

# Smith College

## ENVIRONMENTAL SCIENCE AND POLICY

### SPRING NEWSLETTER



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#### THE ENVIRONMENTAL SCIENCE & POLICY PROGRAM:

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## China and the Environment

China is a rising player in the global political and environmental arena, which makes understanding environmental conditions in China crucial. And although China is located across the Pacific Ocean and seemingly far away, the condition of its natural environment and the American way of life are strongly related. Inspired by the newly established course "Environment and Society in Contemporary China" taught by Professor Daniel Gardner in the East Asian Studies Program, a group of students in the Chinese Interregional Student Cultural Organization (CISCO) worked together to organize a lecture and put together a poster exhibit aimed at raising awareness about the interconnectedness of Chinese and American environments.

At the lecture, retired Smith psychology professor George Robinson and philosophy professor Janice Moulton spoke about environmental challenges and recent initiatives undertaken by the government and NGOs in China through the lens of their own experience during recent visits to China. The audience was appalled by an image of traffic congestion during rush hour on an 18-lane road in Beijing, but impressed to hear about high-speed rail, which, with a speed of 356 km/h, brought the speakers from Shanghai to Hangzhou in 30 minutes. A network of high-speed rail to connect big and medium-sized cities in China is under rapid construction. The new network will increase the capacity of public transportation in China and reduce the need for flights and private cars. A highlight of the lecture was the discussion of the ubiquitous use of rooftop solar water heaters by Chinese families. A family-style solar water heater costs about \$300. Savings in electricity and natural gas make the payback for the unit less than two years.



Supported by Smith's new Center for the Environment, Ecological Design and Sustainability (CEEDS), the five students designed a poster exhibit "Uneasy Bedfellows: Environmental Consequences of the U.S.-China Entanglement". The exhibit focused on how pollution in China influences environmental quality in America and conversely, how American lifestyle choices contribute to environmental problems in China. When searching for information, the students were surprised at what they discovered. During her research, Fu Ji ('14), came across connections between the production of everyday items like Levi's jeans, iPhones and Carlsberg beer, and serious environmental damage and human rights issues in China.

One example is a series of 12 Foxconn Technology Group worker suicides in 2010 due to poor working conditions, long working hours and stress. Foxconn is the world's largest producer of electronic components and a big supplier for Apple. Wei Xin ('13) was surprised to discover that 60% to 80% of the electronics collected for recycling in the U.S. are sent to developing countries like China for recovery despite limited domestic laws that prohibit the export of cathode ray tubes. In China and in the U.S., e-waste dealers regularly ignore laws that prohibit the export/import of such hazardous waste because local environmental protection agencies lack enforcement capability. Students from CISCO engaged in lively discussion with all who attended the exhibit opening in CEEDS. The poster exhibit was displayed in CEEDS and then in the McConnell Hall Foyer Gallery between February 28 and March 13, 2011.

-Wei Xin '13

## Director's Corner: Integrating Environmental Science *and* Policy.

The scientific evidence in support of human-induced climate change is overwhelming. Atmospheric levels of greenhouse gases have increased dramatically since the Industrial Revolution began. These gases trap heat radiating from Earth's surface and, as a consequence, *average* global temperatures have increased by 1.3°F since 1900 and are projected to increase another 2-10°F by century's end. This increase may not sound like much, but the associated ecological, social, and economic consequences range from serious to catastrophic, depending on where we fall along this temperature spectrum. Why then, do we hear members of Congress continue to argue that climate change is a hoax? Why do the majority of elected officials, who acknowledge that climate change is real, not move swiftly to enact policies to slow greenhouse gas emissions?

The short answer is that *sound science is necessary but not sufficient*. As a scientist, I was taken aback when I heard these words spoken at a meeting a decade ago. That same speaker followed up with four more points. First, *all sides* can apply the law. Second, the essential ingredient is *politics*. Third, *extractive industries* (e.g., oil, coal, natural gas, mining) are *politically* powerful, and fourth, without *political will*, science won't help. None of this, I am sure, is news to my colleagues in the social sciences. At the same time, they and their students may feel they lack the expertise to explain the science of climate change.



