



Department of Environmental Conservation

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DEC AND GREAT LAKES RESEARCH CONSORTIUM AWARD \$121,741 IN RESEARCH GRANTS

Funding Supports Five Innovative Projects to Protect Health of Great Lakes

The New York State Department of Environmental Conservation (DEC) and Syracuse-based Great Lakes Research Consortium (GLRC) today announced \$121,741 in grant awards for five research projects that will help restore and protect the health of New York's Great Lakes and surrounding communities.

"Our rapidly changing climate, coupled with increased threats from invasive species, nutrient pollution, and emerging contaminants, are challenging the health of Great Lakes ecosystems," **DEC Commissioner Basil Seggos said.** "The research grants announced today will help New York State delve deeper into the science of these problems and broaden our ability to address these and future challenges."

"The Great Lakes Research Consortium is pleased to support a wide range of projects from across New York State to address important issues including invasive species, harmful algal blooms, changing water levels in Lake Ontario, the identification of new and emerging contaminants, and the use of phosphorus sorption technology," **said Great Lakes Research Consortium Director Gregory L. Boyer, Ph.D.** "These small grant awards support first-of-their-kind and basic foundational research that is essential if we are to properly manage and conserve New York's critical freshwater resources."

The five projects receiving 2021 Great Lakes Research Consortium (GLRC) Small Grants are:

Clarkson University: \$24,917 for a first-of-its-kind project for the New York Great Lakes Basin and watershed. Clarkson Assistant Professor of Biology Andrew David, Ph.D., will lead research to assess the connectivity patterns of two established invasive species of snails—one that impacts largemouth bass populations in New York lakes and rivers, and one that is now the largest, most abundant snail in Adirondack lakes. This work will create a foundation for identifying the vectors that promote aquatic invasive species (AIS) dispersal and potential barriers to help limit their spread. The project will be carried out in collaboration with Dr. Kate Cleary, Assistant Professor of Environmental Studies at SUNY Potsdam.

Hobart and William Smith Colleges (HWS): \$25,000 to lead an international team of researchers that will measure shifts in algal abundance, composition, and nutrients over the past century. HWS Associate Professor of Geoscience Tara Curtin, Ph.D., will work with HWS Finger Lakes Institute Post-Doctoral Research Scientist Michael Brown, Ph.D., to lead the project team that includes researchers with Cornell University, Ithaca, NY; Syracuse University; and the University of Regina, Saskatchewan. The team will evaluate the records of Canandaigua Lake, Cayuga Lake, Owasca Lake, and Seneca Lake, which have all experienced toxic HAB events since 2017. The team will use sediment cores to develop a long-term record of HABs and the associated environmental drivers as a data-based tool for developing mitigation strategies. New York's Ontario County Water Resources Council is providing additional funding for this work.

Binghamton University, State University of New York (SUNY): \$24,035 to augment the New York State Geographic Information System (GIS) database with an historical record of coastline changes along Lake Ontario in Niagara and Orleans counties. Binghamton University Associate Professor of Geological Sciences and Environmental Studies Peter L. K. Knuepfer, Ph.D., will lead this pilot project to systematically evaluate the history of shoreline change, both due to erosion and accretion, as a way to evaluate recent high water events in 2017 and 2019, as well as future changes. The project will incorporate historical imagery, maps, and navigational charts accumulated for this stretch of shoreline over more than three decades. Mapping and identification of trends over time will be shared with municipal and county stakeholders to assist resiliency planning.

SUNY College of Environmental Science and Forestry (ESF): \$24,789 to test a combined technology process for detecting new and unknown water pollutants missed by traditional screening practices that target known contaminants. SUNY ESF Assistant Professor of Chemistry Alexander B. Artyukhin, Ph.D., will lead an ESF team that includes John Hassett, Ph.D., Professor of Chemistry, and Lemir Teron, Ph.D., Assistant Professor of Environmental Studies. The team will analyze samples from Onondaga Lake and Lake Ontario to test the feasibility of using untargeted mass spectrometry technology paired with molecular networking to discover potential new pollutants, derivatives, or metabolites.

The Seneca Watershed Intermunicipal Organization: \$23,000 to collaborate and evaluate optimizing the design of phosphorus sorption technology for deployment in agricultural settings in the Great Lakes region. In collaboration with the Finger Lakes Institute at HSW, the Yates, Seneca, and Ontario County Soil and Water Conservation Districts, and Seneca Farms Biochar in Odessa, Seneca Watershed Steward Ian Smith will lead this innovative project to inform the design of field-scale systems that would be USDA Natural Resources Conservation Service-approved best management practices for mitigating phosphorus and HABs.

This small grants program is funded by New York's Environmental Protection Fund. The Great Lakes Research Consortium is an organization of 18 colleges and universities in New York State, plus nine affiliate campuses in Ontario, Canada, dedicated to collaborative Great Lakes research and science education. Its small grants program provides funding for small-scale research projects that take initiating steps to address critical Great Lakes issues and establish baseline data to support larger applied research and demonstrations projects. Learn more at www.esf.edu/glrc.

NOTE: Photos attached.

1. Clarkson Assistant Professor of Biology Andrew David, Ph.D. Photo: Clarkson University – web resolution only
2. Hobart and William Smith Colleges Associate Professor of Geoscience Tara Curtin, Ph.D., right, instructs students on a research vessel field trip. Photo: Hobart and William Smith Colleges
3. Seneca Watershed Steward Ian Smith conducts field research in Castle Creek, Geneva, N.Y. Photo: Samantha Stumpf
4. Binghamton University Associate Professor of Geological Sciences and Environmental Studies Peter L.K. Knuepfer, Ph.D., along Esopus Creek, a Hudson River tributary in New York's Catskills Mountains. Photo courtesy of Peter L.K. Knuepfer
5. SUNY ESF Chemistry Professor John Hassett, Ph.D., prepares to launch the ESF Chemistry research vessel on Onondaga Lake. Photo: SUNY ESF

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