Dear Major:

We hope you are having a productive year! In preparation for the Spring 2016 semester, this newsletter presents important information on advising, courses, placement, research opportunities, awards, and graduation.

Faculty Changes 2015-2016

Ms. Sally Pusede is new to the faculty in the Fall 2015 semester. She is an atmospheric chemist with broad interests in air quality, climate and atmosphere-biosphere interactions.

Mr. Paolo D’Odorico is on leave for the Fall 2015 semester.

Mr. Stephan DeWekker is on leave for the 2015-2016 academic year.

Course Information

The Department of Environmental Sciences is recruiting students for both its BS and BA degrees. We encourage you to recommend our department to fellow students who may not have selected their major at this time. Anyone needing assistance in determining whether a degree in Environmental Sciences is right for them should see Mr. Bob Davis or Mr. Jim Galloway (Co-Directors of Undergraduate Programs).

Spring 2016 Courses

Lower Division:

EVSC 1010 Introduction to Environmental Sciences, Mr. T. Smith, 3 credits
EVSC 1020 Practical Concepts of Environmental Sciences, Ms. Blum, 1 credit
EVSC 1040 Virginia’s Environments, Mr. Biggs, 3 credits
EVSC 1300 Earth’s Weather and Climate, Mr. Davis, 3 credits
EVSC 1450 Climate Change, You and CO2, Ms. Lawrence, 3 credits
EVSC 2010 Materials That Shape Civilization, Mr. Kelly, 3 credits
EVSC 2050 Introduction to Oceanography, Mr. Macko, 3 credits
EVSC 2559 Humans and the Environment, Mr. Plog, 3 credits

Core Courses: Each of our four required core courses is offered every semester, and each consists of a 3-credit lecture and a 1-credit laboratory. The offerings and instructors for Spring 2016 are:

EVSC 2800, 2801 Fundamentals of Geology, Ms. Herman, 3 credits, 1 credit
EVSC 3200, 3201, Fundamentals of Ecology, Mr. Lerdau, 3 credits, 1 credit
EVSC 3300, 3301, Atmosphere & Weather, Ms. Pusede, 3 credits, 1 credit
EVSC 3600, 3601, Physical Hydrology, Mr. Reidenbach, 3 credits, 1 credit
*Note that EVSC 3201 meets the Second Writing Requirement for the College.

Upper Division: Planned upper division offerings for Spring 2016 include:

- EVSC 3020 GIS Methods, Mr. Porter, 4 credits
- EVSC 4002 Undergraduate Seminar, 1 credit
- EVSC 4010 Introduction to Remote Sensing, Ms. Moody, 4 credits
- EVSC 4030 Environmental Policymaking, Ms. Thomson, 3 credits
- EVSC 4050 Topics in Oceanography, Mr. Macko, 3 credits
- EVSC 4070 Advanced GIS, Mr. Porter, 3 credits
- EVSC 4082 U.S. National Parks, Mr. Biggs, 3 credits
- EVSC 4160 Forest Sampling, Mr. Shugart, 3 credits
- EVSC 4240 Restoration Ecology, Ms. Blum, 3 credits
- EVSC 4260 Grasslands and Tundra, Mr. Epstein, 3 credits
- EVSC 4360 Weather Forecasting, Ms. Moody, 3 credits
- EVSC 4559 Sustainable Water & Food Security, D’Odorico, 3 credits
- EVSC 4559 Large Organisms in Ecosystems, Ray, 2 credits
- EVSC 4559 Problems in Water Resources Geochemistry, Ms. Herman, 3 credits
- EVSC 4860 Geology of Virginia, Mr. Biggs, 3 credits
- EVSC 4870 Global Biogeochemical Cycles, Mr. Galloway, 3 credits
- EVSC 4890 Planetary Geology, Mr. Howard, 3 credits
- EVSC 4991 Conservation Theory and Practice, Mr. D. Smith, 3 credits
- EVSC 4993 Independent Study
- EVSC 4995 Supervised Research
- EVSC 4999 Thesis Research

Undergraduate students are reminded that courses at the 5000-level are open to them, and most advanced majors should be able to handle the subject material in those courses as well as they can handle 4000-level courses.

