

# Department of Environmental Science

Barnard College



## A Note from Stephanie Pfirman on her Retirement

*Looking back on my 25 years at Barnard, it's hard to believe that it has been so long. Each year brought new challenges and opportunities and the fun of working on them with great faculty and terrific students. With Columbia as our collaborators, NYC in our front yard and the Hudson at our back, Barnard – and the Environmental Science Department in particular – is perfectly positioned. One of the things that I appreciate most about my time with you all is how we connected our research with our teaching and other activities. While I'm sorry to not be interacting with you all on a day-to-day basis, I take with me the can-do spirit that we built together.*

*I wish you all the best as you take on new challenges and explore new opportunities in your coursework, the Department, the College, and beyond.*

*Sincerely,  
Stephanie Pfirman*

Stephanie is now Senior Sustainability Scientist at the Julie Ann Wrigley Global Institute of Sustainability and a Professor in the School of Sustainability at Arizona State University. She can be reached at [spfirman@asu.edu](mailto:spfirman@asu.edu).

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## A Warm Welcome to Dr. Christian Braneon

This year we are very lucky to welcome Dr. Christian Braneon as a Term Professor!

Christian Braneon serves as a Remote Sensing Specialist at the NASA Goddard Institute for Space Studies (GISS) where he provides technical expertise with a specialty in remote sensing and climate impacts assessment. His current work there is focused on integrating the agency's satellite imagery and projections of extreme weather events into urban planning.

He previously served as faculty at the Georgia Institute of Technology (Georgia Tech) where he was the Assistant Director of the Center for Serve-Learn-Sustain.

Prior to joining Georgia Tech, Christian served as a Physical Scientist and Co-Director of the United States Environmental Protection Agency's inaugural Environmental Justice Academy for community leaders.

Christian will be teaching the Workshop in Sustainable Development, Environmental Data Analysis, Hydrology and Senior Seminar this year. Last year Christian co-taught Agricultural and Urban Land Use with Cynthia Rosenzweig.



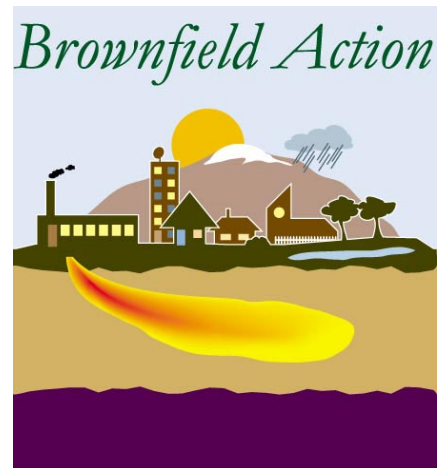
## Winner Announced for the First Annual Magnolia Flowering Date Poll

Thank you to all who participated in our first annual poll to guess the First Flowering Date of the Magnolia Tree! With the help of Nick Gershberg, the Greenhouse Coordinator, the date was established as April 13th, 2018. The Price is Right Rule was used to declare current student, Sarah Kravinsky '18 the winner. The prize was a tote bag with a hand painted magnolia flower. Don't forget to follow the Magnolia on Instagram (@TheOfficialBarnardMagnolia) throughout the year!



## Brownfield Action Gets Much Needed Update

With a \$20k grant from the college, Peter Bower is keeping Brownfield Action alive with a much needed upgrade. Brownfield Action, originally a card-based board game, was developed for the web in 1999 using Adobe Flash. In 2020 Flash will no longer be supported by Adobe and blocked by all major internet browsers. The simulation, which allows students to explore and solve real world contaminations issues in a fictional community will be converted to HTML5 and be given a more modern design. Students will now be able to access the program on their computers and tablets as they learn to produce professional level environmental site assessments.



## Sedelia Rodriguez's Research Paper Ranked Top 25 in 2017

Professor Sedelia Rodriguez's paper "Global Nickel Anomaly Links Siberian Traps Eruption and the Latest Permian Mass Extinction" was ranked in the top 25 Earth Science papers published in Nature: Scientific Reports. The paper links volcanic activity in Siberia to the Great Permian Extinction which resulted in the loss of 70% of land species and 95% of marine species 252 million years ago. Eva Baransky '17, who worked with Professor Rodriguez on the project, is one of the co-authors.

## Is There Lead in Your Back Yard?

***Would you like to have your back yard soil tested for lead? Send us your soil!***

The Mailloux Soil Lab is accepting back yard samples. Simply mail us half a sandwich baggy worth of your back yard soil for lead analysis\* and we'll send you your results. Please include a self-addressed envelope or an email address. All results will be kept confidential.



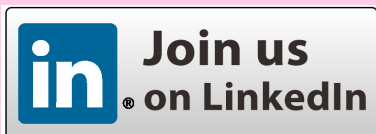
Mailloux Soil Lab  
Barnard College  
Environmental Science  
3009 Broadway  
New York, NY 10027

\*Tips for collecting a good sample:  
Select a one square foot area to sample. Remove any debris from the surface (woodchips, leaves, etc.) and collect the top layer of soil.



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Or Search:

“Barnard College  
Environmental  
Science Alumnae”

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@TheOfficialBarnardMagnolia

## Brian Mailloux Awarded Barnard’s Top Research Award

Professor Brian Mailloux, Co-Chair of the department, has been awarded the Tow Professorship for Distinguished Scholars and Practitioners. The Tow Professorship honors faculty who have made substantial nationally recognized contributions in their field. Brian said that he is “honored to have been given this award and am pleasantly surprised by the wide range of projects that the Tow foundation supports.”

