

Making Mining Safe and Sustainable:

Mary Poulton heads a new minerals institute with an interdisciplinary focus on safety and sustainability.

The Lowell Institute for Mineral Resources is the largest interdisciplinary mineral resources research center in the U.S. and one of the largest in the world. It is directed by mining and geological engineering department head and University Distinguished Professor Mary Poulton, and funded by \$17.2 million from Science Foundation Arizona and 21 industry partners, \$1.6 million from NIOSH, and an endowment from J. David and Edith Lowell.

The IMR has engaged nearly 200 faculty, staff, and students on 41 Research projects in 16 departments across seven colleges at UA and works with faculty members at four other universities in the U.S. The Lowell Professional Programs in Mineral Resources have had 600 participants from 51 companies and 26 countries.

Work at IMR includes finding ways to use nonpotable water for mineral production; softening rocks to lower energy demand in drilling and crushing; creating software that revolutionizes data management in mining operations; educating miners and supervisors on safety training; building a database of mineralogical data for all known mineral species; examining the nano- and micro-scale structure of minerals to improve extraction methods; studying the health effects on underground miners of biodiesel emissions; investigating airborne dust on the Navajo Nation creating gaming simulations for mine safety training; developing fiber optic real-time sensing technologies for rock stress and air quality parameters in underground mines; and building data warehouse on sustainability metrics and social impacts of mining.



Professor Mary Poulton