Postdoctoral Position in Reservoir Water Quality Modeling
Starting Fall 2019-Winter 2020 at
The Institute for Sustainable Cities, Hunter College, City University of New York
APPLICATION DEADLINE November 15, 2019

The New York City Department of Environmental Protection (NYCDEP) manages a system of 19 interconnected reservoirs that supply drinking water to over 9 million consumers in New York City and surrounding areas. We seek to hire a postdoctoral researcher who will contribute to our efforts to develop, test and apply models of this water supply system. NYCDEP's integrated suite of climate, watershed, reservoir, and system operations models are used to investigate the effects of climate change, floods and droughts, land use change, watershed management, and reservoir operations on the NYC water supply. Our one and two-dimensional reservoir models simulate hydrodynamics and the dynamics of temperature, turbidity and eutrophication in our reservoirs. We are working to extend these reservoir models to allow simulation of organic carbon, and in particular, the portion of organic carbon compounds that are precursors to disinfection byproducts (DBPs), including the trihalomethanes and haloacetic acids regulated by the Safe Drinking Water Act. These models will simulate the autochthonous production, degradation, fate and transport of precursors in reservoirs. We seek a postdoctoral researcher with experience in the environmental chemistry of precursors, and in the development and application of precursor models. Candidates with experience in one or more of the following areas are of interest:

1. Use of optical measurements, such as absorbance or emission sensors, as proxies for direct measurement of DBP formation potential.
2. Application of models to simulate fate and transport of precursors under extreme hydrologic conditions (floods and droughts) that may occur in our watersheds under current and future climate conditions.
3. Use of water quality models to guide the optimal operation of a system of water supply watersheds and reservoirs.
4. Development and application of alternatives to process-based reservoir models, including machine learning or artificial neural network approaches.

The selected candidate will be expected to present work at scientific meetings; publish in peer-reviewed journals, and contribute to NYCDEP reports. Hiring will occur though the Institute for Sustainable Cities at Hunter College, City University of New York (CUNY), which has a contract to support NYCDEP's modeling program. Work will involve collaborative efforts with an interdisciplinary team of scientists and engineers, and will provide the opportunity for leadership in specific aspects of the research. The candidate will work with NYCDEP staff and other CUNY researchers on a day to day basis.

Position details:

- Starting date: Fall 2019 to Winter 2020; actual start depends on candidate availability. Initial appointment will be for 18 months; extension may be offered depending on progress.
- Location: NYCDEP office in Kingston, NY, 100 miles north of NYC in the Hudson Valley region.
- This is a full time position with employee benefits, and is open to eligible candidates of any nationality. If necessary, visas can be arranged through the City University of New York.

The candidate should have the following qualifications and experience:

- Ph.D. in civil or environmental engineering, water resources, environmental chemistry, hydrology, or a related discipline.
- Experience in handling, statistical analysis, and presentation of large environmental datasets, and with software to facilitate such work
- Experience with writing software code to implement new or modified models

- Software experience such as MatLab, Fortran, Python, shell scripting, and/or R.
- Demonstrated ability to communicate research results to the scientific and water quality management community through peer-reviewed papers, conference presentations and reports.
- Ability to work in an interdisciplinary team environment.

Application Instructions:

Please send a letter of interest and curriculum vitae electronically to:

Emmet M. Owens
New York City Department of Environmental Protection
71 Smith Avenue
Kingston, NY 12401
eowens@dep.nyc.gov
845-340-7796

Application deadline is November 15, 2019.