

Department of Geology, University at Buffalo

Department Overview

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As of Spring 2005, the University at Buffalo (UB) Department of Geology (www.geology.buffalo.edu) has 10 full-time tenured/tenure-track faculty, two research (non-tenure-track) faculty, and two adjunct (non-tenure-track) faculty instructors. The number of tenured/tenure-track faculty has remained about the same over the past 25 years, though we have hired one faculty per year for the last three years (mainly to replace faculty), and will be hiring this Fall to grow up to 11. We currently have 75 undergraduate majors (either BS or BA), the highest since 1990 and up from a low of 45 in 1998. Productivity—as measured by grants, publications, and numbers of graduate students (both Masters and PhD)—is on a similar upward trend.

We believe there have been two keys to our success and growth over the past 10 years. First, both previously existing faculty and faculty hired during that period have been highly productive in research. We currently average more than four publications per year per faculty member in prominent journals, and all but one faculty member has more than one active grant. The department average for grant support is about \$100k per year per faculty. This is greater productivity per faculty than several benchmark institutions. Based on this performance, it has been relatively straightforward to justify additional faculty lines to the administration as having greater “bang for the buck” than most other departments on campus, and has been an important factor in our growth.

The trend of increased productivity generally began with the hiring of an external department chair and subsequent implementation of a major change in departmental structure, although this could be either causal or coincidence since we only have anecdotal evidence. Regardless, the main decision of the new chair was to alter the departmental form from the one-faculty-per-specialty model (i.e., geophysics, structural geology, paleontology, petrology, hydrology, etc.) to being centered on a limited number of focus areas. Initially, there were two focus areas—environmental geology and volcanology—but we have recently increased the number of focus areas (mainly due to our increasing faculty size) to three by adding global change. The synergy of the faculty collected into the focus areas improved the graduate program (through availability of graduate courses), and has added healthy competition both among focus areas and among faculty within focus areas. Our positive departmental mentality is generally reinforced during day-long faculty planning retreats scheduled one- to two-times per year, at which time we revise our five-year plan.

The second key to our success has been the increase in our student numbers (both undergraduate and graduate). The increase in graduate numbers has come from the increased number of faculty, but also from that fact that each faculty currently has, on average, more than six graduate students (both MS and PhD). Increased numbers of “paying” graduate students (i.e., either actually paying tuition or supported through a research assistantship) is the current focus of the UB administration, and thus represents an important area growth for us. Our follow-up on recent graduates indicates a high degree of accomplishment in their employment, whether geology-

related or otherwise, signifying (at least anecdotally) the level of success of our graduate program.

The increase in undergraduate numbers has mainly come from higher enrollment in undergraduate introductory geology courses. In general, we have found that about 6% of students in our introductory course sequence “become” geology majors (either BA or BS), and this has remained fairly steady for at least a decade. Thus, since our main introductory sequence has grown from 75 students in 1999 to 240 students in 2004, we have seen the number of new majors per year from that sequence increase from about 6 to about 14. In addition, we offer a second introductory course sequence and have seen similar increases in enrollment and subsequent increases in the number of majors, such that we now graduate 20-25 undergraduates per year. Other factors that may influence and attract geology majors include: (a) our popular field camp, which is situated in Colorado, Utah, and Wyoming (www.geology.buffalo.edu/fieldcamp); (b) our active graduate & undergraduate geology clubs that plan trips and “get togethers”; (c) the constant revision of the curriculum in order to make the course content and course sequences more relevant to today’s demands; and (d) the Buffalo Geosciences Program (www.bgp.buffalo.edu), which is a NSF-sponsored program—housed in our department—that is designed to enhance diversity in the geosciences. In general, our undergraduate population is 55% female and 45% male, and evenly divided between the BA and BS options. As a result of the growth in our undergraduate program, the administration has increased the number of Teaching Assistantships available for us to support our graduate students. The follow-up on our recent undergraduate students shows a high degree of success in employment (geology or otherwise) and/or graduate school within five years of graduation.

The trend of increasing student numbers began in 1998 with the hiring of two new Assistant Professors and another Assistant Professor the following year. Two of these new hires replaced departing professors in the two largest introductory course sequences, and the growth in those courses has largely been driven by their popularity, as reflected in significantly improved student evaluations. In addition, undergraduate advising changed during that time to include an “Advisement Week” every semester in which the Director of Undergraduate Studies had a mandatory meeting for a minimum of 15 minutes with each major in the program. Prior to this formalized advising, the department operated on more of an open-door policy but this often resulted in only the diligent students (who didn’t really need guidance) showing up. The mandatory undergraduate advising has resulted in a significant decrease in course conflicts and delayed graduation, and an increase in planning effectiveness for the following semesters’ courses (due to accurate foreknowledge of the headcount). In addition, students did not react negatively to the mandatory nature of the advising—in fact the opposite took place in which students are often telling the undergraduate studies director that “we can tell this department cares about us” and “I left my other major because they didn’t seem to care, and I heard it is different in geology.”

In sum, our department—though relatively small—is held in high regard within the university administration because of (1) our significant per capita research productivity and (2) the upward trend in numbers of undergraduate and graduate students. As of spring 2005, our department is healthy and appears to be continuing to move in a direction favorable to both the faculty and the administration.