TITLE:	Professional Internship Program – Cement Barriers: Assessment of Foamed Cement
DEPARTMENT:	Department of Energy
AGENCY:	National Energy Technology Laboratory
LEVEL:	Post-BS
POSITION INFORMATION:	Temporary, 12 months Full-Time, (40 hours per week)
DUTY LOCATION:	Pittsburgh, PA
WHO MAY BE CONSIDERED:	United States Citizens & Foreign Nationals with appropriate approval
POSITION CLOSING DATE:	Any application received by 7/21/2014 will be considered

SUMMARY:
Through the Oak Ridge Institute for Science and Education (ORISE) this posting seeks motivated individual interested in being part of a collaborative, interdisciplinary research team in the geologic and environmental sciences focus area at the Department of Energy's National Energy Technology Laboratory (NETL). NETL's Office of Research and Development (ORD) conducts research to advance the clean production and efficient utilization of domestic energy resources.

The primary purpose of cement in a wellbore is to provide zonal isolation and casing support. Industry standards require the measurement of mechanical parameters to ensure the integrity of the primary cement job. Mechanical properties, such as permeability, porosity, compressive strength, Young's modulus and Poisson's ratio are therefore of interest for a variety of cement systems.

The applicant will measure and interpret the acoustic properties (P/S1/S2 velocity) and associated petrophysical models of wellbore cement systems over a range of relevant effective pressures and evaluate the change in properties from a seismic wave propagation perspective. This includes conducting stepwise permeability and porosity measurements, and ultrasonic velocity measurements using a NER AutoLab 1500 in the NETL Core Flow Lab. Core-scale velocity measurements will be used to quantify the physical properties of various foamed cement systems at different wellbore conditions including calculation and interpretation of the dynamic Lamé parameters. Applicants need to have extensive and direct experience using NER AutoLab 1500 techniques. A prior knowledge and experience working in a laboratory environment formulating wellbore cements for experimental purposes (especially foamed cement systems) is required.

Activities associated with this position will include:

- Make measurements of the permeability and porosity of various cement systems, including foamed cements.
- Make measurements of ultrasonic seismic wave properties using the NETL GFL (Geomechanics and Flow Laboratory) facility on foamed cement cores under different wellbore conditions
- Evaluate the change in properties of foamed cement systems from an ultrasonic seismic wave propagation perspective.

- Enter data into GFL (Geomechanics and Flow Laboratory) measurement database and analyze with respect to petrophysical models
- Collaboration Team Meetings will be held with all participants to coordinate laboratory and field aspects of this activity

KEY REQUIREMENTS:

- Applicants must be U.S. Citizens or approved Foreign Nationals
- Suitable for this position, as determined by background investigation.

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 within NETL's Office of Research & Development.

- Interested applicants should complete the online application at https://netl.orau.gov/
- In the online application **list Barbara Kutchko 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.