- EVSC 5020 GIS Methods, Mr. Porter, 4 credits
- EVSC 5030 Applied Stats for Environmental Science, Mr. D. Carr, 4 credits
- EVSC 5050 Advanced Oceanography, Mr. Macko, 3 credits
- EVSC 5060 Coastal Oceanography, Ms. Wiberg, 3 credits
- EVSC 5082 Nitrogen Seminar, Mr. Galloway, 1 credit
- EVSC 5440 Physical Oceanography, Mr. Reidenbach, 3 credits
- EVAT 5410 Atmospheric Dynamics, Mr. Grise, 4 credits
- EVGE 5820 Geomorphology, Mr. Howard, 4 credits
- EVGE 5860 Isotope Geochemistry, Mr. Macko, 4 credits

Advising Information

Faculty Advisors
The Department's Undergraduate Academic Advising Committee (UGARC) are Mr. Bob Davis, Atmospheric Sciences, red3u@virginia.edu; Mr. Jim Galloway, Geosciences, jng@virginia.edu; Mr. Tom Smith, Ecology, tms9a@virginia.edu; and Ms. Janet Herman, Geosciences, jherman@virginia.edu. When deciding on a major, students should contact Bob Davis or Jim Galloway, UGARC co-chairs. At that time, a faculty advisor will be assigned. If the student has a preference, that advisor may be assigned. During the course of the student's time in the department, their assigned advisor is the primary source of information. For more complicated issues, they can contact the area representative on the UGARC. Students with questions about interpreting requirements, domestic transfer credits, or SIS-related issues should contact Mr. Davis. Those with questions about study abroad and international transfer credits should see Mr. Galloway.

**Arts and Sciences Council**

College Council is the governing body of the College of Arts and Sciences at UVA and is dedicated to representing the needs and interests of its students, serving as peer academic advisors, strengthening college identity, fostering faculty-student relations, and connecting with alumni. [http://new.collegecounciluva.com/](http://new.collegecounciluva.com/)

**Faculty Student Interaction Grants (FSIGs)** are awarded to instructors who plan to interact with students in a creative manner outside of the classroom. The grants are aimed to foster relations between instructors and their classes, and to enhance students’ learning experiences. This funding program is available to faculty members, teaching assistants, and Cavalier Education instructors.

Grants are usually awarded for $250-$500. There is no limit on the number of events an instructor may seek funding for per semester.

Please contact the Funding Chair, Nick Masters, with any questions.

**Fall 2015 Majors Seminar**

The Environmental Sciences Organization sponsors the Major's Seminar each semester from 4-5 p.m. on Tuesdays to address subjects in environmental sciences and related fields. The seminar covers the interests of the Department of Environmental Sciences and specific issues related to the environment. Current research in the department, local concerns, and worldwide environmental issues broadly categorize the seminar topics. If you have any suggestions for the seminar, please contact Mr. Steve Macko (sam8f@virginia.edu). Please remember that because this course is not graded, it cannot be used to satisfy the requirements for the degree, but the 1 credit can count toward the 120 credits required for graduation.

