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PROGRAM DESCRIPTION

DOCTORAL PROGRAM IN EXPERIMENTAL PSYCHOLOGY

DEPARTMENT OF PSYCHOLOGY

WASHINGTON STATE UNIVERSITY

I. GOALS OF THE EXPERIMENTAL PROGRAM

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The doctoral program in experimental psychology at Washington State University is designed to produce highly skilled experimental psychologists. Degree recipients are expected to be highly knowledgeable about their specialty areas, to have a strong background in general psychology, to be able to identify significant research problems, and to be conversant with a wide variety of strategies for generating and testing hypotheses that emerge from these problems. It is expected that each graduate

will leave Washington State University well equipped to become a productive member of the scientific community. The program is designed to be completed in ≤ 4.75 years, for students entering without a master's degree (≤ 3.75 years for students entering with a master's degree).

Each student will build his/her program of study around one or more specialty areas (Cognition, Biological, Social, Industrial/Organizational, Health, Applied Quantitative Methods) that are described later in this document. Through a combination of core courses and electives, the student designs a program of study suited to her/his particular interests and career objectives, whether such interests are in academic or applied experimental psychology.

The Ph.D. program in experimental psychology at Washington State University is one of the oldest in the West, and over the years the department has established a reputation for producing well-trained psychologists who contribute to basic and applied experimental psychology in academia, government service, and private industry. In recent years, graduates of the experimental program have obtained teaching and research positions in colleges and universities, applied research positions in private industry and hospitals, administrative/research positions in municipal and state agencies, and basic research positions with federal agencies.

II. ADMISSION

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The experimental psychology training program typically admits six new graduate students every year, and has approximately 30 students in the doctoral program at any one time. Faculty review applications and make admissions recommendations to the experimental program director. The factors used to assess qualifications are:

(a) undergraduate GPA (average of admitted students ≥ 3.56)
(b) graduate GPA, if any
(c) scores on the general GRE test (average of admitted students = 1180 V + Q). The psychology GRE is not required.
(d) letters of recommendation
(e) research experience
(f) background in statistics and experimental methods
(g) background in math, physical, biological, and computer sciences
(h) activities and jobs related to psychology
(i) teaching experience, if any
(j) goodness of fit in terms of research interests, with one or more WSU Psychology faculty

The extent to which the applicant's interests match those of the faculty is very important; applicants are encouraged to discuss in their personal statements with whom they would like to study and why. Applicants should also contact prospective mentor(s) to discuss shared interests and determine whether the prospective mentor intends to recruit a new student in the following year. Every effort is made to evaluate each applicant individually; students who have special skills or qualifications that they feel strengthen their application are encouraged to state them. Interested students should apply online: http://www.wsu.edu/psychology/graduateprograms/experimental/gradapplication/

Faculty are selective in the admissions process because they expect that students admitted to the program will complete their Ph.D. degrees at Washington State University in a timely manner. The department does not admit a large entering class and then drastically reduce the class at the end of the first or second year. Rather, we attempt to provide the instruction and financial support needed for every student to become a skilled experimental psychologist and to earn the Ph.D. degree.

The graduate program in experimental psychology at Washington State University admits students based on a careful assessment of their potential as psychologists, without regard to race, sex,

or creed. Nonetheless, admission from under-represented students is valued as an important goal and special efforts are made to facilitate admission of qualified racial/ethnic groups. The experimental psychology program welcomes applications from any student who feels she/he is qualified, and who has identified one or more faculty whose research interests closely match her/his own. In case of financial need, the Graduate School may waive the application fee.

III. FINANCIAL SUPPORT

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There are a variety of sources of financial assistance available within the Department of Psychology. The most common forms of support are halftime teaching assistantships (academic year and summer) and research assistantships. Special funding may be available for qualified minorities. Admission into the graduate program is usually accompanied by a 4-year commitment of financial support; the majority of students in the program over the past 30 years have received a *minimum* of 9-months/year support for 5 years.

IV. SPECIALTY AREAS

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The experimental program emphasizes several major specialty areas: Cognition, Biological, Social, Industrial/Organizational, Health, and Applied Quantitative Methods. The specialty areas provide a broad intellectual context in which specific interests in that area can be pursued. The following describes how each of the specialty areas is conceived of by the faculty.

A. Cognition (Pullman and Spokane campuses)

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Cognitive research has enjoyed much activity and success during the last four decades. Interest areas include memory, language, and general information processing at both the micro and macro levels. Moreover, interest in cognitive properties extends beyond the domains traditionally set by the field. These include areas such as attention, perception and artificial intelligence. Students entering the program with an emphasis on cognition will follow the general requirements of all experimental students and must take Psych 592 (Memory and Cognition), then design an elective program that suits their specific needs and aspirations. It is expected that students in this specialty area will take supplemental courses in computer science, statistics, and neuroscience, based on consultation with a faculty advisor.

B. Biological (Pullman and Vancouver campuses)

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Some of the most significant advances in science are being made in the neurosciences, and biopsychologists are at the heart of this work. The biopsychologists in this department combine behavioral and neuropharmacological approaches in teaching students to understand and explore the relationship between the biology of the organism and its behavior. We are progressively incorporating neurochemical, immunohistochemical, molecular and genetic techniques to determine causation of behavior from numerous perspectives. We collaborate with faculty in the department of Veterinary Comparative Anatomy, Pharmacology and Physiology (VCAPP, including the Program in Neuroscience) and the College of Pharmacy (Program in Pharmacology/Toxicology). These collaborations greatly facilitate the quality of training and the post-doctoral and job placement opportunities for our students. Students who select this specialty area are expected to take, in addition to the core course in biopsychology (Psychology 574), graduate courses in Behavioral Pharmacology (Psychology 577) and Neuroscience (various). Supplemental courses for the biopsychology specialty

area should be selected through consultation with an advisor and may include courses in pharmacology/toxicology, reproductive biology and molecular biosciences.

C. **Social** (Pullman campus)
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The social psychology area offers the student flexibility in planning individualized programs across a number of traditional and contemporary areas within the discipline. Areas of faculty expertise encompass laboratory-based studies of interpersonal processes, the study of individual differences in social behavior, and the interface between social factors and physical health. Graduates in this area may find employment in academic settings, or in government agencies, private research firms, and businesses. It is expected that students will complete Psychology 550 (Attitudes and Social Cognition) and will select other courses in consultation with the advisor. Training in statistics and methodology beyond the departmental core requirements will be encouraged.

D. **Industrial/Organizational** (Vancouver campus)
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Industrial/organizational psychology is the scientific study of psychology applied to the workplace. Faculty areas of expertise focus on occupational health psychology and examine the impact of a variety of workplace stressors (e.g., job insecurity, work-family conflict, sexual harassment, discrimination) on individual, job-related, and organizational outcomes. Students pursuing this track will be expected to complete Psych 519 (Industrial/Organizational); additional courses relevant to the student's research will be selected in consultation with the advisor. In general, students are encouraged to seek advanced training in quantitative and statistical methods and to enroll in relevant coursework available through the Business Management Department.

E. **Health** (Vancouver campus)
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Health psychology focuses on how biological, psychological, environmental, and cultural factors impact health and illness. Research in health psychology examines: the causes and development of illness, methods to help individuals develop healthy lifestyles to promote good health and prevent illness, interventions to help people cope with and reduce stress and pain, biopsychosocial connections with immune functioning, and factors in the recovery, rehabilitation, and psychosocial adjustment of individuals with serious health problems, including mental health problems. Faculty research interests include: child and maternal health; quality of life in medical populations; mechanisms and clinical treatment of pain; cardiovascular functioning in women; occupational health, well-being, and safety; methodological and statistical approaches to health research; neuropsychological substrates of mental and physical health; substance abuse and mental health.

Note that the Health Psychology interest area within the Experimental PhD program does not prepare students to be clinical psychologists. If you are interested in a Ph.D. in clinical psychology, please consult the description of the clinical psychology program.

F. **Applied Quantitative Methods** (Pullman and Spokane campuses)
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The purpose of this interest area is to prepare graduate students for research careers in the fields of human mental and physical health, specifically as experts in data analytical techniques. This interest area requires a series of courses in quantitative methods (Psych 511, 512, 514, 515, 516), as well as courses in experimental and clinical psychology, in conjunction with training in research. Together these courses provide students with the knowledge and skills to conduct high quality research

in several broad areas (e.g., abnormal psychology, health psychology, alcohol and drug use). Students who focus on this interest area will master advanced quantitative skills and apply these skills to a particular research area within the realm of mental and physical health.

Note that this interest area does not prepare students to be clinical psychologists. If you are interested in a Ph.D. in clinical psychology, please consult the description of the clinical psychology program.

V. FACILITIES

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The Psychology Department has modern specially designed laboratories and equipment for a wide variety of research in learning and cognition, sensory and perceptual processes, and biopsychology, and observation facilities for clinical research and training and for the study of social interaction. Laboratory animals are maintained in the Johnson Tower vivarium for biopsychology research. The department also maintains electronic, metal, and wood shops for the construction and maintenance of equipment.

Additional facilities available to department faculty and students include the Psychology Clinic, a self-sustaining teaching clinic, providing opportunities for clinical practica and research. The department also maintains working relationships with WSU Health and Wellness (Pullman), and with the WSU Health Research and Education Center located in Spokane, thus permitting access to medical health professionals in the Pullman and Spokane areas. The department maintains computer terminals connected to the main university system, and microcomputers for experimental control and data analysis. Word-processing and high-speed reproduction equipment is housed within the department to facilitate preparation of manuscripts, grant proposals, posters and other scholarly works.

