Good Luck To Diane Dittrick!

After 21 years of teaching and inspiring students at Barnard, Diane Dittrick is leaving the department. We wish her all the best as she embarks on the next phase or her career!

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Diane Dittrick, Laboratory Director Emerita, aboard the R/V Seawolf
Photo by Jorge Colombo
Diane started out her career in professional level science book publishing before making the not-so-far jump to academia when she began teaching in the Biology Department at Pace University. A few years later, in 1993, Diane joined the Biology Department at Barnard. And in 1996, the Environmental Science Department got a lucky break when Diane transferred departments. Diane’s 18 years in the Environmental Science Department have seen her develop into the instructor that we all have grown to love. By teaching all of her courses with great enthusiasm for sustainable and environmental stewardship, leadership development, and team-building it comes at no surprise that Diane was nominated for the Emily Gregory Award in 2007. In addition to directing and teaching the introductory lab, Diane developed a one-of-a-kind seminar in Environmental Leadership, Ethics and Action, as well as an upper-level undergraduate Sustainable Development Workshop taught at Columbia. This last semester Diane launched an Introduction to environmental science course at the NYU Polytechnic School of Engineering. There is no doubt she will continue to use her passion and enthusiasm to continue making contributions to society wherever her next steps take her. Diane will be greatly missed, but wherever she ends up next will certainly be better off!
Ida H. Ogilvie (1874-1963) Worked at Barnard from 1902 to 1941. She was the Department of Geology’s first professor teaching classes in geology, geography, and mineralogy. Ida headed the department from 1911 until her retirement 30 years later. Throughout her career, she was one of the few women scientists consistently included in the periodic listings in the misleadingly entitled *American Men of Science* (1906, 1910, 1921). She came from a wealthy New York family that traced its American ancestry to the Mayflower. Prepared at the Brearley School, she majored in geology and zoology at Bryn Mawr, spending her college summers at the Marine Laboratory at Woods Hole, Massachusetts, from which she graduated in 1900. From there she proceeded to Columbia, earning her PhD in 1903, the year after she joined the Barnard faculty as a lecturer. During World War I, she headed up Barnard’s Women’s Land Army Initiative which put Barnard students to work on the Women’s Agricultural Camp in Bedford, New York. Her most notable investigations were along the lines of past glaciation of the continent and volcanic activities. She became a daring and intrepid explorer breaking the trail in the Canadian Rockies, north of the line of the railway. She added to her distinctions that of a formidable and indefatigable mountain climber. Along with her colleague the chemist Marie Reimer, Ogilvie personified science at its most intellectually demanding and life-encompassing to generations of Barnard students.
Expanding the Boundaries of the Classroom:
Workshop in Sustainable Development

Students address real-world issues in sustainable development by working in groups for an non-for-profit external client agency. Two teams were established this past semester to work with Steve Spayd from the NJ Department of Environmental Protection and Dan Walsh from the NYC Office of Environmental Remediation. This project-based course provides hands on experience in communication, collaboration, and management while working towards real solutions for their clients. Through research, report writing, and meetings with and presentations to clients and the academic community, students have a true consulting experience.

Mitigating Arsenic in New Jersey Well Water

Over the course of the semester, the Arsenic Treatment Methods Video Production Team has been working with Dr. Steve Spayd New Jersey Department of Environmental Protection to produce a short film informing New Jersey homeowners of the treatment methods available to them to remediate arsenic contamination in private wells. In the film, which will be available on the New Jersey Arsenic Awareness Initiative's website next semester, point-of-entry systems are compared to point-of-use systems including the benefits, maintenance, and cost of each. The project was a continuation of work done by students in previous semesters who had created an informational website for the initiative and produced videos on the issue of arsenic contamination and how to get a well tested for arsenic.

Benefits of Brownfield Cleanup and Redevelopment

The second workshop team did a pilot study evaluating the societal benefits of brownfield cleanup and redevelopment for their client, Dan Walsh, the Director of NYC’s Office of Environmental Remediation. The team took on the question of short-term environmental, social, and economic effects of the redevelopment sites by gaining background knowledge on the topic at large, before taking a more focused look at three sites in New York City. Sites in the South Bronx and Manhattan were chosen based upon history, community demographics and statistics. For the next step, a brownfield redevelopment site was chosen near campus at 125th street. The team surveyed local residents about changes to the community and their quality of life post-redevelopment. The team presented several conclusions to their client, including that future studies will need to address the differences between residential and commercial areas, and have greater communication with developers and community leaders in order to get a complete and representative picture of change.
Thursday Coffee Breaks

This semester the department introduced a Thursday brown bag series as a way to foster community among our majors. Each week coffee and snack were served along with a new topic!