**Specialization in Environmental and Biological Conservation**

The Department of Environmental Sciences, in conjunction with the Department of Biology, offers an opportunity for students to obtain the Bachelor of Arts or Science in Environmental Sciences with a Specialization in Environmental and Biological Conservation. Candidates for the Specialization must fulfill all the requirements for the Environmental Sciences major with additional Specialization requirements.
The requirements for the Specialization are as follows: (1) Related math and science courses are calculus (MATH 1210 or 1310), organismal biology (BIOL 2020 or BIOL 3010) with lab (BIOL 2040), and either chemistry with lab (CHEM 1410/1411) or physics with lab (PHYS 1610/2010); (2) the four core environmental science courses (EVSC 2800, 3200, 3300, 3600) with their labs; (3) Two introductory courses in environmental conservation (EVSC 2220, BIOL 3450), population ecology (EVSC 4130) and the a seminar in environmental and biological conservation (EVSC 4142); (4) an additional four upper-level courses in either Environmental Sciences or Biology. These additional courses must cover each of the following areas: Biological Diversity—a course focused on a particular group of organisms (e.g. plants, birds, mammals); Environmental Diversity—a course focused on a particular habitat (e.g. wetlands, oceans, forests, grasslands, tundra); Techniques in Conservation—a course focused on policy, related chemical or physical sciences, statistics, modeling, geospatial analysis, or field methods; Field Experience—this can be fulfilled through any field-oriented class (e.g. Stream Health Monitoring Internship, Orphaned Lands Assessment), a field-based independent study with faculty in Environmental Sciences or Biology, a course at a University of Virginia field station (Mountain Lake Biological Station, Blandy Experimental Farm, the Virginia Coastal Reserve LTER), or an internship with a conservation agency that includes field work.

Students who are interested in this Specialization should consult with an advisor who is a faculty of the Environmental Conservation Program, preferably when declaring their major. The EVSC Director of the program is Ms. Deborah Lawrence.

International Study Opportunities

The University of Virginia has a formal undergraduate exchange program of special interest to students in Environmental Sciences with Lancaster University, Lancaster, England. Lancaster University offers a range of courses in the environmental sciences, and is recommended by the UVA Department of Environmental Sciences. Information on the program is available in the International Studies Resource Library, Minor Hall 216. The link for the International Studies Office is www.virginia.edu/iso/. Any student interested in Study Abroad should see Mr. Galloway at least one semester prior to their intended Study Abroad semester. They should bring to the meeting syllabi and other relevant information for the courses of interest.

Majors Professional Development

Majors can gain professional experience in the field of Environmental Sciences in a number of ways through participation in the research or advanced course work in the Department. Each of these experiences will provide insight into how you may want to proceed within the field and each can provide the types of interaction with our faculty that can lead to independent research opportunities, paid research experience, or simply excellent letters of recommendation for career opportunities.

Graduate Course Work
Environmental Sciences courses at the 5000-level can be taken by any well-prepared undergraduate. These courses are considered to be introductory graduate work. These courses can provide valuable advanced training if you are considering graduate school or employment. One would usually take graduate-level courses in the 4th year. Success in these courses can lead to letters of recommendation from your instructor.

**Departmental Seminars and Theses Defenses**

A variety of professional presentations are offered in the Department, and majors are encouraged to attend. Although some of the material presented may be advanced, the types of questions being researched and the research approaches being used should suggest professional skills you may want to develop. The Department Seminar (every Thursday at 3:30-4:30 p.m. in Clark 108) is often given by a visiting scientist from another institution or agency presenting his or her research findings. Our own doctoral students are also required to present their findings in the Department Seminar prior to graduating. Additionally, throughout the year, Doctoral and Masters candidates present and defend their research. These defenses provide in-depth information about progress in the field of environmental sciences and may suggest further study that you may wish to pursue. The Majors Seminar series on Tuesdays 4-5 p.m. in Clark 108 provides a range of information on careers, research, and societal issues related to the environment. Announcements of specific talks are posted in the front of Clark Hall, distributed by e-mail, and listed at [http://www.evsc.virginia.edu/seminars/](http://www.evsc.virginia.edu/seminars/).

**Undergraduate Research**

There are a number of ways majors can gain research experience, including participation in the various programs listed below:

**Distinguished Majors Program**

The Department of Environmental Sciences participates in the College's Distinguished Majors Program designed for highly qualified students with an overall GPA of 3.4 or above. This study plan requires 12 hours of advanced work (6 hours for advanced course work related to the research specialization and 6 hours of Supervised/Thesis Research). These 12 credits may be used toward the EVSC major electives requirement. It is best to begin this program in the early portion of your third year. The project must be completed by the semester you plan to graduate.

