Congress Weighs in on Geoscience Training

Margaret Anne Baker

You may have heard the news about the promising employment outlook for geoscience students that has been making the rounds the last few years. Several indicators suggest that now continues to be a good time to be a geoscience student looking to start a career.

Many industry and academic workers who have been the backbone of the community are beginning to retire, not only freeing up these positions to early-career geoscientists, but also creating shortages. Adding to the optimistic employment outlook is that the energy and mining sectors, which employ more than one-half of the geoscience community, are growing, and they are also the first to face the retirement wave. One thing is missing, however, in this sunny forecast: willing and able employees.

A majority of students see the job market as either neutral or bad/hopeless, according to the latest survey of recent Ph.D. students by the American Geological Institute (AGI, which publishes Geotimes) and the American Geophysical Union. This outlook does not match the reports by geoscience-related sectors of there being more positions than trained earth scientists to fill them.

In hopes of gaining an understanding about this mismatch of perspectives, AGI conducted a recent survey to document the attitudes of students about different career paths. The survey found that a majority of students would rather work in public-sector jobs, such as those in academia or governmental agencies, than private-sector jobs in the petroleum, mining and environmental consulting sectors. Something must occur to help bridge this gap between potential employees’ interests and training, and actual job openings.

One approach is to provide incentives to students and academic departments to enter the geoscience fields needed by private companies, and to encourage cooperation between academia and companies in developing training programs. Legislation passed by the U.S. House of Representatives at the end of June would provide federal funds from outer continental shelf revenues to support these types of activities.

The Deep Ocean Energy Resources Act (H.R. 4761) is primarily a bill to expand domestic offshore oil and natural gas development, but it also contains a provision called the Energy and Mineral Schools Reinvestment Act. It would establish a new Office of Petroleum and Mining Schools under the assistant secretary for Land and Minerals Management within the Department of the Interior that would administer several programs within the legislation aimed to encourage growth in the energy and mineral resources workforce.

**Something must occur to help bridge this gap between potential employees’ interests and training, and actual job openings.**

Under the bill, departments that “maximize the opportunity for training” geoscientists as petroleum, mining, and mineral engineers, as well as geologists and geophysicists to enter the energy and mineral resources fields would be eligible for up to 10 years of federal support. The legislation does not specify the types of activities that programs must undertake to meet the goals of the act.

Instead, the bill would establish a special committee to advise the assistant secretary for Land and Minerals Management. This committee would be made up of 16 members, representing everyone from historic and existing petroleum and mining schools and state geologists, to working miners and petroleum geologists. This body would be responsible for setting eligibility criteria, identifying important lines of research, and advising the director of the Office of Petroleum and Mining Schools on a range of issues related to how to implement the goals of the bill.

Eligibility criteria for the engineering degree programs are based on the specialized standards established by the member societies of the accreditation company ABET, Inc. Because no equivalent specialized standards exist for the nonengineering degree programs, the legislation provides that the secretary and the advising committee on education determine the eligibility of these programs for federal funds under the act. Any university receiving funds for nonengineering degrees must at a minimum show that it has “a substantial program of undergraduate and graduate geoscience instruction and research,” a significant connection with industry to encourage cooperation in training, and an agreement to maintain the program for the full time that it is receiving federal funds.

If this act is signed into law, then the assistant secretary for Land and Minerals Management and the new advisory committee would be charged with establishing more specific criteria for the nonengineering degree programs. In the meantime, as Congress continues to consider this legislation, it may be the perfect opportunity for the larger geoscience community to look at how to formulate training programs for the energy and mining sector that will better attract students than the current system.

Fellowships and scholarships for students who study these subjects might increase the numbers some, but considering that only one-third of the surveyed students would consider careers in the energy and mining sectors, this approach alone will not bring in sufficient numbers of new employees. Innovative new approaches are necessary to entice and build the workforce to fill the close to 50,000 geoscience-related jobs in the natural resources sectors that are expected to open up over the next decade.

Baker is with the Geoscience Workforce Department at the American Geological Institute in Alexandria, Va. E-mail: mab@agiweb.org.