Graduate Programs

In commitment to education, the CAAE is dedicated to training young scientists to develop solutions about water quality issues and promote stewardship for North Carolina’s future.

Our M.S.- and Ph.D-level graduate students are engaged in freshwater, estuarine and coastal marine research with renowned scientists at NCSU and other institutions.

Course Teaching and Workshops

Center personnel teach three courses for graduate students and advanced undergraduates:

- The Biology, Diversity, and Ecology of Algae
- Aquatic Plant Ecology
- Environmental Issues in Aquatic Ecology

These courses are also taken by high school teachers and other professionals to increase their science training.

The CAAE also conducts workshops to train students, academic scientists, and state and federal agency personnel in harmful algal detection and culturing, and light microscopy.

Internships

The Center offers opportunities to high school, college undergraduate, and foreign exchange students to pursue research projects, and to assist in field and laboratory research that is compatible with their interests.

The CAAE’s internship program is recognized at state, national and international levels. It has attracted outstanding undergraduate students from around the world including Caldwell Scholars, Park Foundation Fellows, Howard Hughes Fellows and participants in the IAESTE (International Association for the Exchange of Students for Technical Experience).

Contact the CAAE

For more information, contact us at:
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620 Hutton St. - Suite 104, Raleigh, NC 27606
Telephone: 919-515-3421
Website: https://caae.cals.ncsu.edu/
Email: jburk@ncsu.edu
The CAAE is a 9,000-square-foot complex comprised of laboratories, classrooms, a conference room, offices, and administrative facilities. Laboratories include:

- Environmental Chemistry
- Analytical Chemistry
- Microscopy
- Aquatic Plant Eco-Physiology
- Harmful Algal Research
- Aquatic Invertebrates
- Microscopy

The Center for Applied Aquatic Ecology specializes in aquatic research, teaching, and education outreach. Its mission is to provide information on aquatic resources from fish and human health perspectives. The CAAE’s general environmental outreach program includes hands-on experiments and water sampling, teacher-approved curricula, distance education via the Internet, and volunteer and internship opportunities. Most recently, we have begun a 24/7 data collection system for remote monitoring and research on Falls Lake, the Neuse River, and the Neuse Estuary. Remote monitoring and research on the Neuse River help inform water quality assessments and pollution impact assessment (nutrient enrichment, fecal bacteria, other harmful microbes).

Current Research Projects

- Long-term, high-frequency dataset: Real-Time Remote Monitoring and research on Falls Lake (14 years ongoing), a major potable source-water, to provide an early warning system that helps safeguard the drinking water supply depended upon by more than half a million people in the area.
- Long-term, high-frequency dataset: Real-Time Remote Monitoring and research on the Neuse River to track progress in water quality protection.
- Harmful algae (freshwater, estuarine, marine) – ecology, toxicity, and impacts on fish health.
- Pollution impact assessment (nutrient enrichment, fecal bacteria, other harmful microbes).

Environmental Outreach Education

Our Real-Time Remote Monitoring web-based system makes it possible for us to bring information on water quality and other environmental issues to citizens of all ages across our state. Educational outreach includes work with students, parents, and educators across the state. The CAAE’s general environmental outreach program includes hands-on experiments and water sampling, teacher-approved curricula, distance education via the Internet, and volunteer and internship opportunities. Most recently, we have begun a Burroughs Wellcome Fund grant, “Falls Lake Partners in Water Quality Forensics,” for rising 8th and 9th graders.

Environmental Outreach Education

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