For additional information, consult the department web site or contact Mr. Tom Smith (tms9a@virginia.edu). Applications for admission to the program are required no later than October 13, 2015 for a planned graduation for the following May or August, and no later than April 13, 2016 for a planned graduation for the following December. It is best to apply well ahead of these deadlines.

If you expect to have an overall GPA of at least 3.4 upon graduation and are interested in doing a significant research project of your own, you should seriously consider this program. It is usually a 2- or 3-semester effort that involves working with a faculty member of your
choice, developing a research proposal, doing the research and presenting it to a forum of peers and faculty. Please see the faculty member with whom you would like to work and explore the program with them, or contact Mr. Tom Smith, DMP Director, to discuss research.

**Senior Thesis Program**

The senior thesis option is available for all EVSC majors, regardless of GPA. As with the DMP, these students will work with a faculty member to develop a research idea, conduct the research, write a senior thesis, and present/defend this work. Senior thesis students can earn six credits of Supervised/Thesis Research that can count toward the EVSC major elective credit. Interested students should see the faculty member with whom they would like to work and explore the program with them, or contact Mr. Davis or Mr. Galloway to discuss research opportunities.

**Supervised Research and Independent Study**

Supervised Research is not only a component of the Distinguished Majors and Senior Thesis Programs; any EVSC major may conduct supervised research. Supervised Research is an excellent way to learn specific lab or field techniques as part of a faculty member’s research project. Students will use these research methodologies to generate data and analyze and produce results. To become involved, you should contact a faculty member whose area of research is of interest to you. If you simply want to gain lab or field experiences, then seek their advice on how to proceed. If you have your own research topic to propose, then seek their agreement to supervise your project. Such a project would usually involve background reading, data collection or analysis or any set of scientific research components agreed to by you and your supervisor, and a written report on your findings. Some projects may require more than one semester to complete, and some may even lead to publication in scientific journals or presentation at conferences. The experience of completing an undergraduate research project, besides being intellectually rewarding, provides excellent preparation for graduate work. Those who are considering graduate study are strongly encouraged to conduct a Supervised Research project in their third or fourth years.

Independent Study projects are developed in a similar manner, by contacting the faculty member with whom you would like to work. Independent Study projects are not necessarily directly related to ongoing research efforts, but allow students to learn about an interesting and relevant topic (effectively on their own) that may not be specifically offered in our curriculum. This is accomplished typically through reviewing literature, with a variety of on-campus or off-campus experiences, under the supervision of an EVSC faculty member.

**Graduate Mentoring Program**

The undergraduate research mentoring program seeks to connect undergraduate students who are interested in gaining experience with scientific research in the environmental sciences with graduate students who can provide those opportunities. Undergraduate students may either 1) assist a graduate student with an existing research project or 2) develop their own research project under the guidance of a graduate student. Due to the varied nature of student interests, research projects, and graduate student needs there is no single prescribed format
for the research program or the mentor-mentee relationship. The undergraduate student often receives academic credit for their work although volunteering – especially for shorter-term research experiences – and employment are also possible outcomes. For more information, please visit the web site.

**Paid Research Experiences**

Many of the research projects in the Department need various types of skilled student labor during the school year and summer. If you are interested in using or developing a research skill for pay, please contact the faculty member of your choice and explore with them the possibility.

