

Bioremediation of Toxic Pollutants:

Jim Field uses microbes to clean the environment of hazardous pollutants.

Professor Jim A. Field is chair of the chemical and environmental Engineering department, where his research program focuses on Bioremediation, which is the application of bacteria and fungi to catalyze The transformation of toxic pollutants into environmentally safe end Products. Field's current research portfolio focuses on issues relevant to The Southwest, such as acid mine drainage, and uranium and arsenic Pollution. He is developing passive (low management, low cost) treatment Systems for treating acid mine drainage using sulfate-reducing bacteria That generate sulfides to precipitate heavy metals with the potential for Reuse. His team is researching the treatment of uranium in groundwater Based on the biological reduction of soluble hexavalent uranium to Insoluble minerals.

Field's group has also discovered how to harness bacteria to oxidize toxic Arsenic in situ in groundwater to immobile forms without relying on Oxygen, which is difficult to supply to the subsurface. New areas of funded Research include toxicity and environmental fate of engineered Nanomaterials, and the Department of Defense announced recently that it Is planning to award \$1 million to Field's team to explore biodegradation of New explosive materials.



Professor Jim Field is the chair of the chemical and environmental engineering department and co-director of the Dean Carter Binational Center for Environmental Health Sciences

