

Opportunity Title: EPA Microbial Communities in the San Juan Bay Estuary Internship

Opportunity Reference Code: EPA-REG2-2020-0001

Organization U.S. Environmental Protection Agency (EPA)

Reference Code EPA-REG2-2020-0001

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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 9/23/2020 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) and Region 2, Water Division located in San Juan, Puerto Rico.

Research Project: Communities around the Caño Martín Peña (CMP) portion of the San Juan Bay Estuary (SJBE) in San Juan, Puerto Rico are subjected to frequent flooding of sewage-enriched urban runoff. This water floods their homes, schools, businesses, and streets. EPA researchers are working to quantify the flooding, link it to precipitation and estuarine hydrodynamics, and develop quantitative models that will allow the communities to better prepare for natural hazards and extreme weather events. Previous work has revealed that the microbial communities in this canal, and adjacent mangroves, may be doubling the bioavailable nitrogen loads from the canal to the SJBE. The adjacent lagoon is known for having anoxic and hypoxic bottom waters, fish kills, and nuisance algal blooms. The biogeochemical processes that are adding nitrogen are also causing the high sulfur concentrations in the air.

The participant will assist the EPA research team to develop a research project. The EPA research team includes science staff from Region 2 and researchers from the Office of Research and Development (ORD), and both groups will provide guidance, instructions, and support for the participant. The participant will conduct field work, collect samples, and then analyze samples in the lab under the guidance of EPA researchers and regional

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staff. The research performed will help to document the ecosystem processes in the CMP and the SJBE that are causing the localized ecological disturbances to occur, including microbial characterization, to allow for improved decision-making in the region. Prospective research will include microbial characterization of mangrove peat soils and/or water column particulate matter. The participant may use analytical techniques like qPCR and experimental approaches like nitrogen fixation assays, as well as perform general water quality analyses.

While the participant will be mentored, and be based at, the EPA's Region 2 Caribbean office in Puerto Rico, they must also be willing to travel to EPA ORD offices in Narragansett, Rhode Island and Research Triangle Park, North Carolina, as appropriate and permissible by the agency (as pertains to COVID-19), for training, sample analysis, and the presentation of results.

Learning Objectives: During the course of this project, the participant will have the opportunity to contribute to and collaborate on EPA research products, including: published research articles in journals, outreach materials for stakeholder and community engagement, and presentations at national and local scientific meetings. There will also be opportunities for the participant to independently present research at scientific meetings, academic institutions, and to local stakeholders.

Mentor(s): The mentor for this opportunity is Autumn Oczkowski (oczkowski.autumn@epa.gov). If you have questions about the nature of the research please contact the mentor(s).

Anticipated Appointment Start Date: **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 three to four 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.

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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 bachelor's degree in one of the relevant fields. Degree must have been received within five years of the appointment start date. Students currently enrolled in a Master's degree program in the same fields are also eligible candidates.

Preferred skills:

- Background in the environmental sciences and some experience and knowledge of coastal ecosystem processes
- Research experience in the field of coastal ecology
- Background (either via classwork or research experience) in microbial ecology and nutrient cycling
- Experience collecting ecological samples in the field
- Fluency in Spanish and English, both orally and in writing
- Experience working in teams and independently

Eligibility Requirements

- **Citizenship:** U.S. Citizen Only
- **Degree:** Bachelor's Degree or Master's Degree received within the last 60 months or currently pursuing.
- **Discipline(s):**
 - **Chemistry and Materials Sciences** ([3](#))
 - **Environmental and Marine Sciences** ([12](#))
 - **Life Health and Medical Sciences** ([6](#))
- **Veteran Status:** Veterans Preference, degree received within the last 120 month(s).

Affirmation I have received a bachelor's degree within the last five years or will receive a bachelor's degree by September 1, 2020, or I am currently enrolled in a master's program.