

Just Do It!

Teaching and Research in an Undergraduate Environment

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From the time I was 14 years old, I knew I wanted to be a paleontologist. When I dig a fossil out of the ground and realize that I am the first human to ever see it or realize that it has not seen the light of day for 400,000,000 years, the feeling is awesome. Collecting fossils, describing new species or genera, and reconstructing the climate and paleogeography of the earth millions of years ago is fun.

The joy of the hunt, the discovery and the synthesis is difficult to convey to non-scientists. I did not become a paleontologist by myself—I had many mentors and teachers. My parents were a major influence, but equally important has been my lifelong association with three university faculty members—Alan Horowitz and Gary Lane from Indiana University and Brad Macurda then from the University of Michigan. I went fossil collecting with Horowitz and Macurda while still in junior high school. I asked a million questions, and they answered them all. We were not in a classroom; we were sitting on outcrops of rock in sweltering heat and freezing cold, but they were teaching and I was learning. Alan took me to Indiana University when I was 16, and gave me a job as a student assistant in the Geology Department. It was my first job as a researcher, and it was great. These men taught me about fossils and paleontology, and showed me that learning is fun and exciting, not dull and boring. They also taught me about the love of teaching and the joy of working with students. In their minds and in mine, teaching and research have equal significance in making a university faculty member a scholar.

Today, when I step in front of a class, it is true that teaching is a requirement of my job that enables me to pursue my research into the history of life on earth. To me, however, teaching is much more than that. I have the opportunity not only to teach the students factual information (which they will probably forget in a few weeks or months), but to instill in them the joy of discovery that they will carry for a lifetime regardless of their field of study. As university faculty, we have the responsibility to prepare the next generation of students to be involved, productive members of society and to have the broad historical perspective that we associate with educated people, but we also have to teach them that lifelong learning is a joy rather than a burden. How do we do that?

In my introductory classes, I show numerous slides from my own work. I have had the good fortune to do fieldwork in Ireland, England, Scotland, Germany, China, Japan and throughout the United States, in addition to having visited museums all over Europe. The first person discussion es-

tablishes my credibility as a faculty member, but it also plants the seed that anyone can do this type of work with the proper training, dedication and hard work.

In our advanced classes in the geology department, we work very closely with our students by taking them in the field in virtually every class, requiring them to do outside projects as a part of the class, and by encouraging them to conduct independent research. This hands on approach to instruction has been an integral part of our teaching philosophy since the department was founded in 1967, and it has been very successful. With this approach, teaching and research converge toward a common theme—getting undergraduates involved in real world experiences. Grants and contracts become vehicles to encourage student participation, and they provide the necessary funding to carry on the work. When students collaborate with faculty, they are more likely to get caught up in the excitement of the subject matter rather than simply viewing it through the dulling filter of a textbook. This experience provides the students with educational opportunities they would not normally see until reaching graduate school.

This approach requires that the faculty remain professionally active. Conducting research, sending in grant proposals, and publishing are not optional. These activities become extensions of teaching, and become an essential part of the successful faculty experience. Juggling teaching responsibilities and research desires can be difficult when the activities remain separate. Even when the two are merged into a common theme, the time frustrations do not go away.

Geology alumni from UWG have successfully completed Masters and Ph.D. programs at universities throughout the United States, and are leaders today in companies and government organizations. Most still work in geologically related careers, but some have chosen other paths. Our practical hands on approach to undergraduate education has served our alumni well as they pursue the challenges associated with responsible positions in modern society. We remain committed to research oriented instruction at the undergraduate level, although it can be time consuming and occasionally frustrating, because it pays off in the end. This approach will not work in every department and in every field of study, but where appropriate, it is far superior to the standard lecture based model of education. •