



<b>Job Title</b>	Graduate Research Assistant - Regional Modeling
<b>PVN ID</b>	RC-2002-003522
<b>Category</b>	Research
<b>Location</b>	CUNY-ADVANCED SCIENCE RESEARCH CENTER
<b>Department</b>	Environmental Sciences Initiative
<b>Status</b>	Part Time
<b>Hourly Rate</b>	\$15.00
<b>Hour(s) a Week</b>	15.00
<b>Closing Date</b>	Apr 11, 2020 (Or Until Filled)

## General Description

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### **Regional Modeling of Nutrient Pollution Arising from Food, Energy And Water Systems under Climate Extremes**

The Advanced Science Research Center at the Graduate Center of the City University of New York has an opening for a graduate student to work on an NSF-funded collaborative research project. The goal of this project is to explore contemporary and future challenges to food-energy-water systems (FEWS) of the Northeastern and Midwestern United States, in light of climate change and its extremes. One aspect of this work will focus on the associated water quality issues. The selected candidate will work under the supervision of Dr. Richard Smith and colleagues at the United States Geological Survey (USGS) in Reston, VA to develop and analyze nutrient pollution arising from FEWS using the SPAtially Referenced Regression On Watershed model (SPARROW).

#### **Primary responsibilities:**

- Developing and analyzing nutrient pollution arising from FEWS;
- Handling seasonal nutrient flux over decadal periods, based on a dynamic formulation with transient storage components including historical nutrient source input legacies;
- Extending Sparrow to the daily time step using re-parameterization techniques;
- Estimating probability distributions of daily stream fluxes;
- Testing SPARROW against existing calibration and validation data, specifically: observed discharge, temperature and quality at USGS gauges, USGS- National Water-Quality Assessment (NAWQA), and multi-agency data syntheses

#### **Qualifications and skills sought:**

- Prior experience with water quality modeling and/or SPARROW;

- Experience with statistical modeling, particularly with SAS;
- Programming experience (MATLAB, Python, R or C++);
- Excellent oral and written communication skills;
- Demonstrable ability to learn new ideas;
- Good numerical skills;
- Presentation skills for internal team meetings and scientific conferences.

## Other Duties

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## Qualifications

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Candidate should have completed a bachelor's degree by the time of appointment in an appropriate field of study, from an accredited institution. Masters and PhD degree candidates are sought.