This semester’s topics included:

- How to write a resume for applications
- What makes for a good letter of recommendation?
- Environmental science careers
- The Intersectionality of Environmental Science and Sustainability
- Carbon Sequestration in Iceland
- The Intergovernmental Panel on Climate Change

Emerging Research Questions in the Arctic

Stephanie Pfirman, co-chair of the department, is featured in this short film about her National Science Academy committee report on the emerging research questions in the arctic entitled “The Arctic in the Anthropocene*.” This report is the first published by the Academy with the word “Anthropocene” in its title and only the second to mention it. It is currently in the top 4% of most downloaded Academy reports. A crossword will be released this week at the American Geophysical Fall Meeting with clues based upon the report.

Click here to watch!

*Anthropocene—The current geologic time period viewed as the period during in which human activity has been the dominant influence on climate and the environment.
Catherine Cook ’86, Administrative Assistant, celebrates her silver anniversary this year! Her 25 years of employment started three years after graduating from Barnard in ’86 as an English major. In 1989, she became the Assistant to the Dean of Studies, advising students and faculty on academic policy matters. In March of 2000, Catherine joined us as Administrative Assistant to the Environmental Science Department. While working here, Catherine has done graduate work in the French Comparative Literature program, fiction and non-fiction writing workshops at Columbia, and was adviser to the equestrian team. Outside Barnard, she produced a performance series entitled “The Folio Club” at Steve Mass’ (Mudd Club) french bistro and other related performance art projects and dedicated herself as an activist to political and labor issues. In 1999, she was the only graduate student to present work at the Simone Weil conference at Columbia, organized by Sylvère Lotringer, her mentor, and was seated on a panel with the former Minister of the Environment of France. In 2001, she took a few months leave to work as a union organizer for the UAW where she organized graduate employees at NYU and Brown, public school educators and auto workers in Stamford, CT. In 2009, she had her daughter, Cerentha, who stops by from time to time. Congratulations Catherine!
Brian Mailloux to Teach Programing Course

**Big Data with Python: Python for Environmental Analysis and Visualization**

Surveys of recent graduates have consistently shown that they wished they had taken a course in programming while at Barnard. Unfortunately, students have been reluctant to take a course at Columbia especially because they fail to see the real world applications and its direct relationship to environmental science. Starting the spring semester Professor Brian Mailloux will be offering a course that will teach students how to code, analyze, visualize, and present data sets of any size and complexity using Python. The course will accomplish this through case studies including comparing climate data from Central Park to other cities around the world, bacterial transport distances, and analyzing 50,000 arsenic measurement from Bangladesh.

Environmental Science Alumnae Panel

The Environmental Science Department, along with Career Services, held the first STEM career panel of the semester on October 21st. The event filled the room with students, eager to determine what they would do with their Degree in Environmental Science after graduation. Present were Samantha Garvin ’12 of Columbia’s International Research Institute for Climate and Society, Sara Donatich ’13, Staff Scientist at Langan Engineering and Environmental Services, and Kay Zias ’81, NYC Parks Director of Environmental Remediation, who shared their experiences of life since graduating from Barnard and answered questions like champions!

Samantha, Sara, and Kay (L-R)
In November, Barnard hosted SENCER and Teaching with Technology MidAtlantic Regional Conference, the biannual meeting of Science Education for New Civic Engagements and Responsibilities (SENCER). Hosted on behalf of the College by Prof. Peter Bower, senior lecturer in environmental science, the two-day event gathered faculty from colleges and universities nationwide to hear about the latest developments in STEM, the changing landscape of teaching these disciplines, and how to leverage technology to engage students through timely civic questions.

The conference featured a broad spectrum of STEM-based projects, including Brownfield Action, an innovative course that Prof. Bower developed in collaboration with SENCER in 2003. The course, which addresses the circumstances and issues of over half a million brownfield sites in the United States, Brownfield Action provides Barnard students with complex environmental situations, giving them opportunities for unscripted problem-solving, critical thinking, and leadership development. It has also been reproduced for CUNY students as a hybrid online course. In addition to an update about this initiative led by Prof. Bower, many discussions and demonstrations on SENCER initiatives took place throughout the conference, including:

- Prof. Anindita Ghosh of Suffolk Community College described her "Better with Buttons" strategies using online simulations to assist student in understanding the critical elements in physics, developing and carrying out a plan for solving problems, and reflecting on the feasibility.

- Prof. Eugene Galperin of East Stroudsburg University explained his use of Pearson's MyMathLab for structuring online homework, quizzes and homework assignments that apply math principles to meaningful questions.

- Prof. Esther Wilder and Frank Wang, both of CUNY, described their “Numeracy Infusion Course for Higher Education” project, an online resource that connects instructors with teaching materials, as well as teacher training for summer courses.

- College of Staten Island Prof. Herb Schanker presented an introduction to his recent project, “TechEP – An Emerging Model of Curricular Integration,” which provides resources to make technology ubiquitous, engaging and relevant in the classroom.

- Prof. Donatello Delfino and Prof. Godfrey Roberts of NYU discussed the challenges and opportunities afforded by teaching online courses, which can effectively reinforce content throughout the week when face-to-face meetings are less frequent.

