



# ENVIRONMENTAL ENGINEERING

## GRADUATE PROGRAM

The Environmental Engineering Graduate Program at UConn prepares students to address the pressing challenges of water quality and quantity, climate change and associated natural hazards, contaminated soils and ecosystems, as well as the need for renewable energy sources. Graduate students may choose to focus on one of three core areas under the direction of a number of different faculty in Environmental Engineering and other associated fields: Atmospheric Sciences, Hydrogeosciences & Water Resources, or Contaminant Fate and Resource Recovery.

### OUR RESEARCH

Our researchers are using advanced modeling techniques grounded with in-situ measurements using novel sensors and analytical tools to determine strategies for agricultural land management, water utility planning for drought, modeling contaminant uptake in our streams and on our landscapes, and assessing groundwater recharge in the face of drought conditions. Research is conducted both here and abroad with partners in Ethiopia. We also have major partnerships with a regional utility company to help them predict, prepare, and manage responses to weather events, and to build more resilient power infrastructure.

### STUDENT EXPERIENCE

Our graduate program is not just about research. You will have the opportunity to build your professional skills in written and oral communication, network with other scientists, prepare yourself for networking and job interviews, participate in teaching and gain leadership experience. Our program devotes time to training in areas that align with student interests. Our graduates work in academia and in industries such as insurance where they predict future flooding, environmental consulting where they perform advanced contaminant fate modeling, and government organizations where they build weather models.



## MAJOR RECENT ENVIRONMENTAL ENGINEERING PROJECTS

- 2019 NSF: Collaborative Research: SitS NSF UKRI: Decoding Nitrogen Dynamics in Soil through Novel Integration of in-situ Wireless Soil Sensors with Numerical Modeling. PI: Baikun Li. Funding: \$640,000
- 2018 ED/Department of Education: Addressing Aging Infrastructure: From Components to Networks. PI: Timothy M Vadas. Funding: \$746,250
- 2018 USAID/US Agency for International Development/National Academy of Sciences: New Generation of Microbial Cultures to Improve Food Quality and Safety. PI: Baikun Li. Funding: \$182,400
- 2018 CT Department of Economic and Community Development: The Connecticut Brownfields Initiative. PI is Maria Chrysochoou. Funding: \$50,000
- 2018 Infiltrator Water Technologies: Validation of Milli-electrode Array (MEA) as Real-time In Situ Nitrogen Sensor Package for On-Site Wastewater Treatment Systems (OWTS). PI is Baikun Li. Funding: \$128,790
- 2017 Eversource: Expanding the UConn Predictive Storm and Outage Model to MA and NH. PI is Emmanouil N Anagnostou. Funding: \$235,752
- 2017 NSF/National Science Foundation: A Bottom-up Approach to Design of Chemical Soil Stabilization Using Thermodynamic Modeling. PI is Maria Chrysochoou. Funding: \$256,694
- 2017 DOI/United States Geological Survey: University of Connecticut - USGS Cooperative Agreement: Cooperative Hydrogeophysics and Water Resource Research. PI is Amvrossios C Bagtzoglou. Funding: \$318,118
- 2017 USDA/National Institute of Food and Agriculture: Assessing Barriers to Use of Reclaimed Wastewater for Food Production in Controlled Environment Agriculture. PI is Timothy M Vadas. Funding: \$406,907
- 2017 DOE/Department of Energy: UCR AOI 1-3: Low Cost, Real-Time, in Situ Continuous Measurement of Water Quality using Self-powered Wireless Milli-electrode Array (WiMEA) Sensor Package. PI is Baikun Li. Funding: \$399,999
- 2016 NSF: PIRE: Taming Water in Ethiopia: An Interdisciplinary Approach to Improve Human Security in a Water-Dependent Emerging Region. PI: Emmanouil Anagnostou. Funding: \$4,274,944.

## THE ENVIRONMENTAL ENGINEERING TEAM



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Energy and Environmental Applications of Nanotechnology, Photoelectrochemical Solar Energy Conversion, Combined PV/thermal Solar Collectors, Photocatalytic Pollutant Remediation

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### MARIA CHRYSOCHOOU

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### LANBO LIU

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### JONATHAN E. MELLOR

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### TIM VADAS

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