Photo by Michael S. Gordon,  
The Republican newspaper.

How then do we train young scientists to understand the policy-making process and politics? How do we improve scientific literacy in our future policy makers and business leaders? Better yet, can we educate students to be equally conversant in both science and policy? Integration of discipline-specific knowledge and approaches is central to the new major in Environmental Science and Policy.

This spring, students and faculty in ES&P have had opportunities to see integrative approaches on display and in action. The program successfully completed a search for a two-year Mellon postdoctoral fellow in ES&P. An impressive group of interviewees, all with interdisciplinary degrees, showcased work that spanned the humanities, natural and social sciences. We are pleased that Dr. Julianne Mills, an ecological economist, will join our program and teach *Environmental Integration II: Collecting and Analyzing Information* this fall. The ES&P Program also hosted Glenn Prickett from The Nature Conservancy (TNC) as a Woodrow Wilson Visiting Fellow. Glenn met with a number of classes and gave an all-campus lecture describing TNC's efforts to reinvigorate citizen support for the environment, promote the value of ecosystem services, and engage more effectively with the U.S. political system to move important environmental policies forward. Our program's goal is to see majors in ES&P (now 40+ students!) in similar roles in the near future, using their knowledge to address critical environmental problems.

—L. David Smith, Director,  
Environmental Science and Policy Program

## Student Spotlight: Suzannah Longval, '11

Suzannah Longval, a senior from Ashfield, MA, recently decided to double major in both environmental science and policy (ES&P) and sociology. Ever since high school Suzannah has been passionate about the environment—She states, “I wanted to dedicate my time and energy to educating myself and others on the wonderful things the environment does for humans but also on the issues the natural world is facing due to the constant pressure the human population is placing on it”. She arrived at Smith hoping to focus her studies on the environment, but at that time there was no ES&P major, and the challenges of pulling together a self-designed major forced her to settle for a minor.

Suzannah was ecstatic to hear about the newly developed ES&P major this fall. She likes that the Program has created a very interdisciplinary course of study; Suzannah is able to take many classes that bridge the central concepts of sociology and environmental science. On that point she states, “anyone majoring in ES&P is very well-rounded and has a good grasp of both natural science and social science, as well as mathematics in some cases.”

Suzannah continues to have a broad interest in issues related to the environment. At the moment, she is most interested in sustainable architecture in urban development, the many issues surrounding food and water (wetland conversion for the production of crop, organics and GMOs, water consumption, water pollution, etc.), the prevalence of toxins that are harmful to the environment and human health in household products and cosmetics, and how policy currently works and the ways it needs to change in relation to the above topics. For her senior seminar capstone project, Suzannah is creating a restoration

plan for a piece of pastureland that was recently cleared at Smith’s MacLeish Field Station in Whately, MA. The area had become overgrown with grapevine-strangled trees. Her restoration plan is focused on introducing and sustaining the growth of specific native species in order to prevent the intrusion of invasive species in this particular location.



Photo provided by S. Longval

Suzannah spent last summer and much of this school year working as an intern at Metcalfe Associates, an architectural firm in downtown Northampton. Her primary responsibilities consisted of researching and writing reports concerning sustainable architectural design methods, cutting-edge energy and resource-saving technology, and alternative energy use. She “was lucky enough to help create a sustainable building model with Metcalfe Associates’ two architects and an inventor/clean energy and environmental entrepreneur, which was submitted to the globally-recognized Living Building Challenge 2.0’s Living City Design Competition in late January, 2011.” Suzannah is now working on developing a comprehensive project brochure outlining the proposal for a zero-sprawl, zero-energy, zero-

waste land development project in Nashua, New Hampshire—she states, “this has been a great opportunity for me to gain experience with sustainable architecture and urban development”.

