

DEPARTMENT OF ENVIRONMENTAL SCIENCES
UNIVERSITY OF VIRGINIA
(<http://www.evsc.virginia.edu>)

IMPORTANT INFORMATION FOR PROSPECTIVE GRADUATE APPLICANTS

Thank you for expressing an interest in graduate study in Environmental Sciences at UVa. The Graduate Admissions Committee has prepared the following Frequently Asked Questions document to help explain the process to you. Please spend a few moments to review this critical information.

What graduate degrees are offered?

Ph. D. (Doctor of Philosophy), M.S. (Master of Science) and M.A. (Master of Arts), all in Environmental Sciences.

What is the nature of the research conducted in the Environmental Sciences graduate program?

We are primarily a science department that emphasizes the earth sciences (physical sciences and chemistry) and ecology, and the interactions between these various disciplines. Our faculty do research at a wide variety of temporal and spatial scales. The core disciplines are atmospheric sciences, ecology, geosciences, and hydrology.

The majority of our graduate students are enrolled in the M.S. and Ph.D. programs and are engaged in fundamental research.

How does the M.A. program differ from the M.S.?

The M.A. program is a one-year degree that emphasizes course work over basic science research. It is intended for students who do not anticipate a career in science but who wish to gain a background in the Environmental Sciences primarily through course work. M.A. students are enrolled in the same classes as M.S. and Ph.D. students.

Does the Environmental Sciences Department provide training in environmental policy, environmental planning, or sustainability?

Although we have faculty with interests in these areas, the focus of our program is the sciences that informs these applications. emphasis.

What application materials are needed?

An application form, GRE scores, an official transcript of your entire collegiate record, and at least two letters of recommendation. Foreign applicants must also submit results of a recent TOEFL examination.

Application: Your statement of interest is critical. We wish to know, as specifically as possible, what your research interests are and those faculty with whom you would like to work. It's OK to not have a specific research plan, but your interests are very important in helping us properly route your application to the appropriate faculty members.

GRE Scores: We only use the verbal and quantitative portions of the exam.

Letters of Recommendation: Letters from faculty members who know you well are more useful than letters from employers. Statements from letter writers about your aptitude to do graduate level course work and research are particularly helpful.

TOEFL: If you are a foreign applicant whose first language is not English or do not have a degree from an institution in which English was the primary language of instruction, you must submit results of a recent TOEFL examination. The minimum requirements are 600 (paper-based test), 250 (computer-based exam), or an IELTS score of at least 7.0.

What GRE scores are required for admission?

There is no minimum GRE required for admission. The mean GRE scores of Environmental Sciences students is 1260 (690 Math, 570 Verbal). As these are mean values, there can be quite a lot of variation between students.

What grades are required?

The Graduate School requires a "B" average grade over the last two years of your degree program. The mean score of our graduate students is between A- and B+.

Do I need a Bachelor's Degree in Environmental Sciences or a related field to be considered for admission?

The short answer is no. Students with a wide variety of undergraduate training have been successful in our program. However, it may be necessary to do some background course work in math or sciences. Each case is evaluated on an individual basis.

What is the single most important strategy for having my application carefully evaluated?

It is critical that you directly contact those faculty members whose research is of interest to you. Our admissions process is largely driven by the student/adviser interaction. It is usually easiest to contact the faculty members by email to ask them about their work, to outline your interests, and to find out if they are accepting any new students. The departmental web page is a very good resource for information about the research conducted by our faculty.

When are applications due?

To be considered for all possible forms of financial aid, applications are due on January 15. We will accept and review later applications, but it is in your best interests to apply by January 15.

Do all students begin in the fall semester or do you allow spring admission?

The very large majority of our students begin in the fall semester. While we do allow some students to start in the spring, they typically are admitted without financial aid for that semester.

When are admissions decisions made?

We begin mailing acceptance and rejection letters in late January/early February, but this is a rolling process that technically extends throughout the calendar year.

What is the deadline to notify UVa of my decision?

Most universities have reached an agreement that no one can force a student to make a decision before April 15, and we are party to that agreement. As soon as you have made a decision, however, we encourage you to let us know as soon as possible.

Does admission come with a financial aid guarantee?

