspects of Psychological Science (University of California—Davis, University of North Dakota, North Dakota State University, Idaho State University, University of Montana, Portland State University) and 4 that offer a PhD in Clinical Psychology (Idaho State University, University of Montana, North Dakota State University, University of North Dakota). Only NDSU and UC—Davis appear in the National Academy rankings.

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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 research. The Psychology Department laboratories will provide Ph.D. students with access to state of the art equipment for latest research methods in cognitive, social and affective, and behavioral neuroscience across the lifespan and across species. The equipment includes the following: 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 Job prospects are also good for graduates with strengths in neuroscience and the science of aging¹³; 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.¹⁴ Idaho and Montana had no Psychology research doctoral programs in the National Academy rankings. (The University of Montana Psychology Department PhD was not included as a research doctoral program in the National Academy study.¹⁵) The National Academy report emphasizes the

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

¹³ <http://www.apa.org/gradpsych/2011/03/cover-sunny.aspx>

¹⁴ <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.

¹⁵ The 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

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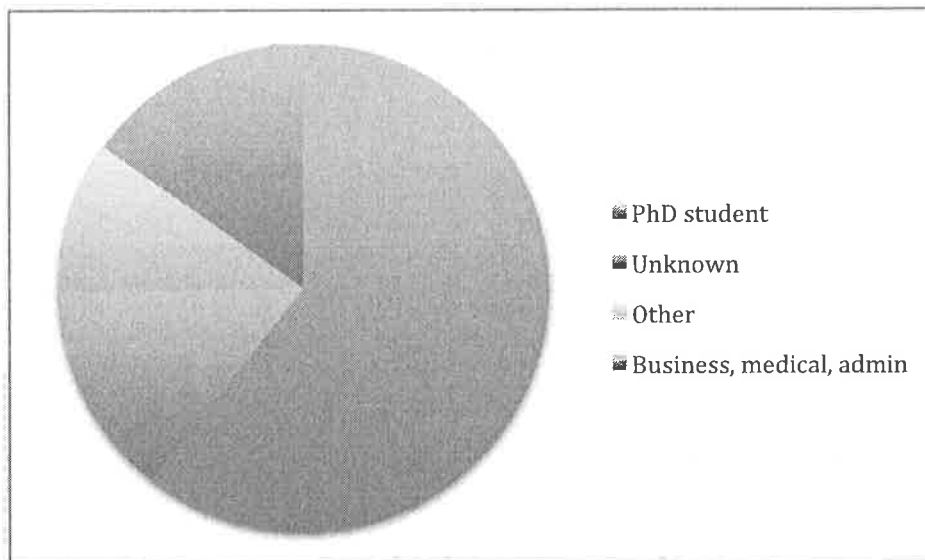
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important role of public universities in doctoral education, “The health of research and doctoral education in the United States depends strongly on the health of public education.”¹⁶ As mentioned earlier, among the schools of Big Sky athletic conference, only NDSU and UC-Davis have a research doctoral program in Psychology.

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

Approximately 3% 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 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.

Figure 1. 60% of M.S. graduates since 2003 have become PhD students at other universities.



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 2 and 7 students per year (a

Sciences, Biochemistry, Chemistry, Biology, Earth Sciences, Mathematics, Physics, Fish and Wildlife Biology, Immunology and Infectious Disease, Microbiology, and Engineering.

¹⁶ <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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ratio of demand to admissions of approximately 3 to 1). Most of our current M.S. students applied to other PhD programs and are seeking the M.S. to enhance their credentials for admission to the Ph.D. elsewhere. Hence, we anticipate more applications than we receive for our MS program (currently approximately 18-20 complete applications).

4. Institutional and System Fit

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

The existing M.S. in Psychological Science will form the foundation for the Ph.D. in Psychological Science. The first two years in the Ph.D. in the Psychology Science begins with a combination of coursework and faculty-mentored research. The current Psychology Department faculty have proven that they are highly effective in mentoring M.S. students in research. 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. At the same time, Psychology faculty maintain collaborations on campus (e.g., in Cell Biology and Neuroscience) that will enhance interdisciplinary work.

