

## VIRGINIA WESLEYAN UNIVERSITY

### JOAN P. BROCK SCHOOL OF MATHEMATICS AND NATURAL SCIENCES

*From climate change to water pollution, humans are altering natural systems in complex and unexpected ways. Understanding human impacts to these natural systems requires interdisciplinary analysis of complex problems. Earth and Environmental Sciences is a multi-disciplinary field that addresses the interactions between humans and the environment. Study in this field includes an understanding of the basic principles that govern geological, biological and chemical interactions, as well as development of solutions to current environmental problems.*

#### THE PROGRAM

The Department of Earth and Environmental Sciences at Virginia Wesleyan is designed to provide a solid foundation in the earth sciences as well as supporting coursework in chemistry, biology, and physics. In addition to mastering concepts, students will receive hands-on skills to include field methods, laboratory techniques, GIS (geographic information systems) and research.

#### THE ENDORSEMENT AREAS

The Earth and Environmental Sciences program is designed to prepare students for diverse career paths. Students majoring in earth and environmental sciences may choose to earn a Bachelor of Science or Bachelor of Arts degree. The B.S. program is intended for students who plan to pursue a graduate degree in earth or environmental sciences and has additional mathematics requirements. The B.A. program is designed to provide a broad background in the fundamentals of earth science for students who intend to have careers in secondary education, business, or law, or a double major. Accelerated degree options are available which allow students to receive a Bachelor's degree from Virginia Wesleyan and a master's degree from a partner institution in five years. Current accelerated degree options for our majors include a Master of Forestry or Master of Environmental Management from Duke University and a Master of Engineering specializing in Environmental Engineering from Old Dominion University.

#### THE COURSES

Classes in the Earth and Environmental Sciences Department are small, interactive, and hands-on. Courses within the program include: Physical Geology, Oceanography, Meteorology, Ecology, Environmental Chemistry, Climatology, Hydrology, Biogeochemistry and a travel course on Tropical Biology.

#### INTERNSHIPS/UNDERGRADUATE RESEARCH

Earth and environmental sciences majors are offered the opportunity to conduct original scientific research in an area of interest. They work closely with a faculty mentor to develop and conduct a research project, then present their findings during the University's Undergraduate Research Symposium. Students are also encouraged to present their findings at a conference.

Internships are an intensive study of a specific field of science through an on-site field experience with professional mentors. Past internship sites have included NASA, the National Oceanic and Atmospheric Administration, the Chesapeake Bay Foundation, the Virginia Department of Environmental Quality, and the Virginia Aquarium and Marine Science Center.

#### BEYOND THE CLASSROOM

Virginia Wesleyan graduates who earn a degree in earth and environmental sciences pursue careers in diverse areas such as environmental consulting, secondary education in earth science, environmental education and outreach, and governmental agencies. In addition, graduates can pursue graduate studies in the areas of oceanography, meteorology, geology, environmental sciences and environmental engineering.

---

#### CONTACT INFORMATION

##### Dr. Chris Haley

*Kenneth R. Perry Dean of the Joan P. Brock School of Mathematics and Natural Sciences  
Professor of Earth and Environmental Sciences  
jchaley@vwu.edu*

##### Dr. Elizabeth Malcolm

*Professor of Ocean and Atmospheric Sciences  
emalcolm@vwu.edu*

