

**Opportunity Title:** General Engineer - PIP  
**Opportunity Reference Code:** NETL-2020-PIP-Straub-1

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

**Reference Code** NETL-2020-PIP-Straub-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 **Douglas Straub as your requested mentor**. This will associate your application with this posting. Please send a CV to [Douglas.Straub@netl.doe.gov](mailto:Douglas.Straub@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

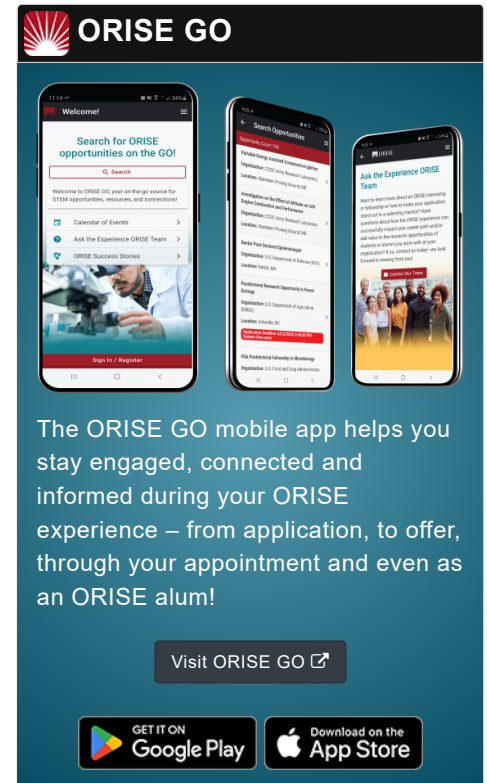
All documents must be in English or include an official English translation.

If you have questions, send an email to [NETLinfo@orau.org](mailto:NETLinfo@orau.org). Please include the reference code for this opportunity in your email.

**Application Deadline** 8/31/2020 11:59:00 PM Eastern Time Zone


**Description** Through the Oak Ridge Institute for Science and Education (ORISE) this posting seeks a researcher to participate on a project that will focus on thermal management of hot gas path components for gas turbines. Specifically the project will investigate the effects of film cooling on turbine tip flows. The effects on heat transfer and aerodynamics will be studied, while attempting to characterize how vortices are formed at turbine tips. Gaining an understanding of how vortices are formed will provide a direct assessment of the cooling effectiveness, and allow for more informed usage of film cooling to guide the leakage vortex, tip secondary flows.

The learning objective is for the participant to generally understand turbine thermal management and specifically focus on cooling of turbine blade tips. While turbine blade tip cooling is studied, this area is not studied to the degree that cooling of

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other regions of the hot gas path are studied. This will enable the participant to develop an unique expertise and add to the intellectual knowledge in this topic area.

**Qualifications** The ideal candidate will have:

BS degree in mechanical engineering with focus on thermal fluid sciences specifically related to gas turbine performance.

The candidate must have analytical as well as experimental skill at an academic level as there is a strong possibility that this project will require some experimentation.

**Eligibility  
Requirements**

- **Citizenship:** U.S. Citizen Only
- **Degree:** Any 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:

- I have received an undergraduate degree no more than two years before the date of the internship appointment.
- OR
- I am currently pursuing a master's degree.
- OR
- I have not received a master's degree but currently pursuing a doctoral degree.