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

No. The M.S. in Psychological Science program will continue, but we anticipate that approximately 60% of the students will continue for the Ph.D. and will be qualified to continue the PhD at MSU.

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

There are no closely related programs at MSU outside of the Psychology Department's own M.S. in Psychological Science. 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 Engineering¹⁷. The Psychological Science Ph.D. will encourage students to take one additional research methods course other than the 2 offered by the Psychology Department. Some students in our PhD program may wish to take EIND 554, Design of Experiments for Engineers, or EIND 557, Regression and Multivariate Analysis. Similarly, some students in our program may wish to take STAT 511 and 512, Methods of Data Analysis I and II.

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

Figure 1 illustrates the ways in which the Psychological Science PhD 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

¹⁷ http://www.coe.montana.edu/ie/gradprog/PhD_program.htm

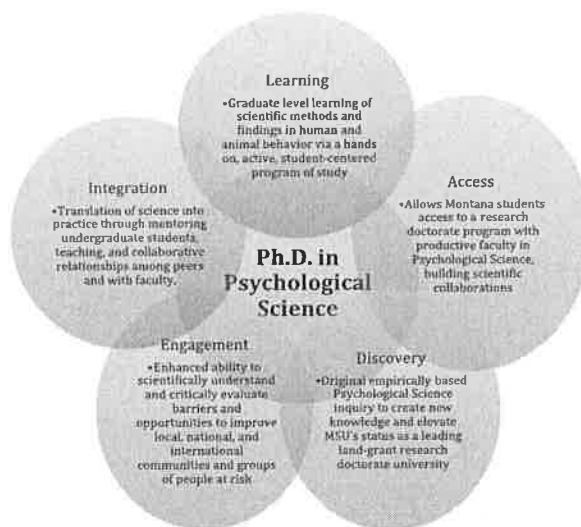
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Carnegie Foundation Very High Research Activity designation, and produces a relatively small number of PhDs per year. MSU's strategic plan 2012 calls for an increase of in the number of PhDs awarded per year.

A second central part of MSU's strategic plan is that more undergraduates integrate learning and engagement. The PhD 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 PhD in Psychological Science with the MSU Strategic Plan



- 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

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2005 and 2011¹⁸. 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 PhD options (formerly titled Psychology, Animal Behavior, and Developmental Psychology, with 4, 5 and 4 PhDs in 7 years, respectively) into one 'Experimental Psychology' PhD. The two non-clinical options that produced the most PhDs 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 PhD 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 PhD from the National Academy rankings of research doctorate programs punctuates the clinical practitioner emphasis of the U of M Psychology PhD program.

Some faculty from the MSU and U of M Psychology Departments met together in 2010 to discuss the possibilities of a PhD in Psychological Science 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 PhD initiative when you are ready to go forward with it."¹⁹ (see full email in the addendum).

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 masters degree from either MSU or another program. Credits from a masters degree from another university with a focus on psychological science may be accepted toward the PhD in Psychological Science subject to approval by the department. At least 10 credits of coursework must be beyond the Masters 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. 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 satisfactory progress recommendation to the Department.

¹⁸ M.U.S Program Review documents, 2011-12, p. 2.

¹⁹ Email, Perry Brown to Martha Potvin, April 24, 2013.

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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 one or more graduate level courses from outside the department may be counted toward the PhD in Psychological Science.
- Each student must present a written dissertation proposal, and give an oral presentation of the proposal to the dissertation committee, and take 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 by the end of 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 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 A for the Psychology Department list of courses.

First year

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

Second year

- semester 1, 9 cr: Psyx graduate content course, Psyx graduate content course, 3 cr Masters Thesis Psyx 590.
- semester 2, 10 cr: Psyx 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 PhD; optional for terminal MS students).

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

Third year

- semester 1, 9 cr: Psyx 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: Psyx graduate content course, 6 cr Doctoral Thesis Psyx 690.

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Fourth year

- semester 1, 6 cr: Psyx 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)

Table 1: 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					
Psyx 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.

Implementation can occur as early as Fall 2015. Implementation would begin with announcement of 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.

