

Maintaining Undergraduate Geoscience Education Excellence in a Climate of Emerging Research Institution

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Texas A&M University Corpus Christi (TAMUCC), a Hispanic-serving Institution, is currently seeking status of Emerging Research Institution. As part of this effort, more and more programs are developing graduate programs and newly hired tenure-track faculty are expected to develop strong research projects. As part of this effort, our Geology Program is planning on offering a Masters Program within the next two to three years. Currently our College offers graduate studies in Environmental Sciences (M.S.) and in Coastal and Marine System Sciences (Ph.D.). Geology faculty are currently advising nine Environmental Sciences M.S. students and five CMSS Ph.D. students.

The desire for a graduate program in the geosciences at our school has been expressed by students as well as the local industry in the past years. Offering a graduate program in “only” Environmental Science has led to a reputation of being “tree huggers” among many members of the local petroleum industry. A majority of our current graduate students have geology background (B.S.) and would have chosen a geology graduate degree if offered.

So how can and is our undergraduate program in geology supporting this move towards more research and advanced degrees?

Step 1 has been opening our students eyes in regards to the potential importance of a graduate education. Our Undergraduate Seminar, for which guest speakers with various geoscience backgrounds are invited, has made many of our students realize that to move ahead in their future careers to levels they are envisioning, a graduate degree may be essential. Internships have often led to the same realization among our students.

Step 2: Offering undergraduate research opportunities for our students. Geology faculty are currently supervising nine geology undergraduates working on research projects. Faculty receive no release time or other financial support for their efforts which keeps the number of students exposed to research lower than we would like. Programs such as McNair and S.U.R.E. (see TAMUCC geology program description) help to some degree by e.g. supporting student travel to conferences.

Step 3: Writing intensive courses. Being proficient in written and oral expression is essential to all students, not only geoscience majors. In our geology program we emphasis writing beginning in the first year of studies, e.g. within the learning community for geology and environmental sciences majors. Report writing, small research projects, poster presentations, etc. are standard in our upper level geology courses. Students are made aware of the importance of these skills by their faculty as well as internship mentors and are learning to embrace the opportunities given to them.

Step 4: The future – what we need to work on. With “only” five full-time geology faculty, of which four have substantial release time for other duties (administrative or research), serving over 80 undergraduate geology majors and over 500 non-science majors yearly, our program feels stretched to its limits. Growing the number of high impact practices as proposed by LEAP (Liberal Education and America’s Promise) is highly desired by our program. In January 2014, Texas became the tenth LEAP state partner. As stated in the LEAP Texas bylaws, “the mission of LEAP Texas is to provide a structure through which Texas public and private institutions of higher education can communicate, organize, and develop plans and policy recommendations that address their common interests of student success and the improvement of higher education in Texas.” (<http://www.aacu.org/leap/texas.cfm>). We would like to tap into resources that may become available within the LEAP initiative in Texas. Priorities include: a) growing undergraduate research on our campus. We would like to broaden the scope and also include students from our local community college in this endeavor. This will help attract new students from that institution as well. b) offer more travel opportunities for our students, including studies abroad. As any geologist will tell you, applying classroom knowledge in the field and simply being exposed to geology in the real world is what hooks students for life. A large number of our courses come with field trips for that reason. But, due to the size of Texas, we have been limited in our offerings that take students outside the state. In particular minorities tend to stay local. By offering more travel, we hope to help or students grow not only at an academic level but maybe more importantly also socially and intellectually.