At this point Suzannah has no firm plans for life after Smith, however, she is busy applying to a number of internships, most of which focus on environmental advocacy and policy reform. Suzannah plans to use these internships as skill building stepping stones which will also allow her to experience some of the many ways one can work in the environmental science and policy field.

—Emily Dwyer, '13

WE'D LOVE TO HEAR FROM YOU! PLEASE SEND COMMENTS AND CONTRIBUTIONS TO [ENVIRO@SMITH.EDU](mailto:enviro@smith.edu)

ENVIRONMENTAL SCIENCE AND POLICY PROGRAM

SMITH COLLEGE

BASS HALL 107

## New Administrative Assistant: Sarah Loomis



Photo: Sarah Loomis

It is with great pleasure that the Environmental Science and Policy Program, the Center for the Environment, Ecological Design, and Sustainability (CEEDS), and the Office of Sustainability welcome a new Administrative Assistant, Sarah Loomis. Originally hailing from Northfield, MA, Sarah graduated from Skidmore College in 2007 with a BA in Environmental Studies and a concentration in water issues. During her time at Skidmore, Sarah focused her passion for issues related to the environment and social justice through her work with the Environmental Action Club and Amnesty International. After graduating from Skidmore, Sarah moved to Philadelphia and served as an AmeriCorps VISTA at the Delaware Center for Horticulture where she helped encourage community engagement and implemented green initiatives through gardening education. Following this experience, she taught horticulture and gardening classes to incarcerated women at the state women's prison. In 2010, Sarah also co-founded and operated an urban farm in her West Philadelphia neighborhood. Most recently, in early 2011, Sarah decided to come to Smith because she felt that the CEEDS' mission and purpose were closely aligned with her interests. So far, she has enjoyed her time at Smith stating, "I love the students I've met. They are a passionate and interesting group of people—it is so fun to ride the coattails of their enthusiasm." Sarah also enjoys working with her colleagues and finds the unique aspects of this administrative assistant job energizing. One of her fondest memories to date is when she went snowshoeing at the MacLeish field station and helped hang student-built birdhouses—not your average administrative job! She is excited to meet more students, faculty and staff in the Smith community, and hopes to learn about the different organizations and groups on campus. Stop by CEEDS today and say hello to Sarah!

—Emily Dwyer '13

## Newly Renovated Wright Hall Houses CEEDS

The Center for Environment, Ecological Design, and Sustainability (CEEDS) is open! We are located on the garden level of the newly renovated Wright Hall. Our space features faculty and staff offices; a student/faculty lounge and conference area equipped with the latest technology; student workstations; and an ever growing plant collection. We encourage you to stop by during our regular hours of 8am to 4pm Monday through Friday.

With environmental sustainability becoming an increasingly prominent issue, CEEDS exists with one purpose—to graduate women who excel at integrating knowledge across disciplines in support of environmental decisions

and action. We meet this goal in a variety of ways, focusing on collaborative efforts both on campus and within our greater community.



Our commitment to collaboration is evident in the team located within CEEDS. We house the Office of Sustainability, faculty from the Engineering and Landscape Studies Programs, liaisons from the Environmental Science and Policy Program, and the people behind the Ada and Archibald MacLeish Research Field Station and our environmental monitoring initiatives. With so many perspectives co-existing right here, we can't help but see environmental connections spanning all areas of Smith!

-CEEDS Staff

## A Sustainable Food Concentration at Smith?

Nearly one billion people are hungry. Food prices have more than doubled over the past five years. Significant gender gaps continue to persist in agriculture and rural employment. Most people in the U.S. are disconnected from the production of the food they eat. And, yet, food has tremendous potential to bring people together, to connect us to the earth, and to bring joy to our lives.

