

The 2-4 Project:

Review of years 2-4 in the Experimental Pathology Graduate Program.

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The Graduate School has called for training programs to reevaluate the training experience, especially for years 2-4. In response, the **Ex Path** program has undertaken a review. The review included distribution of written queries from the 2-4 Project document to our graduate trainees, followed by a “town meeting” with the students that was held November, 2006. The results have been discussed with the graduate trainers in the Ex Path program, and have led to some changes.

1. Trainee responses to the 2-4 Questionnaire. By and large, the students did not perceive major deficiencies in present system, but they did have many opinions and suggestions.

a. Mentoring practices Typically, mentors interact with trainees through weekly lab meetings, and at least weekly meetings between individual students and PI's. Mentors are accessible, meet with them more frequently early on in training. Overall, this works well.

b. Writing Fellowship applications. The students like the idea of writing fellowships and/or reviews of the literature in their area early on in their career. They are open to the idea of getting brief formal instruction in fellowship/grant writing, which would logically be rolled into the seminar course first term year 1 to help the students write NSF fellowships. They would also like access to sample grant and fellowship applications written by faculty and students. For example, in one track, students work in teams of four students for self-critique before bringing in faculty input.

c. Handbook. The students would like a handbook for first year (when they are handled by the Tracks) and for subsequent years.

d. Course work. This is a BBS track and training program issue. The typical load for Ex Path students (who usually come in through Pharm/Molecular Medicine track) is three terms of two didactic courses and one seminar course (Pharm/Path seminar in year 1), followed by the qualifiers in second term of year 2 and sometimes one additional course. These generally include Cell Biology, the required Mechanisms of Disease and Cellular and Molecular Biology of Cancer courses, along with any of a number of electives. The students would like orientation well before the first week of classes their first year, especially since the shopping period is confusing, with a wide range of choices.

e. Qualifying exam. Ex Path has a stringent oral and written qualifying examination system. No major issues were raised by the students. Again, there is some confusion since the different training programs have different variations on this process.

f. Pathology program cohesion. Challenges include more consistent participation of all the faculty and their trainees, and communications issues.

2. New and continuing policies to ensure excellence in the training experience.

a. Mentoring practices. Students in the Pharm/Molecular Medicine track meet individually with the track directors (usually, the DGSs for Pathology and Pharmacology) prior to the start of their first term. The DGSs are readily accessible to the students, and the DGSs encourage students to seek them out. DGSs also touch base with the students during group orientation meetings, and after each of the three rotation talks.

During the first year, students are evaluated by their class directors and by their rotation advisers. The latter fill out a formal written evaluation form. The DGSs informally contact directors of the major courses mid-way through the terms, to try and catch student problems as they arise.

New policies will include moving the individual DGS meeting to at least a week prior to start classes in the fall. Pathology will schedule a mini-symposium/retreat to welcome and orient the students as early as practicable in the year as possible.

b. Fellowship writing.

Structured fellowship writing will be added to the curriculum for the fall, first year seminar course. Sample grants and fellowships will be made available.

c. Handbook. *Track and program handbooks for Pathology and Pharmacology are now being developed, based on model handbooks provided to us by Genetics and Immunology. Both students and faculty are involved in the process.*

d. Course work. *There doesn't seem to be any problem here.*

e. Qualifying examination. *The Experimental Pathology steering committee will re-evaluate the qualifiers, and determine whether the format can be simplified without sacrificing breadth and rigor.*

f. Program cohesion. *In response to student input, we began a series of monthly student/faculty lunches around three years ago. With student and faculty input, we have now initiated weekly departmental "Happy Hours" that each week include a brief informal talk by individual faculty. This has been quite successful so far.*

g. Ongoing formal evaluation. *Once the students have Qualified, they meet at least annually with an independent thesis committee, which evaluates progress, ensures the quality of the dissertation research, and acts as an independent counterbalance to the PI in mentoring. The committee questions the adviser and trainee individually in the absence as well as presence of the other. A formal summary of progress is provided by the committee to the training program. And, all students beginning year 2 fill out annual self-evaluations that are read and commented on by the Pis, and submitted through the online form system to the Graduate School. Every student presents his/her research to the department through the Pathology Research-In-Progress Seminar series, which meets on alternate Tuesdays, lunch included. This provides another informal opportunity to assess the student's presentation skills and progress.*

The program itself has a core committee now consisting of David Stern, DGS; Wang Min, DGA, and Gerald Shadel, in training to replace David Stern in 2008. The graduate steering committee includes also Themis Tsakraklides (underrepresented minorities), Michael Robek (responsible conduct), Michael Krauthammer, and Robert Means. A number of other faculty actively participate in governance of the program through meetings of the training faculty.

Online evaluations are new this year, but the process works smoothly.

h. BBS. *The BBS nominally affects training only in the first year. But, since it includes representation from all of the training programs, it has become an important meeting ground for addressing common training issues and individual track/program problems. It is difficult to overstate the positive impact this system has had on recruiting the best possible students, slotting them out to faculty and programs that will meet their interests and needs, rationalizing the schoolwide graduate curricula, and ensuring smooth, and funded progress in the later years of training.*