Admissions and financial aid decisions are separate. If you are accepted, it does not necessarily mean that you will receive financial support.

What is the typical package for financial aid?

The Department has a variety of means for supporting graduate students, including fellowships (see below). Many first-year students are supported 50% by a teaching assistantship and 50% by a research assistantship. The teaching assistantship comes from the Department and typically involves teaching one lab section a week. The research assistantship typically comes from the advisor's research grant with duties determined by the advisor. Support includes stipend, tuition, and health insurance.

How can I be considered for fellowships?

All students who apply by January 15 are considered for fellowships provided by the University and other sources.

What is the current stipend?

Current graduate stipends (excepting some special fellowships) range from \$17,000 to \$18,200 depending on whether a student enters the program with a bachelor's or master's degree. These stipends cover the 9-month academic year. Many advisors provide additional funds to support summer research.

Whom do I contact with any questions that are not addressed here?

The admissions chair is Bob Davis (red3u@virginia.edu; 434-924-0579). He will be able to either answer your question or direct you to the right person. Most everything you need to know can also be found on the departmental website: <http://www.evsc.virginia.edu>.

Information for prospective graduate students

Department

The Department of Environmental Sciences is an academic department in the College of Arts and Sciences, offering instruction and conducting research in the areas of Atmospheric Sciences, Ecology, Geosciences and Hydrology. This unique juxtaposition of several sciences in one Department fosters cooperation and exchange among traditional disciplines that share similar methodological and philosophical problems. The research endeavors of both faculty and graduate students, whether disciplinary or interdisciplinary, deal largely with problems of fundamental scientific interest and to a lesser extent with applied science, management or policy making. Research areas include biogeochemistry and environmental chemistry, coastal processes, hydrogeology, catchment hydrology, geomorphology, microbial, aquatic, and terrestrial ecology, boundary layer meteorology, air quality, and climatology.

Programs of Study

The Department offers three graduate degree programs: the Doctor of Philosophy (Ph.D.), the Master of Science (M.S.) and the Master of Arts (M.A.). The program of study for an M.S. degree emphasizes research in addition to fundamental course work. A degree candidate must complete a minimum of 24 credit hours of course work, including one graduate course from each of the four core areas of the department (atmospheric sciences, ecology, hydrology, and geosciences). A formal written thesis proposal and a thesis that emphasizes hypothesis testing using original data or theoretical exploration must be successfully defended to complete the degree. The M.A. degree is designed to be completed in one year. It emphasizes course work over original research and is structured for students who do not wish to pursue careers that emphasize basic scientific research. The program of study toward the Ph.D. degree emphasizes original research and independent study rather than formal course work. The degree candidate is required to complete the four core-area courses mentioned for the M.S. as well as one advanced 7000-level course. A total of 54 credit hours (or 30 hours past the M.S.) of graduate course work, including thesis research, must be accumulated. Ph.D. candidates must pass a written and oral comprehensive examination. A proposal for original scholarly research, completion of the research and presentation of the results in a Department-level seminar, and successful defense of the written dissertation are required for completion of the degree.

Facilities

The Department of Environmental Sciences is located in Clark Hall, along with the Brown Science and Engineering Library, on the central Grounds of the University. An addition to Clark Hall was recently completed that provides new research labs, graduate student offices and faculty offices. Departmental facilities also include boats, environmental chambers, greenhouse facilities; computational laboratories, and the Pace/Steger field teaching/research site. For more detailed information on facilities, please go to [Major interdisciplinary research initiatives in the department](#) include (but are not limited to) the Virginia Coast Reserve/Long Term Ecological Research (VCR/LTER) studies of coastal systems based on Virginia's Eastern Shore; the Shenandoah Watershed Study (SWAS) in Shenandoah National Park to investigate controls on biogeochemical cycling; and Blandy Experimental Farm and the Orland E. White Arboretum for ecological research near Front Royal, VA. Please see the Department's web page for additional information.