In response to these issues, the Center for the Environment, Ecological Design, and sustainability (CEEDS) is proposing a Sustainable Food Concentration at Smith. Concentrations are new academic offerings that provide students with a framework for combining intel-

lectual and practical experiences around an area of interest. A concentration on the topic of sustainable food builds on student and faculty enthusiasm and interest in this subject and capitalizes on Smith's location in the heart of the agriculturally rich Pioneer Valley. This concentration will enable our students to engage in an interdisciplinary exploration of food and the many issues involved in sustainability, such as global food systems, the economics of agriculture, food cultures around the world, agricultural policy, and many issues related to gender, equity, and justice. A capstone experience will provide student teams with the opportunity to work on real projects in our community.

—CEEDS Staff



Photo credits: Nina Mazel '11

## Curricular Enhancement Grants

Aiming to capitalize on the creativity and innovation of faculty at Smith, the Center for the Environment, Ecological Design, and sustainability provides small grants to faculty to support environmental curricular development. This past year for example, grants enabled landscape studies students to participate in a rapid assessment and planning project in a Northampton neighborhood; engineering students to design a solar array to support an electric fence and environmental monitoring equipment at the MacLeish Field Station; and vertebrate biology and architecture studio classes to collaborate on the design for chickadee, screech owl, bluebird, kestrel, and tree swallow birdhouses.



Left: The completed Screech Owl house. Right: Architecture Studio students holding their finished birdhouses.

Photos: James Middlebrook

## ES&P Capstone Projects



- MacKenzie Clark '11, GEO major, ENV minor. *Recycling at Smith*
- Emily Gannon '11 AC, GOV major, ENV minor. *Transforming Attitudes, Transforming Infrastructure: Moving toward Sustainability by Installing Composting Toilets on the Athletic Fields*
- Caitlin Kennedy '11, GEO major. *Reduce, Reuse and then Recycle*
- Esther Kwon '11, GOV major. *Reducing Phantom Energy Waste in Residential Houses: The Inter-Quadrangle Energy Competition*
- Gerica Lee '11, GOV major, ENV minor. *How Green is Smith?*
- Suzy Longval '11, SOC/ENV double major. *Meadow Restoration at the MacLeish Field Station*
- Emily Mailloux '11, ENV major, ECO minor. *Improving Water Conservation in Smith College Housing through Environmental Education*
- Stacie Mansen AC, GSC major, ENV minor & Ali Zipparo AC, ENV major. *Smith's Journey into the Local Food System - Breaking the Bottleneck*
- Lily Maynard '11, BIO major, ENV minor. *Curriculum development to support student visitors of Smith College's MacLeish Field Station*
- Colleen McGaughey '12, BIO major, MUS minor. *Invasive Species Management at MacLeish*
- Jake Pecht '12, GSC major, EGR minor. *Ecological Water Flow Calculations for the Bechtel Environmental Classroom*
- Amy Shmania '11, ENG major, ENV minor. *Papering Campus: Advertising Gone to the Recycling Bin?*
- Helen Sitar '11, ENV major, BIO minor. *Carbon, Consumption, & the Co-gen: Disguising Campus Energy Consumption in a Smaller Carbon Footprint*
- Michael Skolnick '11 Hampshire College. *Energy Conscious Ads for Hampshire Students*
- Kelsea Thornton '11, ENV/GEO major. *Attracting a Larger Crowd to ES&P Events*
- Tess Zinnes '11, ANT major, ENV minor. *Recycling Regalia: How Switching from Buying to Renting can be Economical and Ecological*

## Green Team Spring Events!

The spring semester has been an exciting and busy time for Smith's student Green Team. The events and public relations committee has been planning two big events to take place in March and April.

