

Opportunity Title: EPA Nanomaterials in Surface Waters Fellowship

Opportunity Reference Code: EPA-ORD-CEMM-ACESD-2020-01

Organization U.S. Environmental Protection Agency (EPA)

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A complete application consists of:

- An application
- Transcript(s) – For this opportunity, an unofficial transcript or copy of the student academic records printed by the applicant or by academic advisors from internal institution systems may be submitted. All transcripts must be in English or include an official English translation. Click [here](#) for detailed information about acceptable transcripts.
- A current resume/CV, including academic history, employment history, relevant experiences, and publication list
- Two educational or professional recommendations. Click [here](#) for detailed information about recommendations.

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

Application Deadline 8/31/2020 3:00:00 PM Eastern Time Zone

Description ***Applications may be reviewed on a rolling-basis and this posting could close before the deadline.** Click [here](#) for information about the selection process.

EPA Office/Lab and Location: A research opportunity is available at the Environmental Protection Agency (EPA), Office of Research and Development (ORD), Center for Environmental Measurement and Modeling (CEMM), Atlantic Coastal Environmental Sciences Division (ACESD) located in Narragansett, Rhode Island.

Research Project: This research is focused on the fate, transport, and transformation of nanomaterials and their products in surface waters and sediments to inform the potential adverse effects of nanomaterials to humans and aquatic species. This research project will build upon previous work that developed the first publicly available water quality modeling framework (WASP8, Advanced Toxicant Module) to simulate nanomaterials in surface waters and sediments. This research project will focus on expanding the types of nanomaterials modeled from carbon-based nanomaterials to metals (e.g., NanoSilver, NanoCopper), daughter products of nanomaterials, varying speciation and weathering and release of nanomaterials and solute chemicals.

Under the guidance of a mentor, the research participant may be involved with the following activities:

- Simulating the concentrations of different types of nanomaterials in different aquatic ecosystems
- Becoming part of an interdisciplinary nanomaterial/emerging contaminants research team and collaborate on different nanomaterials and how they behave in the environment
- Developing additional process routines within the modeling framework



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Learning Objectives: The research participant will learn how to use the Water Quality Analysis Simulation Program (WASP8) to develop dynamic mechanistic fate and transport models for different types of aquatic ecosystems. The research participant will learn about different nanomaterials and how they behave in the environment. The research participant may present oral and/or poster presentations at a scientific conference/workshop. The research participant may contribute to one or more manuscripts, to be submitted to peer-reviewed journals.

Mentor(s): The mentor for this opportunity is Chris Knightes (knightes.chris@epa.gov). If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: August/September 2020. All start dates are flexible and vary depending on numerous factors. Click [here](#) for detailed information about start dates.

Appointment Length: The appointment will initially be for one year and may be renewed up to three additional years upon EPA recommendation and subject to availability of funding.

Level of Participation: The appointment is full-time.

Participant Stipend: The participant will receive a monthly stipend commensurate with educational level and experience. Click [here](#) for detailed information about full-time stipends.

EPA Security Clearance: Completion of a successful background investigation by the Office of Personnel Management (OPM) is required for an applicant to be on-boarded at EPA.

ORISE Information: This program, administered by ORAU through its contract with the U.S. Department of Energy (DOE) to manage the Oak Ridge Institute for Science and Education (ORISE), was established through an interagency agreement between DOE and EPA. Participants do not become employees of EPA, DOE or the program administrator, and there are no employment-related benefits. Proof of health insurance is required for participation in this program. Health insurance can be obtained through ORISE.

Questions: Please see the [FAQ section](#) of our website. After reading, if you have additional questions about the application process please email EPArpp@orau.org and include the reference code for this opportunity.

Qualifications The qualified candidate should have received a master's or doctoral degree in one of the relevant fields, or be currently pursuing the degree and will reach completion by September 30, 2020. Degree must have been received within five years of the appointment start date.

Preferred skills:

- Interest in learning how to use the Water Quality Analysis Simulation Program (WASP8) to simulate nanomaterials in surface waters
- Knowledge of computer programming, such as Matlab, Fortran, Python, R
- Knowledge and/or interest in nanomaterials

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- Previous numerical modeling experience, regardless of media
- Experience in using and applying water quality models
- Interest in excelling in numerical modeling

**Eligibility
Requirements**

- **Citizenship:** U.S. Citizen Only
- **Degree:** Master's Degree or Doctoral Degree received within the last 60 months or anticipated to be received by 9/30/2020 11:59:00 PM.
- **Discipline(s):**
 - **Chemistry and Materials Sciences** ([12](#) 👁)
 - **Computer, Information, and Data Sciences** ([16](#) 👁)
 - **Earth and Geosciences** ([21](#) 👁)
 - **Engineering** ([27](#) 👁)
 - **Environmental and Marine Sciences** ([13](#) 👁)
 - **Mathematics and Statistics** ([10](#) 👁)
 - **Physics** ([16](#) 👁)
 - **Science & Engineering-related** ([1](#) 👁)
- **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).