Financial Aid

Four sources of financial support are generally available: fellowships, teaching assistantships, research assistantships, and graderships. All M.S. and Ph.D. students seeking September admission who have completed their applications by January 15 are considered for fellowships or teaching assistantships, which are awarded on the basis of background and merit. Teaching assistants teach the laboratory sections of undergraduate and graduate courses. Research assistantships are usually available through an individual faculty member's research project, and the faculty in one's area of interest should be contacted directly for information. Graduate teaching and research assistantships range from \$17,000-\$18,200 for full support for the academic year; a summer research stipend of about \$5000 typically is also offered. In-state and out-of-state tuition is covered for most students receiving financial aid, and health insurance is provided.

Admissions

Candidates for admission must show a past history of scholarship and academic excellence and a desire and determination to further their studies in the environmental sciences with an emphasis on original scientific research. Although not specifically required for admission, a firm background in mathematics, statistics, physics, chemistry, geology, and biology will be to the student's advantage. The Dean's minimum standards for admission are an undergraduate GPA of 3.0 (last two years)—successful applicants, however, are more likely to have a GPA of at least 3.4, and have shown particular promise for research through correspondence, telephone conversations, personal interviews, or evidence of scholarship and research not represented by grades or test scores. For foreign students, a TOEFL score of 600 or higher on the written test (250 or higher on computerized test) is required for admission. A personal interview with faculty with similar interests is strongly advised.

Deadlines for the completion of applications are as follows:

September admission: January 15 (a few college fellowships require application prior to December 1)

January admission (no financial aid): October 15

Applications should be submitted electronically with supporting materials sent to the Graduate School of Arts and Science. Application materials and more information can be obtained at

www.virginia.edu/artsandsciences/admissions.

Student Group

Currently 84 students are enrolled in graduate degree programs in the Department; about two-thirds are in the Ph.D. program and about 55% are women. Students come from a wide range of backgrounds including geology, chemistry, biology, physics, and engineering. Once here, specialization in one area is possible, but many students engage in interdisciplinary research that crosses traditional fields of study.

Region

The University Grounds are located in Albemarle County adjacent to the City of Charlottesville, near the foothills of the Blue Ridge Mountains in central Virginia. The University is 110 miles from Washington, D.C., a short drive from the Blue Ridge, a two-hour drive from the Chesapeake Bay, and four hours from the Atlantic Ocean.

The Faculty and their Research Areas

Robert Davis: Synoptic and applied climatology, statistical climatology, bioclimatology, climate change (red3u@virginia.edu)

Paolo D'Oroico: Surface hydrology; stochastic modeling of hydrologic processes; soil moisture dynamics; soil erosion (paolo@virginia.edu)

Stephan DeWekker: Boundary-layer meteorology, mountain meteorology, mesoscale modeling, land-atmosphere interactions (dewekker@virginia.edu)

Robert Dolan: Coastal processes and geomorphology, coastal hazards, shoreline erosion, barrier island dynamics (rd5q@virginia.edu)

Howard Epstein: Climate-plant-soil interactions; grassland, shrubland and tundra ecosystems; GIS, remote sensing, simulation modeling (hee2b@virginia.edu)

Amato Evan: Large-scale variability, ocean-atmosphere interactions, tropical meteorology, aerosols, general circulation models, satellite meteorology (ate9c@virginia.edu)

James Galloway: Biogeochemistry at watershed, regional and global scales (jng@virginia.edu)

Bruce Hayden: Dynamic climatology and coastal ecology, climate/ecosystem dynamics; geomorphology, climate change (bph@virginia.edu)

Janet Herman: Low-temperature aqueous geochemistry, kinetics of water-rock interactions, geochemical modeling, groundwater in karst terrains (jherman@virginia.edu)

Alan Howard: Fluvial geomorphology, simulation modeling of landscape evolution; Martian geomorphology, groundwater sapping (ah6p@virginia.edu)

Deborah Lawrence: Nutrient cycling in tropical rainforests, relating biodiversity and ecosystem function, ecosystem sustainability (dl3c@virginia.edu)

Manual Lerdau: Environmental & evolutionary physiology, ecosystem ecology, biosphere-atmosphere interactions (mtl5g@virginia.edu)

Stephen Macko: Biogeochemistry, marine organic geochemistry, and stable isotope geochemistry (sam8f@virginia.edu)

Karen McGlathery: Aquatic ecology, biogeochemical controls on estuarine nutrient dynamics, ecophysiology of algae and seagrasses, marine conservation and management (kjm4k@virginia.edu)