The first of these events was Earth Hour in March. Earth Hour was originally observed in 2007 only by a group of activists and businesses in Sydney, Australia. However, it has since become a worldwide event. During this designated hour each year, individuals and corporations turn off all of their lights in order to make a statement about energy consumption and climate change. Here at Smith, the Green Team hosted a "switch hunt" competition in which houses raced against each other to turn off a set number of lights across campus and win prizes

donated by local businesses. The winners were King, Lamont and Baldwin, respectively. The event also involved placing tags near light switches to remind regular building occupants to save energy by turning off lights when they leave the room. Green Team has hosted Earth Hour events for the past several years. All houses are encouraged to participate as it is a great way to bond with housemates, celebrate a good cause, and take part in a worldwide event.

The next event is Earth Day, and although Earth Day is officially April 22, Smith will be celebrating on Saturday, April 23. Green Team is planning a celebration that incorporates the many groups on campus that are making an effort to make our school more sustainable. Student groups, such as Community Garden

and Engineers for a Sustainable Future, will present their work in an interactive way to the Smith community. Faculty and staff from various departments, including Dining Services, will also be on hand to talk about their environmental efforts. In addition to music provided by our own WOZ-Q, the Green Team is hosting a band called Big Tree which will provide some live music! This exciting band travels in a vegetable oil powered bus and provides music and workshops to schools and organizations all over the country.

Both Earth Hour and Earth Day are free annual events, and are great opportunities for students to be a part of environmental movements at and beyond the Smith campus.

-Nina Lasser '12

## Bicycle Kitchen Moves To New Location

Bicycle Kitchen is a student run organization that offers affordable and accessible bike rentals and maintenance education for the Smith College community.

For students who are not able to purchase their own bike, Bike Kitchen has a fleet of 50 bikes for semester rentals at a cost of \$20 each—this conveniently includes a helmet and a lock. There are also weekly 'Bike Fix'n' hours for students and faculty. During these workshops, individuals can stop by the space and use the tools and equipment provided by the organization. Additionally, students can learn how to fix a rental bike, their own bike, or a practice bike. Throughout the year, Bicycle Kitchen hosts and participates in events on and off campus. Over the last few months, Bicycle Kitchen has sponsored a workshop series lead by Smith alumni, Colby Singleton, to teach about different troubleshooting courses (e.g. fixing brakes, gears, tires, etc.). This April, the organization has been involved in several community outreach programs to teach basic bike maintenance, including a Bike Clinic hosted by Public Safety and an event with a local Girl Scout troop.

Our biggest project this year has been working to establish a new home. Bicycle Kitchen recently moved to Talbot House. As grateful as we were to have the old space in Ainsworth Gymnasium, being on the edge of campus and in a concrete room down two sets of stairs was not the most convenient location for students. However, we're excited about our new home in the old kitchen of Talbot House. It is a much larger space and has a great location on campus. The new bike kitchen is easily accessible from street level--the front door is located near the parking lot behind Talbot House (next to the Smith College Campus School). Storing equipment and supplies is easier, and plenty of space is available to host workshops. We are extremely grateful for the help from all the people in Facilities who worked hard to prepare the space by removing old cooking vent hoods, grease collectors, and furniture, updating electrical wiring, fixing plumbing for our own bathroom, installing bike hooks for storage, and even painting! This project was also made possible by the generous assistance from the

College's Sustainability Director, Deirdre Manning, and Vice-president of Finance and Administration, Ruth Constantine. And of course, we are very thankful for the students of Talbot House who have been so welcoming of their new housemate, Bike Kitchen.

We're hoping to be able to make the most of a more convenient and accessible space where the Smith community can learn about bike maintenance. The entrance to the new Kitchen has been designed to have a small space open 24/7; at this point a key can be rented out from the Campus Center, but we hope that by next year students will be able to access the space using their OneCard. This 24 hour space allows students to access basic tools in order to fix their bike when 'Fix'n' workshops are not running. Some of the basic tools include a bike pump, wrenches, patch kits, and cleaning supplies.

The grand opening of the new Bike Kitchen took place on Sunday, April 17th! Many students and members of the community helped us transport bikes and supplies from the Ainsworth Gym to the new Talbot House location. We celebrated the big move with an Open House complete with live music, art, snacks, and tours of the space.