VI. MAJOR STEPS IN THE GRADUATE CAREER

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Year 1: begin coursework; propose M.S. thesis research [T-1]
Year 2: complete coursework; defend M.S. thesis research [T-2]
Year 3: prepare for and complete (pass) preliminary exam
Year 4: propose Ph.D. dissertation research [D-1]
Year 5: complete and defend Ph.D. dissertation research [D-2]

A. Master's Degree

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1. All students are expected to obtain an M.S. degree on their way to the Ph.D., unless they enter the program with an acceptable master's degree from another institution. M.S. theses from other institutions should be submitted before matriculation (preferably by July 1) so that acceptability of the thesis can be determined as soon as possible. Up to 13 credits of relevant graded coursework completed in another graduate program may also be applied to the Ph.D.; detailed syllabi should be submitted as soon as possible so that previous coursework can be evaluated for possible transfer.

2. During the first year of residence (typically during the second semester), the student selects faculty members to serve on her/his master's committee. The chairperson must be a member of the Psychology Department faculty. Any exception to this must be approved by the Experimental Advisory Committee, the department chair and the Graduate School.

3. The master's committee consists of three or more faculty members, including the chairperson, two of whom are typically members of the Psychology Faculty (exceptions must be approved by the Experimental Advisory Committee). When the student has finished a research proposal, a meeting of this committee is held (the T-1 meeting) to discuss and approve the research plan. The T-1 meeting is an "informal" meeting; that is, it is not scheduled through the Graduate School.

4. The "non-thesis" M.S. program involves the completion of a potentially publishable research paper rather than a formal thesis – this option is recommended for all students who are able to complete 26 credit hours of graded coursework by the semester in which they defend their thesis. The "non-thesis" M.S. includes at least 30 credit hours: a minimum of 26 hours of graded course work plus a minimum of 4 credits of Master's Special Problems (Psychology 702). All students matriculating in Pullman are expected to complete the "non-thesis" M.S. program in order to facilitate publication of their master's research.

5. In addition to the regular "non-thesis" option, the department also offers a "thesis option". The procedures for developing thesis research are essentially the same as for the "non-thesis" option, except that a formal thesis must be submitted to the Graduate School. The "thesis" degree program consists of at least 30 hours of credit, including a minimum of 21 hours of graded coursework plus a minimum of 4 credit hours of Master's Research (Psychology 700). Currently, only students matriculating at Vancouver (who may have less access to graduate courses) may select this option without prior approval of the Director of Experimental Training.

6. The "non-thesis" or "thesis" paper should be a report of an original piece of empirical research performed by the student. While the demands for comprehensiveness of treatment, scope, and impact on the field are less than in the dissertation, the research should be original and of publishable quality if not quantity. Every effort should be made by the student and his/her chairperson to publish the work. Normally it is better strategy in the planning and execution of master's research to address a single question in an elegant and clear manner than to attempt to answer several questions in an unclear and inconclusive manner. The usual emphasis should be on simplicity and elegance rather than on comprehensiveness.

7. Most decisions regarding format, length, and organization are up to the master's committee. Unless the intention is to publish in a non-APA journal, the non-thesis or thesis paper should be written in the style described in the Publication Manual of the American Psychological Association: http://www.apa.org/

8. After the research and paper (whether non-thesis or thesis) are completed, an oral presentation and examination is conducted (the T-2 meeting). The T-2 must be scheduled through the Graduate School. The oral examination is a public meeting: all Psychology Department faculty and students are welcome to attend, but students may not participate in the examination. *Typically, the T-2 should be scheduled during the fall or spring semester of the regular academic year, rather than during the summer. Students who defend in the summer MUST be enrolled in 3 credits of Psych 702/700, and will likely pay their own tuition.*

9. It is expected that the student will *complete the T-2 by the end of the second year* of residence.

10. A copy of the master's paper must be in the main office of the Psychology Department at least 1 week before the oral examination. An electronic copy of the paper *in its final form* must be placed in the Psychology Department's permanent collection no later than the date of the student's graduation.

11. The student should consult the "Policies and Procedures" of the Graduate School (as described in the Graduate Study Bulletin; http://www.gradsch.wsu.edu/policiesprocedures.html) for university requirements. Since specific requirements change periodically, the student should contact the Graduate School early in the thesis project for information about program, examination, and graduation forms to be filed -- and *deadlines* for each.

B. The Doctoral Degree

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The Ph.D. program must include at least 72 credit hours of courses and research; 26 credit hours must be graded coursework. In addition, a preliminary examination and dissertation are required. During the second year of residence, generally immediately following completion of the master's project, the student chooses a doctoral committee. The purpose of the doctoral committee is to conduct the preliminary examination, direct the dissertation, and conduct a final examination on completion of the dissertation. Specific requirements regarding the Ph.D. program are detailed in the "Policies and Procedures" of the Graduate School. The following are selected quotations from that document.

The student and advisor, in consultation with suggested committee members from the major (and minor, if the student chooses a minor) department, prepare the doctoral program of study. The program of study is submitted via the department/program chairperson to the Graduate School for approval.

The doctoral committee must include a major advisor and two other faculty members, with the major advisor serving as chairperson of the committee. The chairperson of a doctoral committee must be a member of the Psychology faculty, although two co-chairs (one co-chair from outside of Psychology) are permissible with approval of the Director of Experimental Training and the Graduate School. The other two faculty members may or may not be Psychology faculty. A fourth committee member who holds the highest appropriate degree and whose special knowledge is particularly important to the proposed program, but who is not a member of the faculty, may be appointed to the committee and shall vote. At least one member of the committee must be from the minor department if a minor is declared on the doctoral program.

The doctoral committee is subject to approval by the chairperson of the major and minor (if applicable) departments, the Director of Experimental Training, the department Chair and the Graduate School. This committee, once approved, has the responsibility of directing the student's progress, supervising the dissertation, and participating in the preliminary and final examinations.

1. The Preliminary Examination

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a. General Considerations:

(1) The preliminary examination will consist of a thorough examination in at least three areas of psychology.

(2) The preliminary examination cannot be taken until the master's project (T-2) is completed. The doctoral program of study must be submitted to the Graduate School the semester before the preliminary examination can be taken.

(3) The preliminary examination must be completed and passed before the Ph.D. dissertation can be formally begun (i.e., before the dissertation proposal [D-1] meeting).

(4) The preliminary examination must conform to all rules of the Graduate School, as stated in the "Policies and Procedures" of the Graduate School. The Graduate School requires the student to be enrolled in at least two credits of Psych 800 during the semester in which the preliminary exam is completed.

(5) All aspects of the preliminary examination must be completed within 14 days from the beginning of the examination. Preliminary exams must be taken during one of two periods/semester (one near the beginning of the semester and the other about 4 weeks before the end of the semester). Preliminary examinations may not be taken during the summer except in extraordinary circumstances, with approval of the exam committee and the Director of Experimental Training; additionally, the student must be enrolled in Psych 800 during the summer session in which the exam is taken.

(6) It is expected that the preliminary examination will be completed within 2 semesters after the T-2 (or within 4 semesters after entering the program, for students entering with a master's). To complete preliminary exams within the 12-month period after the T-2, the student should have the doctoral committee in place no later than 6 months after completing the T-2, with reading lists generated during the next month. This allows for at least several months of study before the 14-day examination period commences.

(7) The student shall schedule an initial preliminary exam meeting with all committee members as soon as reading lists have been assembled. The point of this meeting is to gain consensus on (a) the scope, goals and expectations for each exam; (b) the format of each exam; (c) the dates on which the exam will be taken. A form documenting these decisions and signed by the student shall be given to the Director of Experimental Training immediately after the meeting.

(8) It is assumed that the student will complete the examinations using a computer, which will generally be provided by the department. The student is responsible for providing a blank CD or thumb drive, and for scheduling exams room for the specific days with department personnel. The day before the first exam the student must give the CD/thumb drive to department personnel, who will examine the contents to ensure that they contain no material that could aid the student in preparing answers.

(9) *It is the student's responsibility to ensure that each committee member submits her/his questions to department personnel no later than 24 hours before the student is scheduled to take each exam. It is also the student's responsibility to schedule the ballot meeting with their committee; this date must also be provided on the Graduate School exam scheduling form (submitted by the student at least 4 weeks before the exam).* The balloting meeting should be held no more than 10 working days after the last day of the exam period.

b. Examination Areas:

(1) The preliminary examination covers areas in which the student, in consultation with his/her committee chairperson, decides to concentrate. Each student is expected to define <u>three</u> substantive areas – which typically directly or

indirectly relate to the general dissertation topic – in consultation with the chairperson and members of the doctoral committee. The student's committee is responsible for the preparation of an examination that will (a) test the student's knowledge of theory, methodology, and research in the areas of concentration; and (b) evaluate the student's ability to integrate and synthesize the areas of concentration and related areas of psychology.

(2) Decisions regarding what constitutes appropriate preliminary examination areas will be made by the student and her/his doctoral committee. Definitions of the nature, breadth, and depth of these areas, and decisions regarding the methods and scope of the student's preparation (including reading lists), will be determined in a manner designed to make the examination most beneficial to the student's development as a scientist. Such determinations will take into account the student's career aspirations, research interests, and other educational goals. The preliminary examination is primarily designed to prepare the student for the dissertation, and differs from a qualifying exam, which assesses general knowledge. However, caution should be exercised to avoid defining the areas of the preliminary examination too narrowly. The areas of the examination should be clearly different from one another, and not just minor variations of one narrowly defined area.

