

PEI *CURRENTS* - Winter 2014



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Note from the Director

Dear Friends,

Welcome to our new, fully-electronic winter newsletter, **PEI *CURRENTS***. We hope you find it refreshing and informative.

Our goal is to share a sampling of exciting developments in environmental research and teaching at Princeton including updates from our PEI research centers and news about the many pursuits and accomplishments of our PEI associated faculty, students, and alumni.

This issue focuses on recent advances in the understanding of terrestrial ecosystems which are under increasing pressure from climate change and air and water pollution. These ecosystems, although they occupy only 28% of the Earth's surface, absorb a significant fraction of the carbon released into the atmosphere. [New research results](#) reported here highlight just how important this absorption of carbon is to keeping the planet cooler.

Undergraduates in our Environmental Studies Program now have many [specialist tracks](#) to choose from, all of which touch upon the importance of



In addition to this bi-annual magazine, we also provide regular [PEI updates](#) throughout the academic year featuring current

sound terrestrial ecosystem stewardship. Students continue to take advantage of our extensive internship program. This past summer ninety-seven (97) Princeton undergraduates held [environmental assignments](#) in positions with faculty-led research projects and as interns with NGOs, government, industry, and academic enterprises around the globe. We highlight two who spent their summer exploring how [agricultural nitrogen pollution](#) influences ground and stream waters that drain from the Mississippi River.

[news, events, and graduate and undergraduate opportunities.](#)

Princeton alumni are also tackling issues of climate change and land use. This fall, we reached out to [Candice Chow '09](#), who graduated from the Woodrow Wilson School with a Certificate in Environmental Studies to learn about her current job at the Environmental Defense Fund where she is working at the intersection of agriculture, poverty alleviation, and climate change.

These are just a few examples of research and educational endeavors underway at PEI. Much more is available on our [website](#) including announcements about forthcoming events, award opportunities, and faculty searches. Please peruse at your leisure and stay-tuned for our summer edition of **PEI CURRENTS**.

Best wishes for a healthy and productive 2014.

Steve Pacala

Director, Princeton Environmental Institute

The Earth Without Plants

by Morgan Kelly, Office of Communications



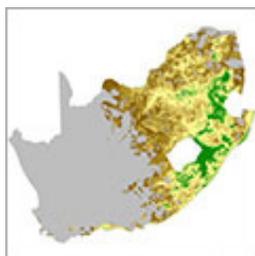
Enhanced growth of Earth's leafy greens during the 20th century has significantly slowed the planet's transition to being red-hot, according to the first study to specify the extent to which plants have prevented climate change since pre-industrial times. Through their research, Steve Pacala, director of PEI and co-director of the Carbon Mitigation

Initiative, and his colleague Elena Shevliakova found that land ecosystems have kept the planet cooler by absorbing billions of tons of carbon, especially during the past 60 years.

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Crops Under Climate Change

by Morgan Kelly, Office of Communications



The damage scientists expect climate change to do to crop yields can differ greatly depending on which type of model was used to make those projections, according to research funded by the Grand Challenges Program. The results were recently published in *Global Change Biology*. The problem is that the most dire scenarios can loom large in the minds of the public and policymakers, yet neither audience is usually aware of how the model itself influenced the outcome, said Lyndon Estes, first author and associate research scholar in the Program in Science, Technology and Environmental Policy.

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Mississippi Internships

by Nick DiUlio for the Princeton Environmental Institute

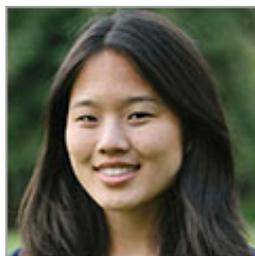


When Devika Balachandran '14 and David Hoyos '16 arrived in Mississippi last June to embark upon an eight-week-long internship, the two Princeton University undergraduates did not know each other — but that was about to change. Balachandran and Hoyos worked alongside one another in a summer research project designed to better understand an ecological quandary: how agricultural nitrogen pollution influences ground and stream waters that drain into the Mississippi River.

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Career in Food and Agriculture

by Nick DiUlio for the Princeton Environmental Institute



For Princeton students interested in the environment, the diverse world of environmental studies can encompass a variety of intersecting passions. For Candice Chow-Gamboa '09, that intersection was sustainable agriculture and global poverty. “The impetus for my career path is the issue of how to feed the world without depleting its resources, and I discovered how those two things work together during my time at Princeton as an undergraduate,” said Chow-Gamboa, a

Woodrow Wilson School major who graduated in 2009 with a Certificate in Environmental Studies.

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Summer of Learning

by Holly Welles, the Princeton Environmental Institute



On October 4, 2013, the Princeton Environmental Institute (PEI) held its sixth annual Summer of Learning (SOL) Symposium. The Symposium was the culminating event for Princeton undergraduates whose summer experiences focused on scientific, technical, policy, and human dimensions of global environmental challenges in energy and climate, sustainable development, resource conservation, biological diversity, and ecological health around the world. This past summer, 97 participating students travelled to destinations in the United States and to 22 foreign nations on assignments with faculty-led research projects, academic institutions, NGOs, and government and community service enterprises.

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Into the Wild

by Jamie Saxon, Office of Communications



In the summer of 2014, 15 undergraduate students had the unique opportunity to join with 5 Kenyan students to participate in a Princeton Institute for International Affairs (PIIRS) Global Seminar in Kenya where they trained in digital video production, screenwriting, and editing. This collaborative effort was co-sponsored by the Princeton Atelier, the Princeton Environmental Institute, and the Lewis Center's Program in Visual Arts culminating in the production of five films that capture environmental themes featuring the work of Princeton faculty and students. The films included: [The Matriarch](#) ; [Curse of the Gazelle King](#) ; [Nature's Nurturers](#) ; [Realignments](#) ; and [The Lost Boys of Laikipia](#) .

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Research Center News

- [Center for BioComplexity](#)
- [Cooperative Institute for Climate Science](#)
- [Carbon Mitigation Initiative](#)
- [Grand Challenges](#)

Faculty Searches

- [Assistant Professorship in Civil and Environmental Engineering and Princeton Environmental Institute](#)
- [The Thomas A. and Currie C. Barron Family Professorship in Humanities and the Environment](#)

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