

The Institute for Mineral Resources (IMR) A Global Center for Mineral Resource Development



San Xavier Mining Institute

Mining. The industry sometimes associated with picks and shovels has gone high-tech with an eye on sustainability.

Led by a new Science Foundation Arizona (SFAz) collaboration that unites the research muscle of the University of Arizona's Department of Mining and Geological Engineering (UA) and 15 industry partners, the new **Institute for Mineral Resources (IMR)** is poised to become a global leader in all aspects of mineral resource development. IMR is focused on internationally competitive R&D innovations in mining technologies related to exploration, production, process efficiency, safety, and health and builds upon the important work that has already been done by mining companies and academia.

While modern mining has become a technology-intensive industry, continual innovation is key. This initiative expands upon opportunities to explore, maximize, and improve new 21st century scientific methods – from minimizing fresh water usage and improving the energy efficiency of materials production to underground robotic mining that leaves a smaller environmental footprint. IMR and its related test site, located south of Tucson at the San Xavier Mining Laboratory, will become a globally recognized “go to” research hub for sustainable resource development.

And, mining remains significant in state's economic portfolio. Arizona has one of the most significant endowments of copper and related commodities in the world. Total Arizona mineral production in 2007 had a value of \$7.38 billion, and production in rural counties is a major source of economic development. Nearly all of modern devices and conveniences such as electricity, televisions, cell phones, and airplanes would not be possible without mined minerals such as copper. Copper produced in Arizona is vital for infrastructure development and creating alternative and renewable energy technologies - from hybrid cars to solar photovoltaics.

Workers trained in new engineering methods and technologies are an essential part of the Arizona skilled labor force needed as demand for minerals continues to grow. Part of the education component that IMR addresses is a “Two Plus Two” mining engineering education pathway that partners Arizona community colleges and the state's four-year universities. Through “Two Plus Two”, IMR will work with the community colleges to attract prospective students to enter a two-year technology based preparatory curriculum, and then encourages them to complete a degree in mining engineering at an Arizona state university – two years at each institution. These students are the brain pipeline needed not only for mining, but for the technology-based world in which we live and compete.

With the SFAz grant of \$ 8.7 million, the additional leverage of \$8.8 million from 15 industry partners, and the participation of all three universities, the investment will help Arizona retain and expand its dominance as the nation's number one producer of non-fuel minerals creating a significant, sustainable competitive advantage for our state. Clearly, SFAz and its partners are “digging in” with gusto.

Rendering of underground mining technology

