Results of 2011-2012 Psychology "Learning Outcome Assessment Plan"

Learning Goals

1. By the completion of the program, graduates will be able to formulate or pose a research question or scholarly project.

2. By the completion of the program, graduates will be able to conduct independent research using methods appropriate to the field or discipline.

3. By the completion of the program, graduates will be able to communicate the results, findings or new interpretations of their scholarly work.

4. By the completion of the program, graduates will be able to communicate discipline-specific knowledge to students and/or the public.

5. By the completion of the program, graduates will be able to critically evaluate scholarly work and/or research conducted by peers.

A. Results and evidence of our direct and indirect measurements

Our department identified 8 assessment measures for 2011-2012, both direct and indirect, to evaluate learning outcomes. These were the same measures utilized in 2010-2011. Two years ago, our department implemented significant changes to our training program, in part to better achieve the learning goals we have traditionally identified. This past year represents the first year fully under the new training system (STEP, for ‘Student Training and Evaluation Plan’), following what was something of a transitional year. For each measure and learning goal, we will note our current findings and related upcoming actions, improvements sought, changes or related plans.

As a reminder, the Psychology Department consists of three graduate training programs, Clinical, Cognition and Development (C&D), and Neuroscience and Animal Behavior (NAB). The departmental learning goals and assessment strategies are the same for students across the three programs.

Direct assessments

(1) First year review paper:
As part of the department’s new training program, students prepare a first year review paper that they discuss and defend in April of their first year. This paper requires that students write a substantive review of literature relevant to their research interests and encourages students to begin to formulate and formalize research questions early in their graduate training. With this review paper, students must engage with the scientific literature and learn to review and critique empirical and theoretical findings in their research area. The preparation of this paper is done with scaffolding and mentoring from the student’s Faculty Advisory Committee (FAC), which is composed of their advisor and two additional faculty, one of whom must be outside the student’s program. In addition to writing the review paper, students meet with their FAC in April of their first year to discuss the review as well as their training plans and CVs. Each student then receives written feedback from their FAC on their paper, as well as feedback on their progress to date in the program. Thus, the first year review paper along with discussions within the FAC meetings provides students with feedback early in their graduate training on
their writing and thinking, provides a base of mentoring extending beyond the main adviser, and is a mechanism for identifying areas for improvement in the student's written and oral communication.

**Findings:** 16 first-year students in Psychology completed their first year review papers and met with their FACs to discuss the paper and their training progress. 7 were from Clinical, 4 from C&D, and 5 from NAB. The successful completion of this requirement by these students is one indication that each of these students met the standards of the individual committees for the paper as well as those of the department. Successful completion of this paper is a global outcome measure that indicates that students met the following learning goals --the ability to *formulate or pose a research question or scholarly project* (Learning goal #1), *communicate the results, findings or new interpretations of their scholarly work* (Learning goal #3), and *critically evaluate scholarly work and/or research conducted by peers* (Learning goal #5).

Beyond noting that each eligible student completed their first year review paper, the relative strengths of most of the graduate students at this level were the clear formulation of a research question and the comprehensive review, integration, and interpretation of relevant literature. The FAC meeting process did identify some conceptual and practical weaknesses; for example, for one NAB student, these were related to comprehension of her own research question and her laboratory performance, despite a paper judged to be adequate overall. This finding has been helpful in the program's decision of directions in which to advise the student in question.

**Action Plan:** The written and verbal feedback provided to each student by their faculty advisory committee (FAC) will help foster critical thinking and evaluation skills early in training. Students who have difficulty at this stage will be identified and provided with additional mentoring and feedback. In addition, the faculty will discuss how to make the written feedback and overall evaluation more comprehensive and less dependent on the paper alone.

**(2) Master's Thesis:**
Under STEP, students now defend their Master's thesis in the spring of their second year. The Master's thesis requires that students formulate a research question, design and conduct a substantive research project, organize and statistically evaluate results, and prepare a thesis document reporting their work. The formal Master's thesis encourages students to begin to engage in independent research with scaffolding and mentoring from their faculty advisor and Master's committee. The written thesis format includes a critical review of work in the field, along with a report and discussion of findings. In addition, students must orally defend their thesis work before their FAC committee, which as noted above, consists of faculty members in the department including their advisor, one additional faculty member from the student's area of expertise (program) and one from outside the student's area of expertise. Thus, the Master's thesis and defense require that students be able to effectively communicate their findings, both to scholars inside and outside their field.

