

Testimony Before the Committee on Natural Resources  
Subcommittee on Energy and Mineral Resources  
Oversight Hearing on “American Energy Jobs: Opportunities for Education”

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Duane Hrncir

Provost and Vice President for Academic Affairs

South Dakota School of Mines and Technology

Rapid City, South Dakota

The South Dakota School of Mines and Technology has been educating leaders in engineering and science for 129 years. Established in the Dakota Territory to support the mining industry, the School of Mines has grown to provide baccalaureate, masters, and Ph.D. degrees focused exclusively on engineering and science. Currently approximately 2,650 students are studying on the Rapid City campus, split equally between South Dakota residents and residents of 45 states and 37 countries. Enrollment is growing at about 5% per year, spurred largely by our excellent reputation for providing strong technical skills with leadership opportunities, a 98% placement rate for our graduates, and being one of the top ten schools in the country for return on investment for a college education.

Given our history it is no surprise that the School of Mines offers strong programs to support the country’s mineral and extractive industries. We are one of only four universities in the nation to offer all three core disciplines for mineral industries: mining engineering, metallurgical engineering, and economic geology. Through their programs of study, our students gain an

understanding of how these disciplines are entwined from the discovery of new mineral resources to the extraction of the resources, and finally the processing to obtain the strategic materials needed to fuel the nation's economy. These disciplines collaborate with other engineering programs on campus such as Civil and Environmental Engineering to provide our graduates an understanding of sustainable practices and natural resource protection.

The exploration and production of conventional energy resources (coal, oil, and natural gas) have been an important part of the School of Mines' educational history and remains a vital component of the curricula today. Fourteen of the sixteen baccalaureate programs provide courses that directly relate to the needs of the energy industry and our graduates are hired by numerous companies who actively recruit on our campus each year. The average starting salary for our baccalaureate graduates is over \$62,000, with the vast majority hired into American industry in locations around the country and become important contributors to their local economies.

The energy industry has changed significantly over the past 30 years. Advances in exploration and production are opening new areas of the country as important sources to meet the country's energy needs. The School of Mines in Rapid City is centrally located among three of the most important energy producing areas on the continent: the Powder River Basin in Wyoming, the Williston basin in North Dakota, and the Denver Basin in Colorado. Coupled with our long history in energy resources, our geographic location is attracting a growing number of industries to partner with the university to ensure that our graduates meet the current and future needs of the energy resource workforce.

One example of this collaboration is the recent development of a minor in petroleum systems. This minor was created to be interdisciplinary in order to provide students from many degree programs the opportunity to gain skills needed by the petroleum industry. The minor will begin enrolling students this fall and is expected to be a popular choice for students wanting to pursue careers in energy resources. My first job after graduate school was with Gulf Oil Company. Although I obtained an excellent education, it would have left me ill-equipped to function in today's industry. There have been tremendous strides in the identification and production of new energy resources. This progress was brought about through research.

Higher education's responsibility is to not only pass on existing knowledge, but to also create new knowledge through research. Engineering and scientific research are vital components of the School of Mines mission and over 90% of our undergraduates and well as nearly 100% of our graduate students have research as a key component in their programs of study. We have active research collaborations with numerous Federal agencies as well as private industry. The hands-on training our students get through research enables them to quickly become productive employees for the companies that hire them. With regard to the energy industry, our students are conducting research on reservoir modeling, advanced production techniques, sustainable engineering, advanced material design, and microbial transformations of energy feedstocks, to name a few. These students will lead the next generation of engineers and scientists who will continue to develop the country's energy needs in a sustainable way that protects the natural resources and quality of life valued by all of our citizens.

Through research and teaching, universities like the South Dakota School of Mines and Technology are advancing knowledge and preparing leaders in science and engineering for American industry, including the booming energy industry that surrounds the upper mid-west. The nation needs more well-prepared engineers and scientists. The School of Mines is helping to meet that need and to the benefit of our graduates and the communities in which they live.