

**Opportunity Title:** Methane Hydrate Scientist and Basin Modeler

**Opportunity Reference Code:** NETL-2018-07-5-Seol

**Organization** National Energy Technology Laboratory (NETL)

**Reference Code** NETL-2018-07-5-Seol

**Application Deadline** 4/30/2019 11:59:00 PM Eastern Time Zone

**Description** TITLE: Methane Hydrate Scientist and Basin Modeler

DEPARTMENT: U.S. Department of Energy/National Energy Technology Laboratory (NETL)

NETL CONTACT: Yongkoo Seol

DUTY LOCATION: Morgantown, WV

ACADEMIC LEVEL: PhD, MS

POSITION INFORMATION: 1-year appointment; full time (40 hours per week) with the possibility of extension

CLOSING DATE: 4/30/2019

WHO MAY BE CONSIDERED: United States Citizens, LPRs, & Foreign Nationals with appropriate approval which includes F-1 OPT with EAD (STEM extension not valid), J-1 Exchange Visitor, and LPR with EAD

#### SUMMARY:

Through the Oak Ridge Institute for Science and Education (ORISE) this posting seeks motivated post-graduates (MS and PhD) interested in researching as part of the GES directorate at the National Energy Technology Laboratory (NETL). NETL is a multi-disciplinary, scientific and technical-oriented national laboratory. NETL's Research and Innovation Center (RIC) conducts research to evaluate environmental impacts and risk assessments associated with domestic energy resource development.

RIC performs research within the National Gas Hydrate Research and Development Program 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. RIC supports major gas hydrate production field tests by providing numerical predictions on fluid migration, gas productions, and potential reactions occurring during gas production activities, as well as by providing fundamental understanding and knowledge of hydrate behavior derived from experimental investigations on thermal, hydrological, geomechanical, and reactive responses of hydrate. RIC research includes, but is not limited to, numerical modeling efforts, including simulations of long-term production tests, laboratory experimental test 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 pressure core analysis tools for characterizing geomechanical responses of field-retrieved hydrate-bearing pressure cores, and market analysis for gas production from hydrate



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reservoir. RIC research has been further expanded to include basin modeling for hydrate reservoir utilizing basin and petroleum system modeling tools for the area of Gulf of Mexico and Alaska North Slope.

Potential candidates will be contacted when a specific research project on gas hydrates is identified, applications will be received and reviewed for at least one year. Applicants will help to support numerical reservoir simulations for gas productions, laboratory characterization of hydrate bearing sediments, and basin petroleum system modeling for selected hydrate reservoir, depending on applicant's qualification and background. Applicants with basin modeling experience are strongly encouraged to apply. Successful applicants for this position would have a strong background in these elements (but necessarily all): high-pressure/low-temperature laboratory experiments, geomechanical characterization and analysis, hydroglogic or fluid transport models, statistical data analysis, programming (C++, Fortran, Matlab, Python), and basin model development (Petrel, PetroMod).










For more information about research ongoing in the Hydrate portfolio at NETL, please visit: <https://edx.netl.doe.gov/hydrate/>.

**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 to apply classroom knowledge in a real-world setting to learn about NETL's core mission areas.



- Interested applicants should complete the online application at <http://www.ornl.gov/netl/>. For questions or issues, please email both Terry.Howard@ornl.org and Kerri.Fomby@ornl.org.
- In the online application, **list Yongkoo Seol as your requested mentor.** This will associate your application with this research opportunity. Please send a CV to Yongkoo.seol@netl.doe.gov.
- If you have additional questions, please contact Patricia Adkins-Coliane, Patricia.adkins-coliane@netl.doe.gov, who is the NETL Graduate Education Program Manager.

**Eligibility Requirements**

- **Degree:** Master's Degree or Doctoral Degree.
- **Discipline(s):**
  - **Chemistry and Materials Sciences** ([12](#) )
  - **Communications and Graphics Design** ([2](#) )
  - **Computer, Information, and Data Sciences** ([16](#) )
  - **Earth and Geosciences** ([21](#) )
  - **Engineering** ([27](#) )
  - **Environmental and Marine Sciences** ([14](#) )
  - **Life Health and Medical Sciences** ([45](#) )
  - **Mathematics and Statistics** ([10](#) )
  - **Other Non-Science & Engineering** ([2](#) )

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- **Physics** ([16](#) )
- **Science & Engineering-related** ([1](#) )
- **Social and Behavioral Sciences** ([27](#) )