**Summer Research Scholarships**

Some of the research projects in the Department have scholarships for summer research work. Recently these have been through the Long Term Ecological Research (LTER) project and through Blandy Experimental Farm, http://www.evsc.virginia.edu/aboutus/facilities/, although several other programs offer these scholarships occasionally. Watch for notices of availability, or contact the faculty directing these projects occasionally. Watch for notices of availability, or contact the faculty directing these projects occasionally. Watch for notices of availability, or contact the faculty directing these projects occasionally. Watch for notices of availability, or contact the faculty directing these projects occasionally. Watch for notices of availability, or contact the faculty directing these projects occasionally. Watch for notices of availability, or contact the faculty directing these projects occasionally. Watch for notices of availability, or contact the faculty directing these projects occasionally. Watch for notices of availability, or contact the faculty directing these projects occasionally. Watch for notices of availability, or contact the faculty directing these projects occasionally. Watch for notices of availability, or contact the faculty directing these projects occasionally. Watch for notices of availability, or contact the faculty directing these projects occasionally. Watch for notices of availability, or contact the faculty directing these projects occasionally. Watch for notices of availability, or contact the faculty directing these projects occasionally. Watch for notices of availability, or contact the faculty directing these projects occasionally. Watch for notices of availability, or contact the faculty directing these projects occasionally. Watch for notices of availability, or contact the faculty directing these projects occasionally. Watch for notices of availability, or contact the faculty directing these projects occasionally. Watch for notices of availability, or contact the faculty directing these projects occasionally. Watch for notices of availability, or contact the faculty directing these projects occasional...
**The deadline for the current cycle of Small Research and Travel Grants is November 1, 2015 by 4:00 pm.**

Please refer any questions to Sean Reed at rsr4c@virginia.edu.

Additional Research Funding Opportunities

**U.S. Environmental Protection Agency**

The U.S. Environmental Protection Agency (EPA) is offering Greater Research Opportunities Undergraduate Fellowships for bachelor level students in environmentally related fields of study. Eligible students will receive support for their junior and senior years of undergraduate study and for an internship at an EPA facility during the summer between their junior and senior years. For details and application deadlines go to [http://epa.gov/ncer/fellow/](http://epa.gov/ncer/fellow/)

**NSF Research Experiences for Undergraduates**

The NSF Research Experiences for Undergraduates (REU) program supports active research participation by undergraduate students in any of the areas of research funded by the National Science Foundation. REU projects involve students in meaningful ways in ongoing research programs and projects. This solicitation features two mechanisms for support of student research: (1) **REU Sites** are based on independent proposals to initiate and conduct projects that engage a number of students in research. REU Sites may be based in a single discipline or academic department, or on interdisciplinary or multi-department research opportunities with a coherent intellectual theme. Proposals with an international dimension are welcome. A partnership with the Department of Defense supports REU Sites in DoD-relevant research areas. (2) **REU Supplements** may be requested for ongoing NSF-funded research projects or may be included as a component of proposals for new or renewal NSF grants or cooperative agreements.

Undergraduate student participants in either Sites or Supplements must be citizens or permanent residents of the United States or its possessions. More information is available at [http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5517&from=fund](http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=5517&from=fund)

Students may not apply to NSF to participate in REU activities. Students apply directly to REU Sites and should consult the directory of active REU Sites on the Web at [http://www.nsf.gov/crssprgm/reu/reu_search.jsp](http://www.nsf.gov/crssprgm/reu/reu_search.jsp)

**Career and Placement Information**

Our faculty and the Office University Career Services (UCS) are here to help you decide what you want to do and to help you develop the skills needed to seek graduate schools and jobs. It is up to you to do the actual research and succeed in finding what you want.

**Faculty Resources for Placement**
Each of our faculty is available to talk with you and can advise on careers. Each faculty member has an understanding of the placement process in their areas of specialization and may know of specific positions available. You should discuss your career goals and preparation with those faculty in your area of interest and begin to arrange letters of recommendation in the middle of Fall semester for graduate school applications and in the early Spring semester for job applications.

**University Career Services**

UCS is located on the second floor of Bryant Hall at the southeast end of Scott Stadium to the left of the ticket office. The staff at UCS is dedicated to helping students develop their career goals and the tools needed to achieve those goals. More information can be seen at [http://www.career.virginia.edu](http://www.career.virginia.edu) some focused materials have been developed for Environmental Sciences, and you can benefit from reviewing this career information long before you are beginning your job search. UCS can also help focus your search for summer internships as well as for graduate school.