Students working toward the M.S. in Psychological Science during Spring semester 2015 may apply to and be accepted into the Ph.D. program during their final semester of the M.S. program. Therefore we anticipate our first Ph.D. graduates as early as May 2017, with up to 4 students graduating in the initial class.

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Based on current faculty resources (10 tenure-track faculty), the department expects to have a total of 13~16 students enrolled in the program at one time (financial support for 11.5 as GTAs, 2 supported by adjunct teaching, and 2 or more supported by faculty grants). We can accept 4 students per year sustainably into the PhD program, providing financial support for the first 4 years, and graduate a similar number per year. With additional GTA positions to support our undergraduate teaching mission, and/or tuition remission funding from the Graduate School, we could graduate 5 to 6 PhDs per year, and would have approximately 20~25 enrolled at one time (2 or 3 students per tenure-track faculty member).

Table 2: Projected enrollment with current graduate student financial support resources (see Section 6.B below).

Academic Year	Student year enrolled				2-year MS Graduates	4 th year PhD Students	Annual total enrollment
	1st	2nd	3rd	4th			
2015-16	4	4	2		4		10
2016-17	4	4	4	2	4	2	14
2017-18	4	4	4	4	4	4	16
2018-19	4	4	4	4	4	4	16
2019-2020	4	4	4	4	4	4	16
5 year total					20	14	

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 (11.5 50% appointments) resources. See also section 6.B. below.

The PhD 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 PhD program to be a positive 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 Engagement in research 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

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new Psychology faculty member hired in 2013 brought in an NIH grant at the time of hire, and faculty have submitted 7 grant proposals to funding agencies in the past 12 months. All faculty members in the Psychology Department are research-active, supervising graduate and undergraduate students in labs, presenting at national, international and regional conferences with students as co-authors, and publishing 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. 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 13 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 PhD'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 PhD in Psychological Science can be initiated with current resources.

Graduate student financial support. The limiting factor on number of students admitted to the PhD 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 PhD in Psychological Science additional funding for graduate students is highly desirable. At present the Psychology Department has 11.5 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. Four students per year can be sustainably admitted to the PhD program by using 11.5 GTA 50% positions plus having graduate students as adjunct instructors part of their 3rd to 4th years.

Table 3: Currently available and projected financial resources for graduate students.

Source	GTA	Adjunct Teaching	Faculty Grants / Student Fellowships	Total
Number of students	11.5	2.5	2	16

Table 3 Notes: GTA and Adjunct Teaching appointments are currently available. Faculty grant and student fellowship support is projected.

One strength of our Ph.D. proposal is training in the teaching of psychology. Students will begin with GTA duties in labs Introductory Psychology. In their 4th and 5th semesters students will take the 1cr Teaching of Psychology course. 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. Teaching undergraduate courses as the 'instructor of record' will enhance our students' marketability

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at graduation. The department will request tuition remission from the Graduate School for those students serving as adjunct instructors. If tuition remission is not available for 2.5 students as adjunct instructors, the adjunct courses will likely be staffed by non-graduate students (as is currently the case). Some PhD program students may choose adjunct teaching even without a tuition waiver. Depending on the availability of tuition remission, it may be necessary to admit fewer than 4 students per year.

Non-teaching sources of graduate student funding will be available to PhD students that are not available to M.S. students, including:

- prestigious NSF Graduate Pre-doctoral Fellowships,
- NIH pre-doctoral fellowships (supports up to 4 years; normally students in the dissertation years have the best chance of obtaining these grants)
- graduate research assistantships from faculty grants
- active duty military personnel seeking graduate degrees (students are funded directly by their service branch for a limited time period in graduate school, a maximum of 3 years for a PhD).

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 PhD in Psychological Science: research activity, student support and outcomes, and diversity of educational environment.²⁰ 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)

²⁰ <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

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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 PhD 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 PhD programs at other institutions (more than 50% apply to PhD programs elsewhere, and 90% are accepted, see section 3.B above).

The recruiting of tenure-track faculty in the last 10 years has included discussion of the possibility of a PhD program, and all those hired have expressed enthusiasm about developing the PhD in Psychological Science. The PhD program will enhance faculty retention. The Psychology Department faculty have actively discussed developing a PhD 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 PhD program with the current department faculty and with the Dean of Letters and Science.