(3) The preliminary examination should be considered, in part, as a means of preparing the student for the dissertation. The student is encouraged to incorporate into her/his preliminary examination preparation the definition of a problem for the dissertation and preliminary development of the methods by which the problem will be investigated. This will help ensure a smooth and rapid transition from the preliminary examination to the dissertation.

(4) The examination in no more than one area may be a review article or a grant proposal. A literature review is appropriate if the student and advisor determine that one exam area has not been addressed recently in a published review, and therefore the student's article may be publishable. A grant proposal is appropriate if the student has the opportunity to later apply for a research grant on that particular topic. The remaining two examination areas will be tested by closed-book written examinations, each up to 8 hours in length.

c. Passing/failing the preliminary exam:

(1) In order to pass the preliminary exam, the student's performance in each of the 3 examination areas must be deemed to be at a "B" level or better by each member of the student's preliminary exam committee. The judgment of the mentor for a given preliminary exam will carry the most weight, but each exam is read by all 3 mentors.

(2) If the student's performance on one or more exams is deemed to be at less than a "B" level, the ballot will reflect failure of the preliminary exam, and the student will be permitted one re-test. *The re-test may not be taken sooner than 3 months from the date of the original exam, and must be scheduled through the Graduate School.* The Graduate School will appoint a representative from outside the department to attend the discussion at the second ballot meeting. The format of the re-test is determined by the preliminary exam committee, and may range from a written revision of one or more exam questions, a review article on the topic which the student still needs to demonstrate mastery, or a

completely new closed-book exam. A second failure of the preliminary exam will result in dismissal from the program.

2. The Dissertation

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a. Following successful completion of the preliminary examination, the student officially becomes a candidate for the Ph.D.

b. The student must enroll in Psychology 800 when engaged in dissertation research, and the Graduate School requires that fulltime students register for 18 credits/semester. Thus, all credits other than coursework should be Psych 800 once the master's degree has been obtained.

c. Many of the considerations that define an appropriate dissertation and its approach, type of data, and design, are dictated by the nature of the problem chosen for study and cannot adequately be anticipated or delineated in a formal policy statement. In general, the dissertation is a scholarly, original study which represents a significant contribution to the knowledge base of psychology. It should be a major piece of research, comprehensive in scope. Ordinarily, a dissertation should be designed with strong theoretical underpinnings rather than being strictly exploratory. The emphasis should be on an experimental rather than a correlational approach. It is recognized, however, that many important questions in psychology cannot be addressed through experiments, and such questions sometimes are appropriate for dissertation research. Since correlational and quasi-experimental approaches afford less opportunity for control than is the case with experiments, they must be conducted with special care and comprehensiveness to be sufficiently high-quality for a dissertation.

d. When the student has completed a research proposal, in consultation with the advisor and other members of the doctoral committee, a formal meeting is held, the D-1 meeting, to discuss and approve the research plan. The D-1 is not scheduled through the Graduate School.

e. After the research and the dissertation are completed, a final oral presentation and examination (D-2) is conducted – this must be scheduled through the Graduate School. Primary responsibility for conducting this examination belongs to the doctoral committee, but it is a public meeting scheduled with the Graduate School, open to any member of the public, and at which any member of the faculty of Washington State University may ask questions and vote. All Psychology faculty are urged to attend. Students also are welcome to attend, but they may not participate in the examination.

f. When absolutely necessary, the final oral examination may be conducted during the summer session. Students must be registered at least part-time (3 credits of Psych 800) during the semester in which they complete the D-2, and may need to pay tuition themselves if they defend in the summer.

g. The chairperson of the doctoral committee must be a member of the Psychology Department Faculty (adjunct and courtesy appointments not included) and must meet departmental requirements for eligibility to chair such committees. Any exception to this policy must be approved by the the Director of Experimental Training, the Department Chair, and the Graduate School. The dissertation must deal with a problem that lies within the doctoral committee chairperson's direct expertise, and not with an area with which s/he is only marginally acquainted.

h. Most decisions regarding format, length, and organization of the dissertation are up to the doctoral committee. In general, the paper should be written in the style described in the Publication Manual of the American Psychological Association; http://apastyle.apa.org/ unless the student will publish the work in a journal that does not require APA style.

i. A copy of the dissertation must be in the Main Office of the Psychology Department at least 10 working days before the oral examination. Following the oral examination, a final electronic copy of the dissertation must be placed in the Psychology Department's permanent collection no later than the date of graduation.

j. The student should consult the "Policies and Procedures" of the Graduate School for university requirements. Since specific requirements change periodically, the student should contact the Graduate School early in the dissertation project for information about forms to be filed and deadlines: http://www.gradsch.wsu.edu/currentstudents/index.html

3. The Preparation and Evaluation of Thesis and Dissertation Proposals.

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As mentioned above, both dissertation and master's research require a formal research proposal that is evaluated in a meeting of the doctoral or master's committee. The following is a guide to the preparation of such proposals and the conduct of the appropriate meetings. It is intended as a guide only, and the degree to which it is adhered will vary somewhat, depending on the chairperson of the relevant committee.

a. Orientation

(1) The meeting at which the non-thesis (or thesis) research proposal is presented to the master's committee generally is referred to as the T-1 meeting, and that at which the dissertation proposal is presented to the doctoral committee is referred to as the D-1 meeting. These meetings are *not* scheduled through the Graduate School, just with the committee.

(2) The function of the T-1 or D-1 meeting is discussion and evaluation of the proposal, resulting in a judgment of feasibility and scientific merit and an action accepting the proposal, recommending changes, or rejecting the proposal.

b. Selection of the committee

(1) The selection should involve faculty most knowledgeable in the area of the research.

(2) The student and the chairperson develop a list of possible committee members. Thereafter it is the student's responsibility (a) to contact these nominees to determine their willingness to serve, and (b) to prepare and submit all necessary forms.

c. Preparation of the proposal

(1) The relative involvement of the chairperson may vary rather widely, depending on the student's background and the nature of the problem. It is valuable to discuss relative contributions, responsibilities, and authorship at this stage. The American Psychological Association's

Ethical Principles of Psychologists should be the guide: http://www.apastyle.org/authorship.html

(2) The student, under the direction of the chairperson, is responsible for a literature search, identification and contact with current researchers, preparation of the proposal, and ensuring the development of required skills and competencies. The student is also responsible for consideration and solution of logistical problems related to the research.

(3) Other members of the committee should be involved at this stage in a consultant capacity.

(4) The chairperson of the committee should help the student to carefully edit the proposal, and give preliminary approval of the proposal before it is submitted to other committee members. Students are encouraged to **edit the proposal carefully before it is disseminated to committee members**, and to give the committee 2 weeks to read the document before the meeting.

d. Format of the proposal

(1) Title, name of investigator, and abstract.

(2) Statement of the major objectives of the work (aims) and its significance in relation to the present state of knowledge in the field and to other work in the field.

(3) Summary of relevant research literature, including details germane to the proposed research. Considerable care should be taken with this background section, for it is as an index of scholarly preparation for the project.

(4) A step-by-step theoretical and empirical development of the questions or hypotheses to be investigated.

(5) Methods and procedures

(a) Subjects, including relevant background information concerning development, health, age, sex, and species.

(b) Apparatus, including description of anything that needs to be constructed.

(c) Design.

(d) Procedure. This should include a step-by-step analysis of preliminary and experimental treatments, and a rationale for what is to be done, including controls. Procedural contingencies, depending on outcomes, also should be described.

(e) Principal procedures for data analyses should be described, and supplemental analyses where appropriate.

(6) A statement of expected results or whenever possible preliminary results, preferably in graphic form. It is usually a good idea to consider alternative outcomes and suggest how the project as designed will contribute some useful knowledge about the problem regardless of outcome.

(7) A general statement of the significance of the potential outcomes.

e. Preparation for the T-1 or D-1 meeting

(1) Pilot data may be useful but is not necessary for the T-1 or D-1 meeting. *It is VERY important that the proposed experiments be proposed rather than completed at the time of the T-1 or D-1*, because the point of the meeting is for the committee to critique the experimental question and methodological approach.

(2) The T-1 and D-1 meetings typically include only the student and his/her committee, although others may attend with permission of the committee chair.

(3) Multiple copies of the complete proposal should be prepared, one for each member of the committee. In the case of the D-1 proposal, a electronic copy must be provided to the Program Coordinator in the main office of the Psychology Department for all faculty to read. Dissertation proposals should be available at least one week (preferably two) prior to the scheduled meeting.

(4) It is the student's responsibility to determine the availability of T-1 or D-1 committee members and to schedule a time and place for the meeting. If videoconferencing is required, the student should notify the local program coordinator/director as soon as possible.

(5) It is generally advisable to prepare a brief (20-30 minute), well-organized visual and oral overview of the proposed project.

(6) It sometimes is useful to have reprints or copies of major references at hand during this meeting, to facilitate answering questions.

f. Procedures in the T-1 or D-1 meeting

(1) The meeting typically is somewhat informal, but degree of formality varies with chairpersons and committees. The student should consult with their advisor ahead of time to discuss expectations.

