

The Computer Science Department and the 2-4 Project

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Submitted by Drew McDermott,
DGS in Computer Science

The goal of the 2-4 Project is to ameliorate problems arising in the gap in graduate students' careers between taking courses and carrying out independent research — typically from years 2 to 4 in a student's time here. There are several potential problems, including spotty student evaluation and feedback, delays in giving exams, and courses that don't train students to do research.

We were asked to appoint a committee, get student feedback, and discuss these issues at a faculty meeting. Being a small department, we let the DGS serve as a committee of one. The students elected to hold a meeting without faculty participation, and have two representatives summarize the results of that meeting. All of these matters were then discussed at a faculty meeting.

Executive summary: Our only problem in the “2-4 zone” is some sloppiness in handling of paperwork verifying that students have satisfied the criteria for admission to candidacy. We are taking steps to tighten these bureaucratic procedures up. We would also like to address some of the students' comments *not* specifically relating to “2-4” issues.

Student feedback: There were two sources of student feedback. First, students provided written responses to queries directly to the graduate school, which were then forwarded (anonymized) to the DGS. There were very few of these (assuming we got the whole batch). Second, the two representatives chosen at the student meeting (who by coincidence are also the Department's GSA members), Christopher Crick and Elizabeth Kim, talked at great length with the DGS about the results.

There was virtually no criticism from the students about the issues the 2-4 Project is concerned with. In the Computer Science Department, to be admitted to candidacy a student must do three things:

1. ... write a “690 report.” The name comes from the number assigned to the two-term research course that every student takes beginning in the third term. This is essentially a Master's Thesis. It reports on original research work, preferably publishable.
2. ... pass a qualifying exam. The form of the exam is decided by the student's “supervisory committee,” which consists of an advisor plus

two or three other faculty members in the student's research area. (The same committee grades the 690 report.)

3. ... write a dissertation prospectus.

The first two requirements must be finished by the beginning of the third year, the third by the end of the third year.

Students are evaluated at a special faculty meeting held at the end of every year. Every student receives a letter summarizing the results of that evaluation, stating clearly how many requirements he or she has satisfied and how many remain. If the student is in trouble, he or she is placed on "probation," and given specific milestones to meet in order to get back into good standing. These sometimes allow the student some slippage in meeting the 690 and qualifying-exam requirements. The student may be assigned a new advisor if further progress with the old one doesn't seem possible. The advisor, old or new, is tasked with reporting back to the faculty on the student's progress at the given milestone dates.

The faculty are encouraged to stay in contact with as many students as possible, through formal and informal mechanisms. Students are required to give talks to the whole department after writing their 690 reports and after writing their dissertation prospectuses. (These are called Official Graduate Student Talks, or OGSTs.) We also have a weekly program of lunches involving students and faculty.

We believe that these procedures and institutions are responsible for the small number of student complaints about the "2-4" issues.

However, we did receive significant feedback on several matters of concern to the students:

- *Quantity and quality of graduate courses:* The most consistent complaint we heard is that there are not enough substantive courses for graduate students. A large number of CS courses are double-numbered. We do try to provide extra work for students taking a course at the 500 level, but it doesn't satisfy them. A typical comment: "The assignments are not very demanding, the pace is not fast enough, and the exams are not that hard. Perhaps at the graduate level we can be expected to challenge ourselves, but I think a learning environment that demands a lot of its students would help me push myself." The students have reacted by organizing their own seminars, often with faculty participation. Another student wrote, "I and my classmates are organizing a reading course ... in Type Theory, an important component of programming language theory. It seems odd that this is not

simply a regularly-taught course.”

- *Lack of faculty in key areas:* Students wish there were more faculty members, especially in Systems. They expressed amazement at the Administration’s failure to appreciate the national importance of computer science, a failure sometimes noticed by the faculty as well. In addition, more than one student expressed a wish that there were more junior faculty. “Junior faculty are an important bridge [between] the senior faculty and graduate students, and can work as role models in a much more direct way.”
- *Lack of channels for communication to faculty as a group:* Just as there is an undergraduate Departmental Student Advisory Committee, the graduate students thought there should be an organization of graduate students with a similar role.

Plans

We are taking steps to make our bureaucracy run a little smoother, by moving its components closer together. This should enable the active parts (the staff) to interact more closely with the passive part (the DGS). The faculty understand that they may be monitored more closely for prompt compliance with various requirements, especially as concerns 690 reports and qualifying exams.

We think the formation of a more permanent grad-student organization makes sense, and would improve cohesion and morale in return for a small investment on the department’s part. We will encourage the students to proceed with this.

The problem of graduate-student courses is a severe one. We don’t know of any way to eliminate it given existing personnel without shortchanging the undergraduates, and just pushing the problem somewhere else. We think the students’ proposals for the expansion of the faculty make a lot of sense.