

# Applied Petrology Laboratory



Dr. James C. Hower  
Principal Research Scientist

# What does this group do?

- Sampling at coal mines
  - Mine samples from Kentucky and elsewhere
  - Sampling at coal preparation plants
  - Studies of emissions from coal fires



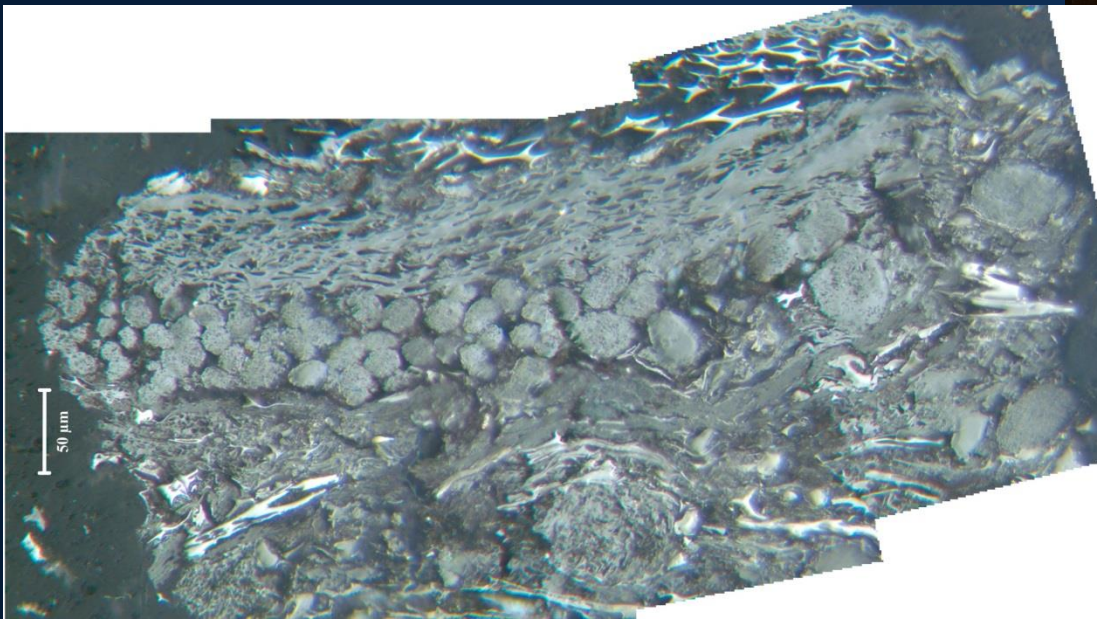
# What does this group do?

- Sampling at power plants
  - Sample Kentucky power plants every five years
  - More frequent sampling for special projects



# What does this group do?

- Petrographic examination of coal and fly ash
- Coordination of geologic and/or power plant information with petrology and chemistry in thorough studies of coal or combustion products



# On-going & new projects

- Can Rare earth elements be economically recovered from coal and coal combustion products?
  - Current funding from NSF and DOD
  - New funding from DOE
  - Projects with UK Mining Engineering, PSI, Duke University Civil & Environmental Engineering



# Additional info

- **Where does the Applied Petrology lab get funding from?**

*National Science Foundation; U.S. Department of Energy; Department of Defense; U.S. Geological Survey; U.S. Environmental Protection Agency*

- **Where does the Applied Petrology lab publish?**

*Fuel ; International Journal of Coal Geology; Energy & Fuels; Environmental Science & Technology; Coal Combustion & Gasification Products*

- **Where does the Applied Petrology lab present its results?**

*Geological Society of America; Pittsburgh Coal Conference; The Society for Organic Petrology; World of Coal Ash*

- **Where do students that work in the Applied Petrology lab go afterwards?**

*Industry (e.g. Chesapeake Gas; Pioneer; ConocoPhillips)  
Government (e.g. Kentucky Natural Resources; Kentucky Geological Survey; USGS)  
Graduate School (e.g. Ohio State; UNLV; Kentucky; New Mexico Tech)  
Academia (e.g. Queensland; Morehead)*