**Extern Program**

This is an excellent opportunity to explore career possibilities. An externship is a short-term job shadowing experience (usually one week). Each extern experience is different depending on your interests, the career field, and the particular sponsor with whom you extern. All externships are unpaid and externs do not earn academic credit. UCS does not place students directly with externship sponsors. However, they do provide you with a list of resources and tips to create your own experience. By initiating your own job shadowing opportunity, you gain valuable job search, resume writing, networking, and interviewing experience [http://www.career.virginia.edu/externship/](http://www.career.virginia.edu/externship/). Download the Externship Guide at [http://career.virginia.edu/jobs-internships/internships/definitions](http://career.virginia.edu/jobs-internships/internships/definitions).

**Environmental Sciences Organization**

The [Environmental Sciences Organization (ESO)](http://www.career.virginia.edu/jobs-internships/internships/definitions) serves as a link between Environmental Science students and faculty, and provides a fun forum for promoting undergraduate involvement in department and environment related activities. Fall and Spring semesters, ESO meetings are held every Tuesday from 5:00 PM to 6:00 PM in Clark 346 (The Odum Room). If you would like to join ESO, please contact the secretary, Angie Kim (ak7ef@virginia.edu) or the 2015 ESO president, Michelle Faggert (maf2dd@virginia.edu). Other officers are Vice President, Kate Ford, Treasurer, Ashlye Allison, and Outreach Coordinator, Alex Harden. Check out the bulletin board in the lobby of Clark Hall for notices of ESO meetings and events. Department long- and short-sleeved t-shirts are available from ESO. The ESO faculty advisor is Tom Biggs (thb3k@virginia.edu).

**ESO's Activities**

The Environmental Sciences Organization (ESO) provides a link between the Environmental Sciences Department and the students of the University. While the organization is mainly geared toward undergraduate majors and minors in the department, it has its share of members from many different disciplines of the University. However, all members have one
thing in common—an interest in the Environmental Sciences. ESO aims to aid students in becoming more involved in and educated about the Environmental Sciences Department. Members are provided with many opportunities to get to know the professors in the department as well as what the department has to offer outside of a major or minor. One of the organization's core components is the aid, advice, and support that members have to offer each other about courses, activities, and resources within the department. ESO is able to do this through its many activities such as peer advising about courses, seminars about the Department and professions in environmental sciences, and career and job search resources. Other enjoyable activities sponsored by ESO include the department barbecue, hiking trips, canoe trips, whitewater rafting, and a variety of fun outdoor activities. All University students are welcome to join and participate in any activity. 
https://atuva.student.virginia.edu/organization/environmentalsciencesorganization.

End-of-the-Year Announcements

Departmental Awards Ceremony and Reception
The annual Departmental Award and Recognition Ceremony will be held on Wednesday, May 4, 2016 at 4:00 p.m. in Clark Hall 108. The undergraduate awards to be presented include the Wallace-Poole Award for the outstanding major and additional awards for each area of the department. The Distinguished Major levels will be announced, and the Grant Goodell Award for most outstanding interdisciplinary thesis will be given. We urge you to attend this event.

The Environmental Science Graduation Ceremony
The Department of Environmental Sciences will honor graduating majors in Clark Hall, after the University's Commencement Exercise on Saturday, May 21, 2016. Graduating majors will be contacted with further details.

Conclusion
You will get the most benefit from your experience as an Environmental Sciences major if you engage with the faculty, graduate students, and other undergraduate students in taking advantage of the broad range of academic, professional, and social activities in the Department. Please get to know your advisor, your professors, your teaching assistants, your research colleagues, and your fellow students. If you need any more information about your chosen field of study or about our program, please ask any member of the Department.