

TITLE: Graduate Student and/or Faculty – Geological and Environmental Sciences
DEPARTMENT: Department of Energy
AGENCY: National Energy Technology Laboratory
LEVEL: Graduate Student and/or Faculty
POSITION INFORMATION: Temporary, ~12 months Part-Time (up to 20 hours per week)
DUTY LOCATION: Morgantown, WV or Pittsburgh, PA
WHO MAY BE CONSIDERED: United States Citizens & Foreign Nationals with appropriate approval

SUMMARY:

Through the Oak Ridge Institute for Science and Education (ORISE) this posting seeks motivated graduate students currently enrolled in a degree-seeking program, and/or faculty researchers who currently hold a full-time position at a degree-granting research institution, interested in researching as part of geologic and environmental sciences focus area research team at NETL. NETL is a multi-disciplinary, scientific and technical-oriented national laboratory. NETL's Office of Research and Development (ORD) conducts research to evaluate environmental impacts and risk assessments associated with domestic energy resource development.

The National Methane Hydrate Research and Development (R&D) Program has worked to accelerate the determination and realization of gas hydrate's resource potential and to better understand the role of gas hydrate in the environment. This Natural Gas Hydrates Research project was developed with a diverse set of research activities, performed by the U.S. Department of Energy (DOE), National Energy Technology Laboratory (NETL), Office of Research and Development (ORD), to fill multiple needs within the National Gas Hydrate R&D program. The objective of the research project is to obtain pertinent, high-quality information on gas hydrates that will benefit the development of models and methods for predicting the behavior of gas hydrates in their natural environment under natural conditions and production scenarios. NETL-ORD supports major gas hydrate production field tests by providing numerical predictions on fluid migration, gas production, and potential reactions occurring during gas production activities, as well as by providing fundamental understanding and knowledge on hydrate behavior derived from experimental investigations on thermal, hydrological, geomechanical, and reactive responses of hydrate. There is a need for continuous research consisting of numerical modeling efforts including simulations of long-term production tests and international code comparison studies for Iġnik Sikumi test, and laboratory experimental tests on geomechanical stress-strain measurements, water conductivity and relative permeability of fluid through hydrate-bearing sediments, high resolution visualizations of hydrate distributions and fluid migration in porous media, and developing pertinent models describing pore scale flow process and geomechanical responses.

Graduate student applicants for this position must demonstrate knowledge of, and have experience with, numerical modeling used for reservoir scale simulations for fluid migration within hydrate-hosting sediments, demonstrate an ability to perform laboratory tests, and process

data associated with experimental studies with 2-D or 3-D flow systems. Suitable degree programs include chemistry, geoscience, or engineering-based programs.

Faculty applicants for this position must demonstrate knowledge of, and have experience with, principles associated with gas hydrate, flow dynamics, thermodynamics, or geomechanical system analysis. Access to equipment, such as x-ray CT scanners, geomechanical test units, and computing facility would complement existing capabilities at the NETL-Pittsburgh/Morgantown facility.

For more information about research ongoing in the Methane Hydrate Portfolio at NETL please visit <http://www.netl.doe.gov/research/oil-and-gas/methane-hydrates>

KEY REQUIREMENTS:

- Applicants must be U.S. Citizens or approved Foreign Nationals
- Suitable for this position, as determined by background investigation.
- Graduate student applicants must be currently enrolled in a graduate program at a degree-granting institution, with an ability to travel to the NETL-Morgantown/Pittsburgh facility to participate in on-site research
- Faculty applicants must have a current position at a degree-granting institution and hold a PhD, with an ability to travel to the NETL-Morgantown/Pittsburgh facility to participate in on-site research

HOW TO APPLY:

Applicants should apply through the Oak Ridge Institute for Science and Education (ORISE) program. The ORISE Program provides opportunities for undergraduate students, recent graduates, graduate students, postdoctoral researchers, and faculty researchers. NETL utilizes the ORISE program to support research and work within NETL's Office of Research & Development.

- Interested applicants should complete the online application at <https://netl.orau.gov/>
- In the online application list **Yongkoo Seol** as your requested mentor. This will associate your application with this job posting.
- If you have additional questions please contact Nancy Andres, Nancy.Andres@NETL.DOE.GOV, who is the NETL ORISE program contact.