This is the top research award granted to faculty by the College. Brian, a geomicrobiologist, has spent many years researching arsenic release from sediments to water in aquifer systems. He has worked around the world but has focused his research most recently in Bangladesh. He has often included students in his work and has published papers with two students as co-authors in the last year alone. He has recently received renewal funding from the National Institute of Environmental Health Sciences for a collaborative research project entitled “Health Effects and Geochemistry of Arsenic and Manganese.”



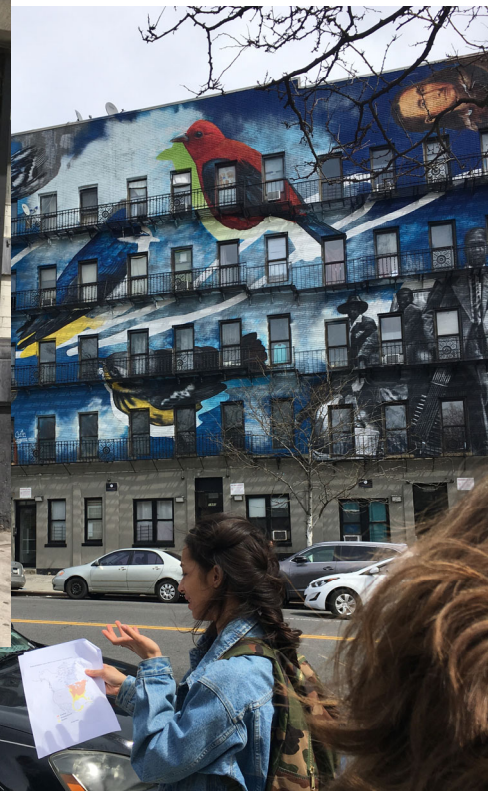
**Top row:** Barnard President Sian Beilock, Professor Brian Mailloux, Eileen Wisemasn - Director of Strategic Initiatives for the Tow Foundation, History Professor Mark Carnes. **Seated:** Leonard Tow - Founder and Chairman of the Tow Foundation

## Art, Birds, and Climate Change in Hamilton Heights

The Environmental Science Department's Bird, Plant and Land-use Dynamics class, taught by Ter-ryanne Maenza-Gmelch, toured part of the Audubon Mural Project in Hamilton Heights, NYC. This project was established to draw attention to climate change using climate-threatened birds as the subjects of the murals. There are currently 101 murals painted of the 314 North American birds predicted to be impacted by changes to their habitat range. You can learn more about the project at <http://www.audubon.org/amp>

The artwork launched a class discussion about the ecology of the selected birds. Each student was assigned a bird to research, prepare an information sheet on and present in front of the corresponding mural.

Audubon has published a report outlining the consequences of shifting and shrinking habitat ranges. "Audubon scientists have used hundreds of thousands of citizen-science observations and sophisticated climate models to predict how birds in the U.S. and Canada will react to climate change...It's the broadest and most detailed study of its kind, and it's the closest thing we have to a field guide for the *future* of North American birds."





## 2017 - 2018 Senior Theses

**Akter, Afsana:** Groundwater Chemistry of Deep Wells in Araihasar, Bangladesh

**Berg, Zoe:** Response of *Noctiluca scintillans* to Increasing Atmospheric CO<sub>2</sub> in the Arabian Sea

**Cushman, Grace:** Catastrophic Iceberg Discharge Events in the Labrador Sea: Heinrich Layers During the Last Glacial Period

**Hayashi, Lauren:** Coinfection Dynamics of the Agents of Lyme Disease and Babesiosis

**King, Anuka:** Economic Feasibility of on-site Biofuel Recovery From Daily Organic Waste Streams in a Developed Urban Region

**Livingston, Lila:** The Trump Administration's Review of National Monuments: A Critical Moment for Utah's Bears Ears

**MacGillivray Wallace, Madeleine:** Abundance and Source Tracking of Phytoplankton and Microbeads off the Korean Peninsula in the Yellow Sea

**Max, Sage:** Effects of Online Media Framing on American Meat Consumption Habits

**Merrill, Ella:** Discriminating Urban and Agricultural Sources of Herbicide Glyphosate in the Indian River Lagoon, Florida

**Metzger, Emy:** The Effects of Bracket Material on the Accuracy of Electronic Dendrometer Devices

**Olojo, Oluwaseyi:** An Exploratory Analysis of Infant Mortality Rate Integration in Social Vulnerability Assessments for Drought-Afflicted Mexico

**Precht, Chandler:** Radiocarbon Analysis of RNA Collected from Pleistocene Aquifers in Bangladesh

**Santana, Nathaly:** Hydraulic Fracturing: Subsurface Transport of Water Contamination

**Ticknor-Swanson, Persis:** Light Stimulated Mixotrophy in the Marine Cyanobacteria *Prochlorococcus*

**Van Deusen, Vanessa:** A Next Generation Sequencing Approach to Green Crab (*Carcinus maenas*) Diet Analysis in the Gulf of Maine

**Our graduates make great employees!**

**Feel free to let us know anytime you have an opening in your workplace.**

## Celebrating our Graduates!



## From the Archives

1998— Stephanie Pfirman cutting the ribbon on our new departmental offices in Altschul Hall.



Left to Right: Provost Liz Boylan, Diana Dittrick, Peter Bower, Stephanie Pfirman, President Judith Shapiro, Yee Yip

**Do you have photos we can add to our collection?**  
Email them to [LRaucher@barnard.edu](mailto:LRaucher@barnard.edu)

If you are interested in directly supporting our students' research projects please contact Gary Carskaddan in the Development Office at [gcarskad@barnard.edu](mailto:gcarskad@barnard.edu) or by calling [212-870-2573](tel:212-870-2573).