The 2013 External Program Review of the Department viewed the Psychology Department's potential for a PhD program as very favorable based on the high research productivity of current faculty and graduate students. The current Department Chair discussed potential plans with the Dean of Letters and Science following the External Program Review, and was encouraged to develop the proposal because of the potential contributions of the Psychological Science PhD to meeting 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 members have worked intensively as a team on the details of this proposal following the External Program Review in Fall 2013, until its submission at present.

Addenda

1. Email, Perry Brown to Martha Potvin, forwarded to Colleen Moore and Nicol Rae, April 24, 2013
2. Course proposal for Psyx 510, Topics in Psychological Science (may be repeated up to 3 times, maximum of 9 cr). (Note: This course is modeled on the successful BIOL 510, Topics in Neuroscience, taught as part of the graduate program in Cell Biology and Neuroscience.)
3. Course proposal for Psyx 505, Teaching of Psychology, graduate level 1 cr course (may be repeated once).

"Potvin, Martha" <mpotvin@montana.edu>

April 24, 2013 2:38 PM

To: "Rae, Nicol" <nicol.rae@montana.edu>, "Moore, Colleen" <colleen.moore1@montana.edu>

FW: Psychology

FYI!

I will assume that we will not oppose their name change.

Martha A. Potvin
Provost/Vice President for Academic Affairs
Montana State University
Bozeman, MT 59717

From: Brown, Perry [mailto:perry.brown@mso.umt.edu]

Sent: Wednesday, April 24, 2013 9:15 AM

To: Potvin, Martha

Subject: Psychology

Martha—

We keep missing opportunities to close the loop on the Psychology PhD issue. I spoke with our Psychology folks and we want to move the level 1 proposal forward that involves simply consolidating two options into one and renaming it as Experimental Psychology, one of the most common labels for such options across the country. Our folks have no problem with MSU moving forward with a PhD proposal for Psychology at whatever is the appropriate time for you. Since the two programs do quite different aspects of Psychology, which is as we know a very diverse discipline, they are willing to support a PhD initiative from MSU when you want to go forward with it.

I've have put this in writing in the hope that there is no misunderstanding about our commitment to support MSU Psychology. We simply need to get our program cleaned up and labeled in a recognizable way.

Perry

Perry Brown
Provost & Vice President for Academic Affairs
The University of Montana
Missoula, MT 59812
(406)243-4689
perry.brown@umontana.edu

Miller, Sarah

From: Storment, Jennifer
Sent: Friday, March 14, 2014 11:31 AM
To: Miller, Sarah
Subject: FW: Proposal for PhD in Psychological Science
Attachments: MontanaBORCurricProposalPsychologicalSciencePhD03052014.pdf; ATT00001.htm

From: Colleen F Moore [mailto:colleen.moore1@montana.edu]
Sent: Wednesday, March 05, 2014 10:34 PM
To: Peter Tillack
Cc: Zajdel, Melody; Storment, Jennifer
Subject: Re: Proposal for PhD in Psychological Science

Dear Peter and Melody,

Attached is the proposal for a PhD in Psychological Science, very slightly revised according to the curriculum committee's suggestions.

The changes are:

1-- add on p. 7 that the full email from Perry Brown to Martha Potvin is in the Addenda, and on p. 13 list the email as the first addendum, and add the pdf printout of the email immediately following p. 13

2-- on p. 11, I have moved Table 3 on graduate student support up one paragraph, and on p. 12, the section about adjunct teaching as graduate student support now reads:

"The department will request tuition remission from the Graduate School for those students serving as adjunct instructors. If tuition remission is not available for 2.5 students as adjunct instructors, the adjunct courses will likely be staffed by non-graduate students (as is currently the case). Some PhD program students may choose adjunct teaching even without a tuition waiver. Depending on the availability of tuition remission, it may be necessary to admit fewer than 4 students per year."

Thanks for your thoughtful reading, I'm sure those modifications will help smooth the way ahead.
colleen