(2) Regardless of the degree of formality, the student is asked to cover most of the following list of topics. These concern what already is available in the proposal, but they remind the committee of details, help maintain a logical order, and permit the student to summarize the proposal.

(a) Statement of background, interests, and professional goals of the student (this should be very brief).

(b) Why a particular interest in this problem area? How is it related to goals?

(c) Theoretical or empirical background, leading to a precise statement of hypotheses or questions to be investigated.

(d) Statement of procedures, including subjects, apparatus, steps in procedure, and time schedule.

(e) Description of design, showing how design will answer questions.

(f) Description of proposed statistical treatment

(g) Statement of predicted results (with graphics if appropriate) – how will particular outcomes be interpreted?

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(3) Committee members and faculty may ask questions related to any of the above points, or any other matters relevant to the thesis/dissertation and the student's graduate and professional experience.

g. The committee's role and responsibility

(1) The committee members judge the significance, soundness, and feasibility of the proposed research and the ability of the student to carry it to a successful conclusion.

(2) The action of the committee at this meeting may be:

(a) To accept the proposal as presented.

(b) To suggest changes in the procedure.

(c) To suggest limitation or expansion in the scope of the research.

(d) To suggest a different emphasis or direction.

(e) To reject the proposal.

(3) Actions (b), (c), (d), or (e) above may require additional meetings of the committee.

(a) If an additional meeting is scheduled, responsibilities for scheduling and distribution of materials should be as described above.

(b) If an additional meeting is not required but changes are needed, the student should prepare a statement of those changes and distribute a copy to each committee member.

(4) Rejection of the proposal usually results in the selection of a new problem. Depending on how much this deviates from the original problem, a change in committee or chairperson may be warranted.

h. Communication with committee during conduct of research

(1) The chairperson should be cognizant of progress in all stages of the research.

(2) Periodic informal reports of progress – particularly when the project takes longer than 1 year to complete – should be made to other committee members either by the student or the chairperson.

(3) Significant changes in design or procedure should be reported to the committee. The determination of "significant" will be made by the student and her/his chairperson.

i. Preparation for the T-2 or D-2 examination

(1) The oral defense should not be scheduled until the student has produced a thesis or dissertation draft that the advisor feels is defensible. Typically this requires multiple revisions of the document; students are advised to carefully edit the document before it is given to the committee. However, the student has the right to proceed with a defense even if the committee feels that the document is not defensible; in that case an outside "grad rep" should be requested to attend the defense (contact Graduate School).

(2) It is the student's responsibility to identify a date and time for the defense that can be attended by all committee members. All members of the committee must participate in the defense, and must be present in person (in the room or via videoconference, not on the phone). ***It is the student's responsibility to file the paperwork necessary for scheduling the defense with the Graduate School, and adhering to Graduate School deadlines.***

(3) The student should prepare an oral presentation of the study with visual aids. Normally this presentation is 20-40 minutes long (usually shorter for the T-2 than the D-2), although the advisor may recommend a shorter or longer presentation.

(4) A draft of the thesis or dissertation must be electronically deposited with the Psychology Department no less than 1 week prior to the defense.

j. Procedures in the T-2 or D-2 examination

(1) The oral defense is a formal examination designed to assess the student's breadth and depth of knowledge and ability to think quickly. An examiner may ask about any topic that s/he feels the student should know as a research psychologist, even if it does not pertain directly to the study being presented. This is especially true at the D-2, the primary purpose of which is to ensure that the student possesses doctoral-level knowledge of psychology.

(2) The student will be examined by all members of the committee, and may also be examined by any other members of the faculty who attend the defense. Students may attend but are prohibited from asking questions. The Experimental Director will attend when possible. If s/he cannot attend (or is a member of the committee), s/he may designate a member

of the Experimental Faculty to act as proxy. All other Experimental Faculty are encouraged to attend.

k. Grievances by the student, if not informally resolvable, may be discussed with one or more of the following: the committee chairperson, the Director of Experimental Training, the department chairperson, the dean of the College, and the dean of the Graduate School. If the student or committee anticipate significant conflicts at the defense, they should request that an outside "grad rep" attend the defense (contact Graduate School).

C. Annual Evaluations

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Each graduate student in experimental psychology is evaluated annually at a formal meeting of the experimental faculty. This meeting takes place at the end of spring semester, although in special cases such evaluations also may be held at the end of the fall semester. Each student's progress in research, in relevant work assignments, and in general academic and professional performance is carefully evaluated by the entire experimental faculty. Each student receives a written summary of his/her evaluation including written comments from various relevant faculty members, and from the Director of Experimental Training. Students are encouraged to use this constructive feedback to improve their performance, keeping in mind that the intent of the feedback is to help students progress at a reasonable pace through the program, and to become strong experimentalists and competent professionals who will be competitive in the job market.

VII. CURRICULUM

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All first-year graduate students will begin their careers at Washington State University with the assumption that they have had the following undergraduate courses or acceptable equivalents (either through undergraduate or previous graduate work): experimental design, statistics, physiological psychology, sensation/perception, learning, developmental psychology, social/personality. Those who are lacking appropriate background in these areas (as determined by the director of experimental training when they enter the program) must remedy the delinquency by one of the following methods:

1. Taking a graduate course in the deficient area(s) and acquiring the necessary background while taking that course (with the consultation and consent of the instructor);

2. Taking (or in some cases auditing) an undergraduate course in the area(s);

3. Other methods can be accepted with the approval of the director of experimental training. The principal objective is that the student work out some plan for meeting the assumption so he/she can succeed in advanced courses.

The following was adopted as a general policy by the faculty in the psychology department: "*All resident candidates for a graduate degree in psychology are required each semester to be involved in research, teaching, and/or clinic assistance. The level of involvement is expected to be 20 hours per week. This requirement applies to each student, whether or not the student holds an assistantship appointment. Exceptions to this policy may be made only by the department Chair.*" The most apparent implication of this policy for students in experimental psychology is that they will be involved in research as soon as they enter the program. This may involve participating in already existing research projects, developing their own research interests in collaboration with appropriate faculty, beginning work on a master's thesis, or some other involvement, depending on the student's needs, goals,

previous experience, and other circumstances. The faculty considers research to be the most important activity for an experimental psychologist, and graduate students should expect to be involved heavily in research at all times throughout the duration of their graduate school careers.

Although most students enter the program assigned to work with a particular faculty mentor, the Director of Experimental Training may serve as the temporary advisor for all new students in the experimental program for the first few weeks or months they are on campus. Students should regard this as a convenience to help them get started rather than as a commitment. A thesis advisor must be selected by the end of the second semester in residence.

The program requires that the student work closely with his/her advisor. The advisor will chair the student's master's committee. By the end of the second semester in residence, the student will meet with his/her advisor and plan the remaining years of his/her program. While it is not required that the student keep the same advisor throughout his/her graduate career, maximum continuity of training is achieved when the master's committee chairperson also serves as the doctoral committee chairperson. *Students are strongly encouraged to maintain regular contact with their advisor at all stages of their training, and to ask for clarification if in any doubt about performance expectations.*

The following is the usual curriculum for graduate students in experimental psychology. It assumes that the student has not had previous graduate experience in psychology and that the student is on a half-time teaching or research assistantship appointment or its equivalent. Exceptions to these assumptions will require appropriate adjustments. Students who enter the program with previous graduate experience will have their graduate records evaluated by the Director of Experimental Training who, in consultation with relevant faculty members, will determine which requirements have been met, which courses to waive, and an appropriate first-year schedule. Such students, particularly those coming in with master's degrees, will be encouraged to choose a doctoral committee as soon as possible.

Core Requirements

All students must complete the Experimental Program's core requirements. This consists of 5 courses. The following 3 courses are required of all students:

Psych 504: History of Psychology (3 credits)
Psych 511: Analysis of Variance and Experimental Design (4 credits)
Psych 512: Correlation, Regression, and Quasi-Experimental Design (3 credits)

Of the following 6 options, students must choose 2:

Phil 530 or 540*: Bioethics (2 credits) or Ethics for Social Scientists (3 credits)
Psych 519: Industrial/Organizational Psychology (3 credits)
Psych 550: Attitudes and Social Cognition (3 credits)
Psych 574: Behavioral and Clinical Neuroscience (3 credits)
Psych 591: Operant Behavior (3 credits)
Psych 592: Cognition and Memory (3 credits)

*Phil 540 is specifically targeted to graduate students conducting social science research with human participants; Phil 530 is available for students conducting animal research only. Industrial/ organizational students alternatively may elect to take MgtOp 587 (3 credits) Professional Ethics and Practice in Business.

All first-year students are also required to complete two semesters of **Psych 506**: Current Research in Psychology, which is a one-credit, pass/fail seminar designed to introduce students to research in the Experimental and Clinical Programs and to provide a general introduction to graduate training in psychology.

Psych 506, Psych 511 and Psych 512 must be completed during the first year, and the remaining 3 classes should be completed before the T-2 is conducted. Scheduling conflicts can occasionally prohibit enrolling in a class until the third year, which is permissible if necessary.