**Findings:** 16 second year students in Psychology were scheduled to complete their Masters research and all of these students successfully defended both the oral and written components of the thesis project. The majority completed by the department’s May 1 deadline, and all by late June. 7 were from Clinical, 5 from C&D, and 4 from NAB. In addition, two third-year students who had received extensions of the deadline from the previous spring successfully defended their projects in the fall. The successful defense of the Masters by these students indicates that each of these students met the standards of the individual committees as well as the department. Successful completion and defense of the Masters thesis is a global outcome measure that indicates that students met the following learning goals --the ability to *formulate or pose a research question or scholarly project* (Learning goal #1), *communicate the*
results, findings or new interpretations of their scholarly work (Learning goal #3), and critically evaluate scholarly work and/or research conducted by peers (Learning goal #5). The relative strengths of graduate students at this level are methodological rigor, statistical competence, and formulation of a research question. Relative weaknesses continue to include variations in ability to critically review the literature and to generate novel, insightful interpretations of findings.

**Action Plan:** In addition to addressing learning goals as described above, the Master’s format (journal style manuscript) is intended to scaffold learning goal #3 by having students formally submit manuscripts for publication as soon as possible after the successful defense. We will begin to track how well this particular subgoal is met.

(3) **End of year research festival or research presentation within each departmental program:**

Presentations are an integral part of our discipline and a necessary professional skill.

All students are required to give an oral presentation for the faculty and graduate students within each departmental program, either in a program-based end-of-year research ‘festival’ (Clinical and C&D) or in the regular weekly Research Seminar sessions in Spring (NAB). Students essentially give a talk on research or professional issues lasting from 15 minutes to an hour, depending on program. In the NAB program, students also receive written, anonymous feedback from both student and faculty colleagues on the style and content of their talk. This requirement allows us to evaluate each student’s ability to clearly communicate their research objectives, results, interpretations, or the conceptual and ethical issues surrounding some aspect of scholarly work.

**Findings:** Approximately 62 students across years and across programs gave program presentations. Approximately 28 were from Clinical, 20 from C&D, and 14 from NAB. In general, senior students who had been in graduate training for three or more years gave clear, well-organized presentations that effectively communicated the conceptual framework and methodological details of their research projects. Senior students’ presentations were more polished than junior students’ (1st and 2nd year students) presentations, indicating that the opportunity to present and receive feedback not only at the end of each year, but also in class, teaching, and professional meeting contexts helped to develop communication and presentation skills over the course of their graduate training. However, there was also substantial variability. Several first year students, for example, gave exceptionally clear and polished presentations; others ranged from poorly organized or spoken to revealing fundamental difficulties with comprehension of concepts related to their research. The end of the year presentations allow for the assessment of students’ ability to formulate or pose a research question or scholarly project (Learning goal #1), communicate the results, findings or new interpretations of their scholarly work (Learning goal #3), and communicate discipline-specific knowledge to students and/or the public (Learning goal #4).

**Action Plan:** Although our students improved in their ability to communicate clearly and effectively over the course of graduate training, there was variability across individual students. In order to provide additional feedback and scaffolding to students, under our revised graduate training program, students select and meet with a faculty advisory committee (FAC) during their first two years of graduate study. The FAC will provide additional mentoring and concrete feedback to students from early on in their training on their ability to communicate and present their work to scholars both inside and outside their area of expertise.
Qualifying Exam, with both written and oral components:
In preparation for the qualifying exam, students prepare a “platform paper” that can either be a substantive critical review paper or a grant proposal, in collaboration with their FAC. Once this written work is approved by their FAC, the paper or proposal provides the platform for their qualifying examination, which is evaluated by a qualifying examination (QE) committee of three faculty – a member of the student’s FAC and two additional faculty, when possible one drawn from each of the other programs. The format of the qualifying exam consists of independent written responses to three broad, substantive questions (12 pages) related to the research area outlined in the platform paper and to written feedback and reviews of the submitted platform paper generated by the QE committee (3 pages). In the QE responses, students are asked to critically review and comment on core questions in the field of psychology and to communicate their assessments, critiques, and ideas not only to faculty within their subfield but across programs within the department. All students submit their platform papers in the fall of their third year of study and if approved, write their examination over winter break and defend their responses orally before their examining committee in the spring of their third year. Once students receive their questions and reviews, they are not allowed to discuss their paper or topic with anyone until their qualifying exam paper is submitted to their committee; the goal is to assess their independent work. Their written product and their oral presentation of their arguments are thus intended to provide a clear assessment of students’ critical thinking and communication skills. Students are given two chances to pass the examination. If they fail the first try, they are assigned a new examining committee that provides new questions and reviews and the student must write new responses. The second try occurs during the spring semester of their third year. This year (second time through the STEP system, we also instituted a policy of providing written feedback to students who do not pass the exam.

