

Dwight D. Eisenhower Postdoctoral Fellowship

Savannah River National Laboratory's Distinguished Postdoctoral Fellowship



Savannah River National Laboratory (SRNL) is pleased to offer the distinguished Dwight D. Eisenhower Postdoctoral Fellowship to work toward solving complex energy and national defense challenges.

SRNL is looking for the most qualified, forward-looking individuals in the field to apply for the Dwight D. Eisenhower Fellowship.

This fellowship is designed for pioneering researchers focused on expanding the boundaries of science and engineering.

Exceptional candidates demonstrating scientific productivity through multiple peer-reviewed publications and advanced research approaches to complex problems will be considered for this position.

“The Eisenhower postdoc position has allowed me to take full ownership over my research at SRNL. This has allowed me to interface with more people throughout the lab and seek out additional engaging research opportunities.”

- Colleen Hilla; Dwight D. Eisenhower Postdoctoral Fellow

“I strongly believe that the foundation of the Eisenhower program has set me up to develop an identity in my field of research and would not be possible with a traditional postdoc experience.”

- Corey Martin; Dwight D. Eisenhower Postdoctoral Fellow

ELIGIBILITY REQUIREMENTS

Position is open to candidates with Ph.D. degrees (obtained within the last 36 months) in fundamental sciences or engineering.

Ph.D. students with expected completion dates within the next 12 months will be considered with documented proof of status from the educational institution.

Each Eisenhower Fellowship is an initial one-year appointment, with an option to renew up to three years.

Publication of research at SRNL is expected.

REQUIRED AT TIME OF SUBMISSION

1) Detailed resume/CV that includes all relevant achievements, including publications.

2) A research proposal white paper (up to two pages) that demonstrates an ability to align with SRNL's research focus areas (see page 2).

OPTIONAL

Up to three letters of recommendation. Testimonials should address the applicant's direct experience in furthering the state of research and technology.

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Research Focus Areas

The research proposal white paper must address at least one of the following research areas. For more information about any of the research focus areas, contact eisenhower@srnl.doe.gov.

- **Advanced Manufacturing Process Optimization Modelling and Simulation**

Focus on computing capabilities, credible simulation tools, and physical modeling to enable science-informed decision making on design, manufacturing process, and material use options. Tools are needed to support agile manufacturing capabilities (e.g. rapid-turnaround simulations, data-driven/machine-learned models) to enable optimization of manufacturing processes to reduce costs, increase yields, and minimize risks for future defect production.

- **Artificial Intelligence/Machine Learning Process Integration for Transformational Chemicals Production**

Evaluate process integration of novel technologies covering industrial electrification, (bio)chemical process intensification, and biofeed stocks-to-fuels/chemicals strategies.

- **Applied Artificial Intelligence**

Focus is on applying AI technologies to solving national security missions. The research is in different classes of algorithms to different classes of problems, and the physical instantiation of those problems in computationally and/or power constrained equipment. Areas of interest are in operational technology cyber threat/anomaly detection, autonomy, edge-intelligence, approximate computing, and neuromorphic systems.

- **Cementitious Materials**

Focus on chemical immobilization technologies related to cementitious materials for long-term viability as waste forms for encapsulation of a variety of hazardous and radioactive wastes.

- **Electric Grid Resilience**

Focus on cyber resilience, resilience to physical upsets, grid modeling, and new technologies enabling resilience, such as solid-state transformers. Opportunities in this space include scientific modeling, operational technology cyber threat hunting and mitigations for existing systems, and physical or cyber design and implementation of grid connected equipment.

- **Hydrogen isotope separations**

Focus on discovery of platinum group metal free or low content PGM materials for separations of hydrogen isotopes. The work might include computational modeling as well as design, synthesis, and testing of novel materials.

- **Nuclear Fuel/Nuclear Materials Processing and Disposition Technologies**

Focus on aging management, chemical processing, and recovery of valuable elements and isotopes from nuclear materials and irradiated (spent) nuclear fuels from a variety of sources, reactors, and fuel types. This includes methods to safely convert these materials into safe forms for disposal.

- **Tooling for Nuclear Materials**

Focus on improving the lifetime of components used in nuclear material applications and harsh environments through material development, material processing, or component design.

- **Ultra-Sensitive Radiation Detector Development**

Focus on next generation ultra-sensitive radiation detection with gamma detector materials, unique gamma counters, liquid scintillation counters, ultra-pure scintillators, and/or background subtraction methods at the Facility for Underground Science and Engineering (FUSE) at SRNL.