A. First-Year Program for All Students (pre-M.S.)**.** *The student must enroll for a total of 18 credits each semester.*
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Fall	Credits	Spring	Credits
Psych 506	1	Psych 506	1
Psych 511	3	Psych 512	3
Psych 504	3	Additional cores	6
Additional core	3	&/or electives	
Psych 702	8	Psych 702	8

Additional Requirements

The Graduate School requires completion of 26 hours of graded coursework before the T-2 is conducted for students enrolled in **Psych 702**; students opting for **Psych 700** must complete 21 hours of graded coursework before the T-2. If a student will be ready for the T-2 before s/he can complete 26 graded credits, s/he should opt for the Psych 700 option; that is, *the T-2 should not be delayed in order to finish 26 graded credits of coursework*. The Experimental Core Requirements yield 14-15 graded credit hours. Thus, Psych 702 students must complete 11-12 credits of electives (4 more courses) before the thesis defense. The last courses can be taken in the same semester as the T-2.

Ph.D. students must complete 26 hours of graded coursework before the D-1. Thus, students opting for the "thesis option" M.S. (21 credits) must complete the additional 5 graded credits of electives before the D-1. Students completing the "non-thesis option" for the M.S. will already have 26 graded credits, so no more graded coursework is required. Below is a list of recommended electives for each of the areas of concentration.

Recommended electives for students in Cognition:

Psych 446: Engineering Psychology
Psych 509: Affective Neuroscience
Psych 561: Human-Computer Interaction
Psych 562: Advanced Human Factors
Psych 574: Behavioral and Clinical Neuroscience
Psych 575: Foundations of Neuropsychology

Recommended electives for students in Biopsychology:

Psych 509: Affective Neuroscience
Psych 575: Foundations of Neuropsychology
Psych 577: Behavioral Pharmacology
MBIOS 528 (AS 558): Molecular & Cellular Reproduction
Neuro 404 or 430: Neuroanatomy or Neurophysiology
Neuro 520: Foundations of Neuroscience
Neuro 540-543: Special Topics Neuroscience courses
P/T 506: Principles of Pharmacology
P/T 507: Principles of Therapeutics

Recommended electives for students in Social:

Psych 514: Psychometrics
Psych 515: Multilevel and Synthesized Data

Psych 516: Applied Structural Equation Modeling
Mktg 567: Consumer Behavior Theory
Pol S 533: Topics in Political Psychology

Recommended electives for students in Industrial/Organizational:

Psych 514: Psychometrics
Psych 515: Multilevel and Synthesized Data
Psych 516: Applied Structural Equation Modeling
Mgt 501: Management of Organizations
Mgt 582: Personnel and Human Resource Management
Mgt 585: Negotiation Skills
Mgt 593: Managerial Leadership and Productivity

Recommended electives for students in Health:

Psych 514: Psychometrics
Psych 515: Multilevel and Synthesized Data
Psych 516: Applied Structural Equation Modeling with Current Software
Psych 533: Adult Psychopathology
Psych 544: Medical Psychology
Psych 574: Behavioral and Clinical Neuroscience

Recommend electives for students in Applied Quantitative Methods:

Psych 514: Psychometrics
Psych 515: Multilevel and Synthesized Data
Psych 516: Applied Structural Equation Modeling with Current Software
Psych 533: Adult Psychopathology
Psych 544: Medical Psychology
Psych 574: Behavioral and Clinical Neuroscience
Psych 575: Foundations of Neuropsychology

All students must register for Psych 800 credits during each semester after the M.S. is completed. Students who leave campus before the thesis or dissertation is completed and need to return for an oral defense must register for 2 credits of Psych 702/700 or 800 during the semester in which the defense is conducted. The student may be responsible for paying the tuition associated with these 2 credits.

Students must register for 18 credits each semester. The difference between 18 total credits and the number earned from coursework is Psych 702/700/800 (research) credits.

VIII. GRADUATE COURSES IN EXPERIMENTAL PSYCHOLOGY

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Following are the numbers and descriptions of the courses in experimental psychology offered at Washington State University (or cooperatively at the University of Idaho). The list does not include most courses for which the primary responsibility belongs to the clinical program, although such courses are occasionally taken by experimental students. A complete listing of all graduate Psychology Department courses can be found in the Washington State University online catalog: http://www.catalog.wsu.edu/Catalog/Apps/Courses.ASP. The number immediately following each course title (e.g., 3) indicates the number of credit hours earned in that course. Following each course description is a set of notes, the principal purpose of which is for intradepartmental reference. Such notes are used by faculty and students to provide clarification of the purpose and content of each course, and to help maintain continuity from year to year regarding how the course is taught.

Psych 504 History of Psychology: Theoretical and Scientific Foundations 3 Roots of scientific explanation in psychology are traced through various philosophical schools and psychological movements.

Note: This course is offered every year (alternates between WSU-Vancouver and WSU-Pullman). Its purpose is to provide students with an understanding of how scientific method and explanation evolved, particularly as it is applied to psychology. Various approaches may be used, depending on the instructor. The emphasis may be on the philosophical development of ideas and thought, the development of scientific method, advances in epistemology, and/or the historical development of schools and theories in psychology. The principal idea is to ensure that students understand why psychologists approach questions the way they do, how such strategies developed and their historical context, and what the advantages and disadvantages of such conceptions are.

Psych 505 Teaching Introductory Psychology 1 Problems and techniques related to teaching of introductory psychology; for graduate students who are teaching their own courses.

Note: This course is offered every fall and spring to students who are teaching their own sections of undergraduate courses. It is a seminar-format course designed to help new instructors develop effective lectures, solve problems related to grading and examinations, learn audio-visual techniques, etc. It should be taken first in the spring *before* the first semester of independent teaching (usually in Spring of the first year, to prepare to teach independently in Fall of the second year).

Psych 506 Current Research in Psychology 1 May be repeated for credit.

Note: This course is offered every fall and spring and is required for all new students, to introduce them to the various research areas represented in our department. In some weekly meetings, a faculty member or senior student will present a research seminar, providing the theoretical background for the research problem, discussing some of the most current findings, and explaining how the problem fits into the larger context of his/her sub-discipline with psychology. Other meetings involve discussion of professional development issues for experimental and clinical program graduate students, to help new students adjust to the demands of graduate training.

Psych 507 Topics in Psychology 3 May be repeated for credit.

Note: This seminar is used for areas previously covered by formal courses that have been dropped as well as any other appropriate topics. The "special topics" title permits the name of the particular topic to appear on the student's transcript. These seminars allow for breadth of training not covered by formal courses.

Psych 508 Special Topics in Psychology V1-3 May be repeated for credit.

Note: This seminar is used for special topics that lend themselves to a variable credit format.

Psych 511 Analysis of Variance and Experimental Design 3 Parametric, nonparametric, repeated-measures, and multivariate ANOVA; planned comparisons; confidence intervals and power analysis; experimental design and variants.

Note: This is the first graduate-level statistics course, taken by all graduate students in psychology (experimental and clinical) unless waived on the basis of previous work. It assumes that the student has had at least one undergraduate level course in statistics. It covers a variety of basic rationales and techniques (as indicated in the above description), preparing the student to use a number of basic designs in research.

Psych 512 Correlation, Regression, and Quasi-Experimental Design 3 Simple and multiple correlation and regression; time-series analysis; factor analysis; field research and quasi-experimental design.

Note: Like 511, this course is required of all graduate students in psychology. After having completed the 511-512 sequence, the student should be well prepared to use a wide variety of sophisticated research designs and analyses as well as be conversant with necessary basic computer skills.

Psych 513 Seminar in Quantitative Methods and Research Design 3 May be repeated for credit. Prereq Psych 512. Advanced topics in specialized quantitative procedures and in the design of research in psychology.

Psych 514 Psychometrics 3 Prereq Psych 512. Scientific construction of behavioral assessment instruments, including validation and reliability; types of scales and responses; statistical scaling; test theory issues.

Psych 515 Multilevel and Synthesized Data 3 Prereq Psych 512. Structural equation modeling, hierarchical linear modeling and meta-analysis and the software used to conduct these analyses.

Psych 516 Applied Structural Equation Modeling with Current Software 3 Prereq Psych 511, 512, 514, 515. Confirmatory factor analysis, path analysis, structural regression analysis, multilevel analysis and latent growth analysis with current software.

Psych 519 Industrial/Organizational Psychology 3 Application of psychological principles to the study of work behavior; includes topics such as personnel selection, performance appraisal, training, work motivation, teams, leadership, and job attitudes. Offered via WSU-Vancouver in alternate years.

Psych 550 Attitudes and Social Cognition 3 Attitude structure, function, and change. Social cognition and motivation, and attributions.

Note: This course provides an in-depth survey of the research in social psychology directed at attitude structure and function, as well as the cognitive processes that underlie social interaction. It, along with Psych 551, serves as a foundation for students interested in specializing in social psychology.

Psych 561 Human-Computer Interaction 3 Overview of human-computer interaction (HCI) topics, including user models, dialog, display design, usability, software development, groupware, and multimedia. Cooperative course taught by UI (Psyc 561); open to WSU students.

Psych 562 Advanced Human Factors 3 Review of topics and theories germane to human factors such as performance measurement systems, design specifications, research issues, controls and displays, human reliability, and illumination. Cooperative course taught by UI (Psyc 562); open to WSU students.

Psych 574 Behavioral and Clinical Neuroscience 3 Neuroanatomical, neurochemical, and other biological cases of human and animal behavior.

Note: This course is recommended for all experimental students. It provides a solid background in biological psychology, giving students in the other specialty areas important perspectives from which to view some of the work in their own specialty area.

Psych 577 Behavioral Pharmacology 3 Prereq Psych 574. Survey of central nervous system drug effects with emphasis on animal models and clinical applications.