Findings: 8 students in Psychology attempted the qualifying examination this year and all successfully defended the exam. 5 of these students were from Clinical, 1 from C&D, and 2 from NAB. One of the students (from Clinical) did not pass the exam on the first try and was required to retake the exam. In terms of evaluation, each of the three faculty members on the examining committee scores the student’s performance as pass or fail on each of five elements of the exam: 1) response to reviews, 2) Question #1, 3) Question #2, 4) Question #3, and 5) oral defense. The maximum score is thus 15 with 9 out of 15 passes required to pass the exam. The mean score for this cohort of students was 11.67 and the range was 7 to 15. Passing performance indicates that these students were able to communicate the results, findings or new interpretations of their scholarly work (Learning goal #3), communicate discipline-specific knowledge to students and/or the public (Learning goal #4), and most significantly, critically evaluate scholarly work and/or research conducted by peers (Learning goal #5). In addition, we (the DGS and Chair) met with students who had completed the exam this year to solicit feedback about strengths and weaknesses of the Qualifying Exam as a learning tool. One particular strength was identified as the exam’s ability to motivate students to investigate areas of the scientific literature that they had not previously seen as related to their work, enhancing their ability to formulate research questions and evaluate a broader range of scholarly work. One weakness was found to be the lack of clarity in how students should go about formulating the response to reviews, leading to missed opportunities to address learning goal #3 optimally.
Action Plan: The administration of the qualifying exam in this format is part of the department’s STEP program; this was the second year of implementation. Although we believe that performance on the qualifying exam in the format described above provided valuable information about individual students’ strengths and weaknesses, our department is continuing to assess the training and assessment efficacy of this format. We are also preparing guidelines and examples for students to use in their responses to reviews to make this portion of the exam more like a response to journal or grant review.

(5) Evaluation of Dissertations:
The process of proposing and defending the dissertation before and with a faculty committee allows for the most direct assessment of the range of skills and learning outcomes that are listed above. The dissertation requires students to work and think independently and their ability to construct a research question and complete a comprehensive research project is evaluated by the committee.

Findings: 9 students in Psychology completed and successfully defended both the oral and written components of the thesis project. 5 were from Clinical, 2 from C&D and 2 from NAB. The successful defense of the dissertation by these students indicates that each met the standards of the individual committees as well as the department. Successful completion and defense of the dissertation is a global outcome measure, like the Masters thesis, that indicates students have achieved all five of the department’s learning goals --the ability to formulate or pose a research question or scholarly project (Learning goal #1), conduct independent research using methods appropriate to the field or discipline (Learning goal #2), communicate the results, findings or new interpretations of their scholarly work (Learning goal #3), communicate discipline-specific knowledge to students and/or the public (Learning goal #4), and critically evaluate scholarly work and/or research conducted by peers (Learning goal #5).

In general, the relative strengths of graduate students at this level were methodological rigor, statistical expertise, scholarly independence, and breadth and depth of knowledge. We identified few general training or assessment-related weaknesses.

Action Plan: We do not anticipate changing the format or requirements of the dissertation project or defense in the future.

Indirect assessments

(6) Publication Rate:
Findings: Publication rate is an indirect index of the learning outcomes or goals outlined above, but always needs to be evaluated in the context of the particular subfield and the nature of the work. However, a note of caution should be raised. One weakness of the assessment measure is that it depends on student self report, so these rates are only for students who reported publishing in the target year. Without complete data, rates per student are particularly suspect. For this reason, we report only totals here. Psych grad students were authors on journal articles or invited chapters in scholarly materials 30 times. Psych grad students will also be authors on upcoming journal articles or invited chapters in scholarly materials 19 times, for a total of 49 graduate student authorship contributions to scholarly publications. Altogether, 26 different students, distributed across all three programs, participated in authoring a publication this past year (roughly one-third of the present complement of grad students). Still, these numbers could significantly underestimate the number of publications or of students participating in publication activity.

Action plan: Although many of our students appear to have excellent publication records, in order to emphasize this aspect of their career training, we have instituted as part of our new training plan the requirement that students submit CVs at the end of their first and second years for discussion with their faculty advisory committees. In this manner, publication rate is discussed and evaluated explicitly and will insure that publications at least to the end of the second year are reported consistently across
students. However, we continue to strive to get accurate self reports, although compliance was improved over last year. In addition, future assessments will evaluate both the impact of the journals that are publication targets for students in each program and the independent or collaborative nature of the submissions in order to better evaluate the extent to which number of publications reflects the achievement of the stated learning goals.