Aaron Mills: Microbial ecology, microbial transformations of groundwater pollutants, bacterial transport through porous media. (almjd@virginia.edu)

Michael Pace: Aquatic ecosystems, food webs, carbon cycling, biogeochemistry, microbial ecology (mlp5fy@virginia.edu)

Matthew Reidenbach: Environmental fluid dynamics; Sustainable marine resources; Transport and mixing in estuaries and coral reefs; Biomechanics of marine organisms (mar5jj@virginia.edu)

Todd Scanlon: Land-atmosphere interaction, climate-vegetation modeling, and catchment hydrology (tms2v@virginia.edu)

Herman Shugart: Global change, systems ecology, forest ecosystem analysis and dynamics, ornithology (hhs@virginia.edu)

David Smith: Biological oceanography, marine ecology, invertebrate zoology, ecology of blue-water plankton (des3e@virginia.edu)

Thomas Smith: Theoretical ecology, vegetation modeling, global ecology (tms9a@virginia.edu)

Patricia Wiberg: Sediment transport, coastal oceanography, geological fluid mechanics (pw3c@virginia.edu)

Joseph Ziemann: Marine ecology, ecology of seagrass ecosystems, ecology of tropical coastal systems ecosystems jcz@virginia.edu)

Research Faculty

Peter Berg: Modeling of transport phenomena where the transport is occurring by diffusion, convection and radiation (pb8n@virginia.edu)

Linda Blum: Microbial abundance, productivity and community structure in estuarine systems; microbe-plant interactions; effects of microbial community structure on processes (lkb2c@virginia.edu)

David Carr: Evolutionary ecology, population, quantitative and ecological genetics (dec5z@virginia.edu)

Jack Cosby: Limnology, biogeochemistry, quantitative analysis of environmental data, simulation modeling (bjc4a@virginia.edu)

Michael Erwin: Population and community ecology, behavioral ecology, conservation biology, avian biology (rmc5g@virginia.edu)

Michael Garstang: Tropical marine and continental meteorology; convective storms; trace gas and aerosol transports, animal communication (mxg@thunder.swa.com)

Grant Goodell: Sedimentation, marine geology, marine affairs, hydrogeology, radionuclides in groundwater, salt-water intrusion (hgg@virginia.edu)

William Keene: Multiphase atmospheric chemistry, atmospheric oxidation, atmosphere biosphere interactions, measurement techniques (wck@virginia.edu)

Kyle Haynes: Landscape, population, and community ecology; movement behavior; plant-herbivore-predator interactions (kjh8w@virginia.edu)

William Keene: Multiphase tropospheric chemistry, oxidation processes, atmosphere-biosphere interactions, global change, measurement techniques (wck@virginia.edu)

Jennie Moody: Long-range atmospheric transport and trajectory modeling, acid deposition and precipitation chemistry, chemical climatology.
(jlm8h@virginia.edu)

Arnico Panday: Atmospheric chemistry, mountain meteorology, urban air pollution, regional haze, aerosol-climate interactions, sustainable development (akp5x@virginia.edu)

John Porter: Mammalian dispersal, population, community and landscape ecology, multivariate statistics, remote-sensing and GIS
(jhp7e@virginia.edu)

G. Carlton Ray: Coastal-marine ecology, conservation and policy; polar ecology; coastal-marine biological diversity and ecological processes; marine mammals and fishes (cr@virgina.edu)

Tai Roulston: Plant-pollinator interactions; evolutionary ecology; habitat fragmentation; invasive-species; bee biology (thr8z@virginia.edu)

Robert Swap: Tropospheric aerosol and trace gas transport, atmosphere-biosphere interactions, experimental atmospheric science
(rjs8g@virginia.edu)

Affiliated Faculty

Ralph Allen: Trace element geochemistry, hazardous waste-management (roa2s@virginia.edu).

Thomas Biggs: Petrology, economic geology, regional geology, geomorphology, soil biogeochemistry (thb3k@virginia.edu)

Vivian Thomson: Environmental policy and politics (vet4y@virginia.edu)

Henry Wilbur: Population biology and community ecology, ecological genetics (hmw3q@virginia.edu)