Note: This course is taught every 2-3 years. It is a required elective for students in the physiological area, providing coverage of a rapidly changing specialty in that area.

Psych 591 Operant Behavior 3 Historical and current theory and research in learning and cognition.

Note: The principal intent of the course is to provide students with an overview of the development and function of models and theories of learning, the context in which they developed, and the research literature that has emerged from such conceptions. Students enrolled in Psych 591 attend Psych 491 in addition to biweekly discussion meetings on outside readings. If an undergraduate learning course was completed before matriculating into the graduate program, only attendance in graduate-level discussion meetings is required.

Psych 592 Cognition and Memory 3 Experimental approaches to human information processing, memory, and cognition.

Note: This course is a recommended first-year course for all experimental graduate students. It covers advanced topics in attention, memory, cognition, and information processing, and serves as a foundation for future work that students elect to do in cognitive psychology; it also provides needed breadth of experience for students in other specialty areas.

Psych 600 Special Projects or Independent Study Variable credit.

Note: This course number is used to receive credit for research other than the master's thesis or doctoral dissertation, and is typically only used in the first semester. If the research is thesis- or dissertation-related, 700/702 or 800 should be used.

Psych 700 Master's Research, Thesis, and/or Examination Variable credit.

Note: This course number is used whenever the student is working on any aspect of a formal master's thesis. The student must enroll in Psych 700 credits every semester until the "thesis" M.S. is completed.

Psych 702 Master's Special Problems, Directed Study, and/or Examination Variable credit.

Note: This course should follow the same strategy as for Psych 700, except that 702 applies to students using the "non-thesis" option. Given that all students in the Experimental Psychology doctoral program must complete a master's thesis on the way to the Ph.D., the only distinction between Psych 700 and 702 in this department is that Psych 700 should be used when only 21 graded credits can be obtained by the time of the thesis defense (T-2). Otherwise, all students should register for Psych 702 credits to account for time spent conducting research for the master's degree.

Psych 800 Doctoral Research, Dissertation, and/or Examination Variable credit.

Note: This number is used whenever the student is working on any aspect of a doctoral dissertation. The student must enroll in at least one credit of Psych 800 during each semester after the M.S. is completed, including the semester in which the final oral examination is scheduled.

IX. FACULTY IN EXPERIMENTAL PSYCHOLOGY

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A. Currently serving as major advisor

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COGNITION:

Lisa Fournier, Ph.D. Pullman campus

Doctoral Degree: University of Illinois, Champaign-Urbana, 1993

Interest Areas: Visual attention in static and dynamic environments; Perception and action planning; Role of memory in execution of action; General visual information processing.

Teaching Specialties: Visual attention; Cognition; Research methods; History of psychology

Current Research: Perception and action planning; Memory representation and stimulus selection influences on action planning; Perception of multi-dimensional objects as it relates to attentional load; Visual attention influences on motion and heading perception

Recent Publications:

Wiediger, M.D. & Fournier, L.R. (2008). An action sequence withheld in memory can delay execution of visually guided actions: The generalization of response compatibility interference. *Journal of Experimental Psychology: Human Perception & Performance, 34(5),* 1136-1149.

Mattson, P.S. & Fournier, L.R. (2008). An action sequence held in memory can interfere with response selection of a target stimulus, but does not interfere with response activation of noise stimuli. *Memory & Cognition, 36,* 1236-1247.

Patterson, R. Fournier, L., Pierce, B., Winterbottom, M. & Tripp, L. (2009). System dynamics modeling of the time course of the recognition-primed decision model. *Journal of Cognitive Engineering and Decision Making, 3*, 250-276.

Fournier, L.R., Wiediger, M.D., McMeans, R., Mattson, P.S., Kirkwood, J. & Herzog, T. (2010). Holding a manual response sequence In memory can disrupt vocal responses that share semantic features with the manual response. *Psychological Research, 74,* 359-369.

John M. Hinson, Ph.D. Pullman campus

Doctoral Degree: Duke University, 1981

Interest Areas: Decision making, Cognition and emotion

Teaching Specialties: History of psychology; Decision making: Statistics and quantitative methods

Current Research: Quantitative models of learning and cognition, Decision making; Working memory and emotion

Recent Publications:

Hinson, J.M., Whitney, P., Holben, H. & Wirick, A.K. (2006). Affective biasing of choices in gambling task decision making. *Cognitive, Affective, & Behavioral Neuroscience*, *6*, 190-200.

Whitney, P., Rinehart, C.A. & Hinson, J.M. (2008). Framing effects under cognitive load: the role of working memory in risky decisions. *Psychonomic Bulletin & Review, 15,* 1179-1184.

Whitney, P. & Hinson, J.M. (2010). Measurement of cognition in studies of sleep deprivation. In: Gerard A. Kerkhof and Hans P.A. van Dongen, editors: *Human Sleep and Cognition*, Vol 185, Oxford: Elsevier Science; p. 37-48.

Tucker, A.M., Whitney, P., Belenky, G, Hinson, J.M. & Van Dongen, H.P.A. (2010). Effects of sleep deprivation on dissociated components of executive functioning. *Sleep, 33,* 1-11.

Paul Whitney, Ph.D. Pullman campus

Doctoral Degree: University of Kansas, 1984

Interest Areas: Cognitive neuroscience of working memory and reasoning; Language comprehension and memory

Teaching Specialties: Cognition & memory; Statistics; Psycholinguistics

Current Research: The role of working memory and executive function in impulsivity; Integration of hot and cold cognition in decision making

Recent Publications:

Whitney, P., Hinson, J.M., Wirick, A., & Holben, H. (2007). Somatic responses in behavioral inhibition. *Cognitive, Affective, and Behavioral Neuroscience, 7,* 37-43.

Whitney, P., Rinehart, C.A., & Hinson, J.M. (2008). Framing effects under cognitive load: The role of working memory in risky decisions. *Psychonomic Bulletin & Review, 15,* 1179-1184.

Tucker, A.M., Whitney, P., Belenky, G., Hinson, J.M., & Van Dongen, H.P.A. (2010) Effects of sleep deprivation on dissociated components of executive functioning. *Sleep, 33,* 47-57.

Whitney, P., & Hinson J.M. (2010). Measurement of cognition in studies of sleep deprivation. In G.A. Kerkhof & H.P.A. Van Dongen (Eds.), *Progress in Brain Research, 185,* 37-48.

Hans P. A. Van Dongen, Ph.D. Spokane campus

Doctoral Degree: Leiden University, the Netherlands, 1998

Interest Areas: Cognitive effects of sleep deprivation; Inter-individual differences in vulnerability to sleep loss; Fatigue modeling; Fatigue risk management

Teaching Specialties: Sleep research; Circadian rhythms; Mathematical and statistical modeling

Current Research: Effects of sleep deprivation on distinct components of cognition; Interaction between effects of sleep loss and time-on-task on vigilance; Computational modeling of effects of sleep deprivation on task performance; Laboratory research on effectiveness of hours of service regulations

Recent Publications:

Van Dongen, H.P.A., Baynard, M.D., Maislin, G. & Dinges, D.F. (2004). Systematic interindividual differences in neurobehavioral impairment from sleep loss: Evidence of trait-like differential vulnerability. *Sleep, 27,* 423-433.

Ratcliff, R. & Van Dongen, H.P.A. (2009). Sleep deprivation affects multiple distinct cognitive processes. *Psychonomic Bulletin & Review, 16,* 742-751.

McCauley, P., Kalachev, L.V., Smith, A.D., Belenky, G., Dinges, D.F. & Van Dongen, H.P.A. (2009). A new mathematical model for the homeostatic effects of sleep loss on neurobehavioral performance. *Journal of Theoretical Biology, 256,* 227-239.

Tucker, A.M., Whitney, P., Belenky, G., Hinson, J.M. & Van Dongen, H.P.A. (2010). Effects of sleep deprivation on dissociated components of executive functioning. *Sleep, 33*, 47-57.

BIOLOGICAL:

Rebecca M. Craft, Ph.D. Pullman campus

Doctoral Degree: University of North Carolina, 1991

Interest Areas: Biological psychology; Psychopharmacology

Teaching Specialties: Psychopharmacology

Current Research: Sex differences in behavioral effects of opioids and cannabinoids; Hormonal modulation of pain, analgesia and mood

Recent Publications:

Craft, R.M. (2008). Sex differences in analgesic, reinforcing, discriminative and motoric effects of opioids. *Experimental & Clinical Psychopharmacology, 16,* 376-385.

Craft R.M. & Ulibarri C. (2009). Sexual differentiation of rat reproductive vs. opioid antinociceptive systems. *Gender Medicine, 6,* 209-224.

Navarre B.M., Laggart J.D. & Craft R.M. (2010). Anhedonia in postpartum rats. *Physiology & Behavior, 99,* 59-66.

Wakley A.A. & Craft R.M. (2011). Antinociceptive and motoric effects of intracerebroventricular Δ^9-tetrahydrocannabinol in female vs. male rats. *Behavioural Brain Research, 216,* 200-206.

Michael M. Morgan, Ph.D. Vancouver campus

Doctoral Degree: University of California, Los Angeles, 1989

Interest Areas: Physiological Psychology

Teaching Specialties: Physiological psychology; History of psychology; Research methods

Current Research: Neural mechanisms of pain modulation and morphine tolerance

Recent Publications:

Bobeck, E.N., McNeal, A.L. & Morgan, M.M. (2009). Drug dependent sex differences in periaqueductal gray mediated antinociception in the rat. *Pain*, *147,* 210-216.