—Katherine MacKenzie '11



A Bike Fix'n outside of the old Bike Kitchen space in Ainsworth. Image courtesy of Katherine MacKenzie



Members of the Bike Kitchen crew. Image courtesy of Katherine MacKenzie

## The MacLeish Field Station



Map of the proposed building site, Whately.  
Courtesy of Reid Bertone-Johnson

Only a short drive into the rural hill towns to the north and west of Northampton, The Ada & Archibald MacLeish Field Station consists of approximately 240 acres of field and forest, a vernal pond or two, and miles of freestanding stone walls. MacLeish, as it is known, is nestled between protected municipal and state forest lands to the west and a state Wildlife Management Area to the east. It is home to black bear, bobcat, a flock of almost 100 wild turkeys, and countless other birds, bugs, and salamanders.

MacLeish was originally acquired by Smith College in the early 1970s as "dark sky" protection around our astronomical observatory. Since its dedication in 2008, however, it has taken on a new life. As part of Smith's new Center for the Environment, Ecological Design, and Sustainability (CEEDS), the field station fosters field based education, research, and experiential learning. MacLeish has an 80-foot instrument tower installed by Professor Paul Voss in Engineering that currently collects meteorological data that is displayed on a student-designed website [<http://macleish.smith.edu>]. There, you can learn the current weather conditions and trends over the last 5 days, weeks, and months.

In addition to gathering meteorological data, faculty and students are currently conducting a variety of environmental research programs related to the wooly adelgid, a parasitic insect infesting Hemlock trees along the East Coast of the United States. Professor Drew Guswa in Engineering measures sap flux and precipitation, Professor Amy Rhodes in GeoSciences studies the geochemistry of water at the field station, and Professor Jesse Bellemare in Biological Sciences is helping to determine land use patterns at MacLeish by coring trees to determine years of abandonment for pastures and cultivated fields that once dominated the site.

Students are heavily involved in all aspects of research at MacLeish. Over the last few summers more than a dozen students have worked with Professors Guswa, Rhodes, and Bellemare as part of the **Summer Undergraduate Research Fellowship (SURF)** program. This summer, that work continues and expands to include Dr. Paul Wetzel's collaborative initiative with the American Chestnut Foundation to reintroduce the American Chestnut (in its sixth generation cross with a blight resistant Chinese Chestnut) to the forests of Western Massachusetts.

In addition to the scientific research activities, we are engaging in new initiatives to more actively support recreational opportunities and student engagement with the development of MacLeish as a resource for the entire college. In the Fall of 2008, students in my Landscape & Narrative Studio designed a system of five new miles of trails for MacLeish. After a summer of work overseen by Scott Johnson in the Outdoors Program, 2.5 miles of this system of trails are ready for use. Finishing touches to the existing trails will be implemented this summer, and new trails will be developed.

One of the most exciting recent developments at MacLeish is the design and impending construction of a new classroom building on the site. The College is working with a design team headed up by Bruce Coldham of Coldham and Hartman Architecture, in Amherst, Massachusetts— the building promises to be one of the most sustainably built, energy efficient, and beautiful buildings ever constructed in Massachusetts. Students are engaged with the design team in many aspects of the process, including energy modeling, biophilic design development, day-lighting models, solar panel array design, materials research, and landscape development. The building, slated to open in the summer of 2012, will greatly expand the possibilities of the site and the ways in which the Smith community engages with the priceless resource that is the Ada & Archibald MacLeish Field Station.

All of our efforts are aimed at involving students not only in research and recreational use of MacLeish, but also in the development of the field station itself. In so doing, we are creating a uniquely "liberal arts" field station that will provide opportunities for Smith women to get outside, connect with their environment, take action in the development of an important resource, and develop into environmental leaders in their own right.

-Reid Bertone-Johnson, Manager, Ada & Archibald MacLeish Field Station