**Opportunity Title:** AI / Advanced Data Analytics for Energy Infrastructure Sensing
**Opportunity Reference Code:** NETL-2019-PGRP-Ohodnicki-1

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

**Reference Code** NETL-2019-PGRP-Ohodnicki-1

**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 Research and Innovation Center's (R&IC) core mission areas.

In the online application **list Paul Ohodnicki as your requested mentor.** This will associate your application with this job posting. Please send a CV to paul.ohodnicki@netl.doe.gov and Jennifer Bauer: jennifer.bauer@netl.doe.gov .

A complete application consists of:

- An application
- Transcripts – Click here for detailed information about acceptable transcripts
- A current resume, including academic history, employment history, relevant experiences
- Two educational or professional references

All documents must be in English or include an official English translation.

If you have questions, send an email to NETLadmin@orau.org. Please include the reference code for this opportunity in your email.



**Application Deadline** 6/1/2019 11:59:00 PM Eastern Time Zone

**Description** Through the Oak Ridge Institute for Science and Education (ORISE) this posting seeks a post-doctoral or post-masters researcher to apply for an appointment to participate in the research and development of advanced data analytics methods applied to energy infrastructure sensing applications, with an emphasis on natural gas infrastructure at the National Energy Technology Laboratory (NETL). NETL is a multi-disciplinary, scientific and technical-oriented national laboratory and the U.S. Department of Energy's primary lab supporting fossil fuel-based energy research.

The scientist/researcher will collaborate on an interdisciplinary team spanning industry, academic, and national laboratory partners that seeks to develop and demonstrate advanced sensors and enabling technologies for energy infrastructure monitoring applications. An emphasis will be placed on artificial intelligence and related methods for predictive monitoring of incipient failures within the natural gas infrastructure by leveraging distributed optical fiber sensing. The candidate will also have opportunities to engage in data analytics for wireless sensor technology platforms and other energy infrastructure, including subsurface monitoring.

**Qualifications** An ideal candidate would be capable of researching within the team to

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identify and apply advanced data analytics methods to characterize and classify spatial, temporal, and frequency dependent features of optical fiber based distributed sensing data as it relates to indicators of incipient failures and leaks within the natural gas infrastructure. The candidate would also be familiar with multivariate analysis techniques for extracting information related to multiple parameters simultaneously from advanced sensing platforms.

A successful candidate will have:

1. An advanced degree in Statistical Methods, Mathematics, Data Science, Computer Science, Electrical Engineering, Applied Physics, or a related field (MS / PhD preferred).
2. Experience with development and application of advanced data analytics methods (e.g. artificial intelligence, principle component analysis, neural networks, machine learning, big data analytics) using custom developed algorithms or commercially available software packages.
3. An interest in intelligent techniques for energy infrastructure monitoring and sensing.
4. Experience with high performance computing environments, tools, and applications.

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

**Affirmation** I certify that I:

- Have an earned or will receive a doctoral or master's degree by appointment start date.

OR

- Have received the degree no more than three years before the date of application (postmasters' applicants).

OR

- Have received the degree no more than five years before the date of application (postdoctoral applicants).

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