Fyfe, L.W., Cleary, D.R., Macey, T.A., Morgan, M.M. & Ingram, S.L. (2010). Tolerance to the antinociceptive effect of morphine in the absence of acute presynaptic desensitization in rat periaqueductal gray neurons. *Journal of Pharmacology & Experimental Therapeutics, 335(3),* 674-680.

Macey T.A., Ingram, S.L., Bobeck, E.N., Hegarty, D.M., Aicher, S.A., Arttamangkul, S. & Morgan, M.M. (2010). Opioid receptor internalization contributes to dermorphin-mediated antinociception. *Neuroscience, 168,* 543-50.

Gunn, A., Bobeck, E.N., Weber, C. & Morgan, M.M. (2011). The influence of non-nociceptive factors on hot plate latency in rats. *Journal of Pain, 12(2),* 222-227.

Brendan Walker, Ph.D. Pullman campus

Doctoral Degree: University of California, Santa Barbara, 2004

Interest Areas: Behavioral neuroscience of motivation and alcohol / drug abuse; Chronic alcohol- and drug-induced negative affect; Excessive alcohol and drug abuse as learned, plasticity-dependent processes; Adolescent alcohol and drug exposure as a basis for altered adult alcohol and drug seeking.

Teaching Specialties: Behavioral neuroscience; Motivation; Physiological psychology; Psychopharmacology; Biopsychological effects of alcohol and drugs of abuse

Current Research: Neurobiology of motivational systems and how acute and long-term alcohol (and other drugs of abuse) impact those systems to promote increased drug-seeking and consumption; Neurobiology of negative affect (i.e., depressive- and anxiety-like behavior) resulting from chronic alcohol and drug exposure; Post-dependent escalation of alcohol seeking from a plasticity-dependent learning perspective.

Recent Publications:

Walker, B.M. & Koob, G.F. (2008). Pharmacological evidence for a motivational role of kappa-opioid systems in ethanol dependence. *Neuropsychopharmacology, 33,* 643-652.

Walker, B.M. & Ehlers, C.L. (2009). Appetitive motivational experience during adolescence results in enhanced alcohol consumption during adulthood. *Behavioral Neuroscience, 123(4),* 926-935.

Walker BM, Drimmer DA, Walker JL, Liu T, Mathé AA, Ehlers CE (2010). Effects of prolonged ethanol vapor exposure on forced swim behavior, and neuropeptide Y and corticotropin releasing factor levels in rat brains. Alcohol*, 44, 6,* 487-493.

Walker BM, Zorrilla EP, Koob GF (2011). Systemic κ-opioid receptor antagonism by nor-binaltorphimine reduces dependence-induced excessive alcohol self-administration in rats. Addiction Biology*, 16, 1,* 116-119.

Nealey, K.A., Smith, A.W., Davis, S.M., Smith, D.G. & Walker, B.M. (in press). κ-opioid receptors are implicated in the increased potency of intra-accumbens nalmefene in ethanol-dependent rats. *Neuropharmacology*.

SOCIAL:

Craig D. Parks, Ph.D. Pullman campus

Doctoral Degree: University of Illinois, 1991

Interest Areas: Social; Quantitative

Teaching Specialties: Social Psychology; Experimental Design and Data Analysis; Data Synthesis

Current Research: Cognitive and affective influences on cooperation; Tolerance of uncooperative others; Individual differences in cooperation; Behavioral strategies in mixed-motive interaction

Recent Publications:

Sanna, L.J., Chang, E.C., Parks, C.D. & Kennedy, L.A. (2009). Construing cooperation: When broad construals increase collective welfare in social dilemmas. *Psychological Science, 20,* 1319-1321.

Parks, C.D., & Stone, A.B. (2010). The desire to expel unselfish members from the group. *Journal of Personality and Social Psychology, 99,* 303-310.

Sanna, L.J., Lundberg, K.B., Parks, C.D., & Chang, E.C. (2010). Think and act globally, think and act locally: Cooperation depends on matching construal to action levels in social dilemmas. *Journal of Experimental Social Psychology, 46,* 1126-1129.

Sarah Tragesser, Ph.D. Tri-Cities & Pullman campuses

Doctoral Degree: Colorado State University, 2005

Interest Areas: Personality; Borderline Personality Disorder; Substance Abuse (alcohol, opioids); Chronic Pain

Teaching Specialties: Historical Development of Psychology; Social Psychology; Personality Psychology; Motivation

Current Research: Borderline Personality Disorder Features; Affective instability, Impulsivity; Drinking motives; Reasons for using prescription opioids; Personality features associated with chronic pain and misuse of prescription drugs; Borderline Personality Disorder features and interpersonal problems

Recent Publications:

Tragesser, S.L., Trull, T.J., Sher, K J. & Park, A. (2008). Drinking motives as mediators in the relation between personality disorder symptoms and alcohol use disorder. *Journal of Personality Disorders, 22*(5), 525-537.

Tragesser, S.L. & Robinson, R.J. (2009). The role of affective instability and UPPS impulsivity in borderline personality disorder features. *Journal of Personality Disorders, 23*(4), 370-383.

Tragesser, S.L., Solhan, M., Brown, W.C., Tomko, R.L., Bagge, C. & Trull, T.J. (2010). Longitudinal associations in Borderline Personality Disorder Features: Diagnostic Interview for Borderlines-Revised (DIB-R) scores over time. *Journal of Personality Disorders, 24*(3), 377-391.

Tragesser, S.L., Bruns, D. & Disorbio, M. (2010). Borderline Personality Disorder features and pain: The mediating role of negative affect in a patient sample. *The Clinical Journal of Pain, 26*(4), 348-353.

INDUSTRIAL/ORGANIZATIONAL:

Armando X. Estrada, Ph.D. Vancouver campus

Doctoral Degree: University of Texas, El Paso, 2003

Interest Areas: Factors influence career progression of women and minorities in the workplace; Culture and gender influences on workplace prejudice, harassment and discrimination; Organizational climate and its impact of employee attitudes and behaviors within civilian and military organizations; Military psychology—Deployment and mental health; gays in the military.

Teaching Specialties: Industrial-organizational psychology; Elementary statistics; Cultural diversity in organizations

Current Research: Antecedents and consequences of prejudice, harassment and discrimination in the workplace; correlates and psychological functions of

sexual prejudice; effects of psychological climate on job attitudes and job behaviors. Integration of sexual minorities in the workplace.

Recent Publications:

Estrada, A.X., Probst, T.M., Brown, J. & Graso, M. (2011). Evaluating the psychometric and measurement characteristics of a measure of sexual orientation harassment. *Military Psychology, 23, 220-236*.

Estrada, A.X. (2011). History, progress and lessons learned on gay service personnel in the U.S. military. In J.H. Laurence, & M. Matthews (Eds.), *Handbook of Military Psychology*. New York, NY. Oxford University Press.

Witkiewitz, K. & Estrada, A.X. (2011). Substance abuse and mental health treatment in the military: Lessons learned and a way forward. *Military Psychology, 23,* 112-123.

Estrada, A.X. & Benson, W.L. (in press). Home from deployment: A soldier's challenge. *PsycCRITIQUES—Contemporary Psychology: APA Review of Books.*

Tahira Probst, Ph.D. Vancouver campus

Doctoral Degree: University of Illinois, Champaign-Urbana, 1998

Interest Areas: Industrial/organizational; Occupational health psychology; Quantitative

Teaching Specialties: Statistics; Industrial/organizational psychology; Workplace diversity

Current Research: Causes and consequences of employee job insecurity; Occupational safety and health; Job stress; Workplace diversity

Recent Publications:

Probst, T.M. Brubaker, T.L. & Barsotti, A. (2008). Organizational under-reporting of injury rates: An examination of the moderating effect of organizational safety climate. *Journal of Applied Psychology*, *93(5),* 1147-1154.

Probst, T.M. & Estrada, A.X. (2010). Accident under-reporting among employees: Testing the moderating influence of safety climate and supervisor enforcement of safety practices. *Accident Analysis & Prevention, 42,* 1438-1444.

Sinclair, R., Sears, L.E., Probst, T.M. & Zajack, M. (2010). A multilevel model of economic stress and employee well-being. In J. Houdmont & S. Leka (Eds.) *Contemporary Occupational Health Psychology: Global Perspectives on Research and Practice: v. 1* (pp. 1-21). Hoboken, NJ: Wiley-Blackwell.

Konig, C.K., Probst, T.M., Staffen, S. & Graso, M. (2011). A Swiss-U.S. comparison of the correlates of job insecurity. *Applied Psychology: An International Review, 60*, 141–159.

HEALTH:

Arthur Blume, Ph.D. Vancouver campus

Doctoral Degree: University of Washington, 2001

Interest Areas: Addictive behaviors and ethnic minority psychology

Teaching Specialties: Addictive behaviors, ethics, ethnic minority issues in psychology, and health disparities

Current Research: Microaggressions and addictive behaviors among ethnic minority populations

Recent Publications:

Blume, A. W., Resor, M. R., & Kantin, A. V. (2009). Addiction treatment disparities among ethnic and sexual minority populations. In P. M. Miller (Ed.), *Evidence-based addiction treatment* (pp. 313-325). San Diego: Elsevier Press.

