

Graduate Students and Professional Student Senate (GPSS) Report Review of the Department of Mathematics

June 8, 2004

On May 12, 2004, the GPSS met with graduate students from the Department of Mathematics to discuss their thoughts and opinions about the graduate program. 15 students from both the terminal master's program and doctoral program participated in the discussion. The group was composed of students from the various cohorts (first-year students through fourth-year students). Surveys regarding the strengths and weaknesses of the Math Department were distributed to the students to stimulate discussion. The discussion covered multiple topics that included curriculum, financial aid, faculty and staff, diversity, facilities, recruitment, and career development. Overall, the students appreciated the collegial atmosphere and camaraderie with fellow students. The students were mutually pleased with financial support from TA positions, and with the overall openness of faculty members. However, concerns were raised in both the survey and discussion regarding student and faculty diversity, and the transition from coursework to research. Students also reported that faculty members often overlook student goals in favor of raising the department's prestige. This report will cover these issues in further detail. The strengths and weaknesses of the Math Department as identified by the students are detailed below.

Department Strengths

The students that participated in the focus group all hailed from areas outside of Washington State, including Pennsylvania, Arizona, Argentina, Germany, Canada, and Taiwan. They group all possessed undergraduate mathematics degrees before entering their respective graduate programs. Two of the participants were terminal master's candidates, while 13 were doctoral candidates. The participating students identified the following as the department's strengths:

- Positive atmosphere. The students all appreciated the outgoing nature and helpfulness of the students in the department. They expressed that the department has a non-competitive atmosphere, and that students are friendly and easy to work with. The more experienced students are very encouraging to new students, and they are able to socialize well both in the classroom and outside of it.
- Tuition assistance. All of the students that participated in the focus group received full financial support either from research fellowships or TA positions. The group expressed their satisfaction with the availability of TA positions.
- Faculty willingness to help. The students mentioned that faculty members have, been willing to work with students and to assist them with their coursework and research. Overall, faculty members are approachable and supportive. Faculty advisors have also been very helpful to the students, and all of them expressed their satisfaction with their advisors.

- NSF VIGRE Fund. Students mentioned the department's receipt of a National Science Foundation award of \$5 million over the next five years to integrate math teaching and practice throughout all levels of education. The department has earmarked portions of the fund for fellowships and department improvements. This award has led to noticeable improvements in the department and has provided fellowship support to many students.
- Upgraded computer resources. Through the NSF VIGRE Fund, the department was also able to upgrade computer systems and software last year. The graduate computer lab offers free printing and photocopying services.
- Variety of course offerings. In addition to their core curriculum, students were able to take various special topics courses that different faculty members taught. These topics usually cover the specific research of a faculty member, and they provide multiple perspectives on the field of mathematics. These courses are also offered frequently, and students appreciate their availability.
- Excellent administrative support. The students were grateful for the support they have received from the department staff. The staff has been very supportive of the students, and they are especially helpful when the students act as TA's for a course. The administrative staff provides excellent logistical support and the students are pleased with the lack of bureaucracy when it comes to requesting supplies or assistance.
- Outstanding TA training and mentorship. All TA's receive one week of training before Autumn Quarter. The trainings are conducted by the TA Coordinator (faculty member), and one current graduate TA. The training covers topics such as methods of instruction, how to deal with students, and how to administer exams. The group expressed that they receive ongoing mentorship for their TA positions.
- Opportunities to attend colloquia and seminars. Some students expressed their gratitude for the availability of seminars in current and potential future research topics. Those students who are research-oriented appreciate the opportunities to participate in the regularly held colloquium series workshops and seminars.
- Increasing strength of students. The entering cohorts of students over the past few years have been increasingly strong. The students admitted that they rejected offers to other prestigious universities in order to attend the University of Washington. Current students were offered admission to other top-ranked programs including California Institute of Technology, University of Wisconsin-Madison, University of California, Berkeley, and University of Texas-Austin.
- Involved in department hirings. Students have participated in interviews with prospective faculty members, and have provided input into the hiring of new professors.

Of the strengths that were discussed, the students universally identified the positive atmosphere and environment as a defining strength. Also, the fact that all graduate students are fully funded creates a more positive and collegial atmosphere. Students do not feel any pressure to compete against other students for funding opportunities. Overall, students have sensed a genuine interest on the part of the department to make

improvements. The department has requested student input in the revamping of core classes, and students have been involved in the process.

Department Weaknesses

Along with the major strengths of the department, the students also identified some weaknesses and room for improvement. The weaknesses are outlined as follows:

- Conflict of interest. The faculty appears to be grooming the students for prestigious and more visible roles, such as research positions at top universities. Students feel that this direction may conflict with individual student goals, and discourages future careers in teaching.
- Lack of diversity. The students particularly emphasized a noticeable lack in ethnic and gender diversity among the students and faculty. Within the focus group, there was only one female, and she expressed that such a ratio is typical in the department. The students have noticed a decrease in the number of ethnic minorities entering the program, and have also expressed a lack of ethnic diversity among faculty members.
- Better transition from pre-doctoral coursework to dissertation research. Students expressed a lack of transition from coursework to research practice. They suggest that regular professional development workshops or courses should be taught to help with transition, as well as teach other useful skills. The current core curriculum does little to prepare students for the actual conducting of research.
- Research as the cultural norm. Students felt that the faculty are mostly research-driven, and value research pursuits above all others. Some students who may have other aspirations, such as teaching, often feel neglected by the faculty, and treated almost like second-class citizens. Students suggested the creation of two PhD tracks, one focused on research, and the other focused on non-research fields.
- Lack of professional training. The students felt that there was very little preparation for future careers in fields other than academia. This coincides with the philosophy that the department stresses research above all else.
- Core classes can be limiting. Students are required to take five core classes before proceeding into the dissertation phase. Three of the five courses are all in the same mathematics field (analysis). This provides a limited math view for students. One of these courses actually overlaps with the other two. The students suggest the possibility of eliminating this course, and to instead have a two-course series on analysis.
- Language exams. There is apparent confusion about exam requirements among students. The group could not all agree on what were the current examination requirements. Some students were required to take a language exam, while others were exempt. The students felt that more clarity is needed regarding the language prerequisites for the qualifying examinations.

Of the weaknesses discussed, the prioritizing of research over teaching appeared to be a common theme shared by the students. Students who are not heavily invested in conducting research often feel isolated from faculty members, and are not supported in the pursuit of their own goals. The group also stressed the need for the department to increase faculty and student diversity. They suggested the active recruitment of minority and female applicants.

Conclusions

Having stated the above concerns, the students are pleased with the challenging curriculum and general openness of faculty members. They especially appreciate the support from the administrative staff, and the camaraderie shared with each other. The students have genuine concern for the department, and hope its faculty takes serious measures in improving ethnic and gender diversity, and in being more open to student goals. The GPSS hopes that this report will serve as a reference and catalyst for the continued development and strengthening of the Mathematics Department, and graduate program.

Report completed by:
Joseph Balabis
GPSS Program Assistant