- US Military Academy students Frank Wattenberg and Ben Minden presented their plan to provide middle school students with tools to make and fly their own drones.
• Eugene Lang School Prof. Katayoun Chamany discussed his work with information designers to create a graphic to represent stem cells, their origins, and their development.

• Barnard Prof. Joseph Liddicoat also discussed applications of graphics, specifically his fully online course version of “Brownfield Action” as well as his “Planets, Stars and Life” online course, both of which promote problem solving and generate critical thinking and cognitive skills.

• NYU Prof. Trace Jordan reviewed the SENCER Student Assessment of Learning Gains tool, which he has found is very helpful in identifying improvements to his own courses and research on his teaching.

The MidAtlantic Regional SENCER Center for Innovation's biannual conferences allow seasoned SENCER practitioners and newly interested faculty come together to hear nationally renowned teacher-scholars and to share their own ideas and experiences in teaching STEM discipline courses through timely civic questions. Topics presented and discussed include the reform of undergraduate STEM education, assessment of teaching and learning, opportunities for community college articulation, efforts to coordinate a Consortium for Assessment of Student Achievement, and informal science education arenas, as well as pre-kindergarten through 12th grade STEM education with programs for pre-service teachers.
Dr. Terryanne Maenza-Gmelch Bolsters Application to Designate Black Rock Forest as an Audubon “Important Bird Area”

Black Rock Forest is home to roughly 160 bird species, both resident and migratory, and is an essential resource for many breeding birds. In 2012 and 2013, Barnard College ecologist Terryanne Maenza-Gmelch and her students, with assistance from Consortium staff, conducted surveys in the Forest to construct seasonal bird inventories and examine the relationship between bird diversity and habitat structure. The Consortium coordinated these results with surveys from Schunnemunk Mountain State Park and lands in the Black Rock Forest-Schunnemunk corridor. Collaborators were the Orange County Land Trust and the Mearns Bird Club. Together, an application to nominate this connectivity area as an Audubon “Important Bird Area” (IBA) was prepared.

The IBA designation would establish the Black Rock Forest region as an important place for the conservation of threatened bird species, including the cerulean warbler (*Dendroica cerulea*, severely at risk in New York state), worm-eating warbler (*Helmitheros vermivorus*, highly at risk), and the wood thrush (*Hylocichla mustelina*), blue-winged warbler (*Vermivora cyanoptera*) and prairie warbler (*Setophaga discolor*), all at risk in New York state.

Black Rock Forest has a community of birds that represent a “Responsibility Species Assemblage,” forest birds that New York State has a responsibility for conserving over the long term. For Black Rock, a deciduous forest, the assemblage includes the sharp-shinned hawk, northern flicker, eastern wood-pewee, least flycatcher, yellow-throated vireo, blue-gray gnatcatcher, black-throated blue warbler, black and white warbler, Louisiana waterthrush, scarlet tanager and the rose-breasted grosbeak.

Senior Lecturer Terryanne Maenza-Gmelch has created the content for the Black Rock Forest’s bird webpage, complete with a "Listen to the Forest" button loaded with bird and habitat recordings she made with colleagues at Cornell’s Laboratory of Ornithology.
Keyanna Millinger ’14
Botanist and Environmentalist

Keyanna, an Environmental Policy major, has nurtured her love for plants while at Barnard. Starting her first year, Keyanna has worked in Barnard College’s Arthur Ross Greenhouse. When not in the greenhouse, plants have been part of her everyday life through her class work, and most recently her Senior Thesis entitled “The effects of tree identity and land use history on microbial communities in Puerto Rico.” Keyanna hopes to make urban spaces greener after graduation.

Watch her story here!

Tsechu Dolma ’13 is one of six 2014 Brower Youth Award Winners

During a visit to her homeland, Nepal, as an ethnographic research assistant, Tsechu Dolma learned that the villagers of Geling, in the Upper Mustang region, were worried about how erratic weather patterns brought on by climate change were impacting their food and water security. When Dolma returned to the US, she consulted with Nepalese expats and academics on how to help make Geling villagers, who are mostly subsistence farmers, climate resilient.

With funds from the Rubin Foundation and Columbia University, Dolma went back to Nepal to study the success and failures of past development projects. Based on her findings, Dolma proposed building a community greenhouse with locally sourced material. The villagers unanimously supported the idea. Dolma had also learned that Nepal’s decade-long civil war and environmental degradation had made village youth feel that they had no future. She proposed that the greenhouse be built in a school so that it would provide a platform for intergenerational sharing and collaboration. Dolma hopes the Geling greenhouse will serve as a model of climate resiliency and local ownership in rural communities worldwide.

If you are interested in directly supporting our students’ research projects please contact Beth Mauro in the Development Office at bethmauro@barnard.edu or by calling 212-870-2535.
Environmental Conservation and Management

A field trip to the Anaconda Company April 1965. Group includes Barnard, Columbia College, and Graduate Students.

Photo Credit Paul Rubenstien, Lenox Studios Photography

From the Archives

Do you have photos we can add to our collection? Email them with a brief description to LRaucher@barnard.edu