Blume, A. W., Resor, M. R., Villanueva, M. R., & Braddy, Leslie D. (2009). Alcohol use and comorbid anxiety, traumatic stress, and hopelessness among Hispanics. *Addictive Behaviors, 34,* 709-713.

Skewes, M. C., Dermen, K. H., & Blume, A. W. (in press). Readiness to change and post-intervention drinking among Hispanic college students living on the US/Mexico border. *Addictive Behaviors*.

Blume, A. W. (in press). Minority groups and addictions. In P. M. Miller (Ed.), *Encyclopedia of Addictive Behaviors*. Oxford: Elsevier.

Armando X. Estrada, Ph.D. Vancouver campus (see description under Industrial/Organizational)

J.P. Garofalo, Ph.D. Vancouver campus

Doctoral Degree: University of Texas Southwestern Medical Center, 1994

Interest Areas: Health psychology

Teaching Specialties: Health psychology; Abnormal Psychology

Current Research: Neurocognitive and psychological sequelae of cancer therapies; Psychological adjustment in medical populations; Quality of Life in medical populations; Symptom Burden

Recent Publications:

Terrill, A., Ruiz, J., & Garofalo, JP. (2010). The Social Side of Seeing the Silver Lining: Interpersonal Validation of Dispositional Optimism. *Journal of Behavioral Medicine,* 33(5), 399-414.

Olsund, SR, Robinson, RC, Clark, TC, Garofalo, JP, Behnke, P, Walker, B, Walker, KE, Gatchel, RJ, Mahaney, M, & Noe, CE (2009). Long Term Effectiveness of a Comprehensive Pain Management Program: Strengthening the Case for Interdisciplinary Care. *Baylor University Medical Center Proceedings*, 22(3), 211-214.

Garofalo, JP, Choppala, S, Hamann, H, & Gjerde, J (2009). The effects of uncertainty in illness on quality of life in cancer patients. *Journal of Cancer Nursing,* 32(4), 8-14.

Garofalo, JP, Soliday, E, Cole, B, Dawson, E, & Henderson, BN (2009). The Impact of a Breast Cancer Diagnosis upon Family Members. *Journal of Psychosocial Oncology*, 27, 1-17.

Michael M. Morgan, Ph.D. Vancouver campus (see description under Biological)

Tahira Probst, Ph.D. Vancouver campus (see description under Industrial/Organizational)

Elizabeth Soliday, Ph.D. Vancouver campus

Doctoral Degree: University of Kansas, 1995

Interest Areas: Maternal health and mental health

Teaching Specialties: Behavior disorders in children and adolescents; Helping skills (clinical psychology)

Current Research: The interaction of *physical factors,* such as general health, *psychological factors,* such as anxiety, and *contextual factors*, such as birth interventions, in predicting mothers' physical, psychic, and social well being over the short and long term.

Recent Publications:

Soliday, E. (2011). Labor induction or anxiety reduction? *The Yale Journal for Humanities in Medicine.* URL: http://yjhm.yale.edu/essays/esoliday20110313.htm

Soliday, E. (in press). *Maternal medical patients' rights reflected in women's reported childbirth experiences. Techne: Journal of Women in Medicine.*

Soliday, E., & Fancher, J. (2010). Postpartum depression. In A. O'Reilly & J. G. Golson (Eds.) *Encyclopedia of Motherhood.* London: Sage.

Soliday, E. (2009). Intensive mothering, intensive visiting: How mothers view prenatal care schedules. *Journal of the Association for Research on Mothering, 11, 19-26.*

Katie Witkiewitz, Ph.D. Vancouver campus

Doctoral Degree: University of Washington, 2005

Interest Areas: Addictive behaviors; Clinical psychology; Statistical and mathematical modeling of health behavior change

Teaching Specialties: Abnormal psychology; Addiction Treatment; Assessment and Treatment of Dual Disorders; Multivariate Statistics; Latent Variable Modeling

Current Research: Predictors of substance use relapse; Relapse prevention and mindfulness-based interventions for substance use disorders and pathological gambling; Treatment for comorbid mental health and substance use disorders; Longitudinal data analysis; Mechanisms and moderators of behavior change; Initiation of substance use and development of substance use disorders; Tobacco cessation treatments

Recent Publications:

Witkiewitz, K., Bowen, S., & Donovan, D. M. (2011). Moderating effects of a craving intervention on the relation between negative mood and heavy drinking following treatment for alcohol dependence. *Journal of Clinical and Consulting Psychology, 79,* 54-63.

Witkiewitz, K. & Marlatt, G. A. (2011). Behavioral therapy across the spectrum. *Alcohol Research and Health, 33,* 313-319.

Witkiewitz, K. & Bowen, S. (2010). Depression, craving and substance use following a randomized trial of mindfulness-based relapse prevention. *Journal of Consulting and Clinical Psychology, 78,* 362-374.

Witkiewitz, K., Hartzler, B., & Donovan, D. M. (2010). Matching Motivation Enhancement Treatment to client motivation: Re-examining the Project MATCH motivation matching hypothesis. *Addiction, 105,* 1403-1413.

Witkiewitz, K., Maisto, S. A., & Donovan, D. (2010). A comparison of methods for estimating change in drinking following alcohol treatment. *Alcoholism Clinical and Experimental Research, 34,* 2116-2125.

APPLIED QUANTITATIVE METHODS:

Leonard G. Burns, Ph.D. Pullman campus

Doctoral Degree: University of Connecticut, 1985

Interest Areas: Child and Adolescent Clinical Psychology

Teaching Specialities: Quantitative Methods (Regression, Factor Analysis, Applied Structural Equation Modeling, Latent Variable Modeling)

Current Research: Construct validity of the ADHD, Oppositional Defiant Disorder, and Conduct Disorder within and across cultures.

Recent Publications:

Burns, G.L., Moura, M.A., Walsh, J.A., Desmul, C., Silpakit, C. & Sommers-Flanagan, J. (2008). Invariance and convergent and discriminant validity between mothers' and fathers' ratings of oppositional defiant disorder toward adults, ADHD-HI, ADHD-IN, and academic competence factors within Brazilian, Thai, and American children. *Psychological Assessment, 20*, 121-130.

Burns, G. L., Desmul, C., Walsh, J. A., Silpakit, C., Ussahawanitchakit, P. (2009). A multitrait (ADHD-IN, ADHD-HI, ODD toward Adults, Academic and Social Competence) by multisource (mothers and fathers) evaluation of the invariance and convergent/discriminant validity of the Child and Adolescent Disruptive Behavior Inventory with Thai Adolescents. *Psychological Assessment, 21,* 635-641.

Severa, M., Lorenzo-Seva, U., Cardo, E., Rodríguez-Fornells, A., & Burns, G. L. (2010). Understanding trait and source effects in ADHD and ODD rating scales: Mothers', fathers' and teachers' ratings of children from the Balearic Islands. *Journal of Clinical Child and Adolescent Psychology, 39,* 1-11.

Moura, M. A. & Burns, G. L. (2010). Oppositional defiant disorder toward adults and oppositional defiant disorder toward other children: Evidence for two separate constructs with mothers' and fathers' ratings of Brazilian children. *Journal of Child Psychology and Psychiatry, 51*, 23-30.

Shipp, F., Burns, G. L., & Desmul, C. (2010). Construct validity of ADHD-IN, ADHD-HI, ODD toward adults, academic and social competence dimensions with teacher ratings of Thai adolescents: Additional validity for the Child and Adolescent Disruptive Behavior Inventory. *Journal of Psychopathology and Behavioral Assessment, 32,* 557-564.

Craig D. Parks, Ph.D. Pullman campus (see description under SOCIAL)

John Roll, Ph.D. Spokane campus

Doctoral Degree: Washington State University, 1994

Interest Areas: Treatment of Substance Use Disorders

Current Research: Contingency Management of Psychostimulant Abuse in the Severely Mentally Ill

Recent Publications:

Roll, J.M. (2007). Contingency management: an evidence-based component of methamphetamine use disorder treatments. *Addiction, 102 Suppl 1,* 114-20.

Roll, J. M., Howard, J. (2008). Economic gain versus economic loss: Role of reinforcer valence in initiating abstinence. *Journal of Applied Behavior Analysis*, 41, 629-633.

Roll, J.M., Reilly, M.P., Chudzynski, J., Mercado, P. (2009). Modulating the Reinforcing effects of alcohol in humans. *Psychological Record, 59*, 335-346.

Roll, J. M., Madden G. J., Rawson, R., & Petry, N. M. (2009). Facilitating the Adoption of Contingency Management for the Treatment of Substance Use Disorders. *Behavior Analysis in Practice,* 4-13.

B. Other faculty associated with the program
(Back to Top)

Celestina Barbosa-Leiker, Ph.D. (Applied Quantitative Methods – Spokane campus)

Greg Belenky, Ph.D. (Sleep Research – Spokane campus)

Thomas A. Brigham, Ph.D. (Behavior Analysis – emeritus faculty member)

Brian Dyre, Ph.D. (Human Factors – Univ. of Idaho)

Stephen Lakatos, Ph.D. (Sensation/Perception – Vancouver campus)

Matthew Layton, M.D. (Research in the Addictions – Spokane campus)

Sterling McPherson, Ph.D. (Applied Quantitative Methods – Spokane campus)

Frances K. McSweeney, Ph.D. (Behavior Analysis -- currently serving in the Provost's office)

Steffen Werner, Ph.D. (Human Factors – Univ. of Idaho)

John W. Wright, Ph.D. (Biological – Pullman campus)