(7) Presentation at major conferences:
As indicated earlier, oral presentations are an integral part of student training and assessment as well. The extent to which students engage scholars in the field and the quality and clarity of their presentations reflect students’ ability to think clearly about their own research and communicate that thinking to the community of scholars.

Findings: Psych grad students were authors on poster presentations or were speakers for oral research presentations at scholarly conferences 72 times. Altogether, 33 different students, well distributed across all three programs, participated in giving and/or authoring a conference poster or oral presentation this past year. Altogether, 43 different students published an article, chapter, or conference contribution in 2011-12. Additional presentations and publications are likely to have been given or produced by students who completed their degrees early in the school year, including some while they were still students, but who may not have received or responded to the departmental request for achievement updates.

Action plan: Although many of our students are clearly highly engaged in professional presentation, one goal going forward is to better track the achievements of students who finish in a given year, as well as assuring that we do hear from everyone currently enrolled.

(8) Placement:
Placement is one indicator of how well our graduates ultimately formulate or pose a research questions, conduct independent research, and communicate discipline-specific knowledge. This assessment should be interpreted in the context of the current job market and environment. Placement is discussed in the main narrative of the Annual Report, but included here as well for ease of reference.

Findings: Academic placements for our students have been fairly strong both recently and historically. In keeping with the majority of the field, most of our graduates’ first placements are postdoctoral fellowships, usually in very visible programs. A number of our graduates have also obtained tenure track positions at colleges and universities and many others hold prestigious positions at research institutes. Of the 9 students graduating in 2011-2012, 6 are currently post-docs, one is a Clinical Fellow, one went directly to an assistant professor position, and one is unplaced. Of the 11 students who graduated in 2010-2011, 6 are currently post-docs, two are non-tenure-track faculty, one is an assistant professor, and two are practicing clinicians. A total of 13 students who received the PhD in 2006 or later are currently tenure-track faculty. Differences among subfields are reflected in differences in placement between programs: students obtaining faculty positions ‘out of the gate’ tend to be in C&D and Clinical, whereas NAB students tend to spend longer in post-docs, especially when engaged in primate research, where projects – especially the longitudinal ones that a number of our faculty and students do – have an extended timeline, and where many kinds of projects can only be accomplished in a restricted number of settings. Overall, our placements indicate that we have been successful at producing students who have achieved our learning outcome goals.

Action plan: Although we have evidence that our students are being placed in excellent positions, we continue to strive to obtain more complete data regarding not only first placements but second and third placements to evaluate where our students are ultimately placed. Because it is common in psychology for graduates to do postdoctoral training, it is imperative that we track students into both their first and subsequent positions in order to determine if our graduates are meeting not only our
goals, but their own goals as well. Moreover, traditionally, placement goals for Psychology students have focused on students attaining tenure-track academic positions, emphasizing research. As also discussed in the Annual Report main narrative section on program size, this view is in some degree of flux as increasing numbers of our graduates find satisfaction in other types of teaching or applied careers, and as our students themselves express interest in exploring additional options, especially as they relate to teaching. One important goal is for the faculty to explore our own views of non-traditional pathways for our graduates, as well as identify resources for making those pathways more available to interested students.

**Psychology – Assessment Plan**

**2012-2013 Psychology "Learning Outcome Assessment Plan"**

For the upcoming assessment year, Psychology plans to use the same set of 8 assessment measures employed this year and detailed above, plus add one indirect assessment measure: Applications for External Funding and Funding Awards.

**Applications for External Funding and Funding Awards**

Applications for research or stipend/salary funding are an integral part of a research career. Like presentations at major conferences, completed external funding applications demonstrate a student's confidence in formulating research questions, proposing independent research, communicating with scientific colleagues, evaluating scholarly work, and sometimes (depending on the grant entity) communicating discipline-specific knowledge to the public. Thus, this measure also addresses most or all of our main learning goals. The extent to which students engage scholars in the field and others and the quality and clarity of their applications reflect students' ability to think clearly about their own research and communicate that thinking to others, so funding actually awarded is also a valuable outcome to assess.

For example, this report year, Psychology graduate students submitted at least 30 applications for significant stipend or research support, of which 7 have been funded and 6 more are pending (including several for post-doctoral positions). Of particular note is our success with NSF Graduate Research Fellowship applications; this year 11 Psychology students submitted these applications and three were funded (two in NAB and one in Clinical), plus one honorable mention received. We also had at least 4 students apply for a predoctoral NRSA (1 awarded, 3 pending). Although we have seen an improvement in response rate to our requests for update on funding applications, continued better tracking of these materials as well is a goal for the future.