

The Woods are Lovely, Dark... and Full of VOCs

by Benjamin Gannon

The U-M Biological Station (UMBS)

Research Experience for Undergraduates (REU) program is an excellent opportunity to do self-directed research. Its “Biosphere-Atmosphere Studies in a Changing Global Environment” brings together researchers from diverse fields to create unique and often multi-disciplinary research projects.

I worked with mentors Dr. Burt Barnes (U-M – Forest Ecologist) and Dr. Steven Bertman (WMU – Atmospheric Chemist). My project’s goal was to predict changes in atmospheric composition above northern Lower Michigan forests as the forest composition changes during succession.

I worked with Dr. Barnes to design and carry out forest inventory surveys as well as to develop a model to quantitatively predict changes in forest composition. In the field I identified and measured trees, shrubs, and herbaceous plants, took tree cores, and measured light penetration through the canopy using optical sensors.



Benjamin Gannon (r) and PitE classmate and fellow REU student Mike Akresh at the U-M Biological Station.

Research Experiences for Undergraduates, a.k.a. REUs, offer opportunities for undergraduate students to plan, execute, and report scientific research. Hosted by many universities, these competitive positions place students in ongoing research programs or in research projects designed especially for the purpose.

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Director's Letter: PitE Diaspora

Dear Colleagues:

Summer provides an appreciated change of pace for a university community. Many faculty and students have plans to be elsewhere to continue their research and studies. Even the people who stay on campus get a change: vacant parking meters and a few months in which walking and biking are pleasant and sunny instead of icy and treacherous.

This issue of the PitE newsletter features some of the things our students and faculty do with their summer months. Spring and summer semesters are when the vast majority of PitE students – nearly 80% – complete their field experiences. Whether they are taking classes at Camp Davis, interning on Capital Hill, or studying abroad, they are away from campus, applying what they've learned in a new setting. They are adding to their understanding of the global

environment by changing their immediate environment.

Faculty, too, use summer very differently from the other seasons of the year. Many of us head to the field to do research, or hole up at home to work on articles we put off during the academic year. Some of us continue teaching, but in outdoor classrooms instead of the Dana Building. This summer I expect to make my 25th trip to Camp Davis, in Jackson Hole, Wyoming, to teach in the Intro to Geology class that so many PitE students take.

This change in scenery and activity is important. It refreshes us and makes us question our familiar thoughts and habits. It also reminds us why we study and work in our chosen field.

I wish you all a good summer, safe travels and expanded horizons.

Respectfully,

Taming the D.C. Wilderness

by Bentley Johnson

When entering the lobby of The Wilderness Society you can not help but notice the beautiful photographs that adorn the walls. You are in fact looking at one of the biggest and most rare collections of authentic Ansel Adams photographs. It set the tone for my summer as an unpaid intern in the Public Policy department of The Wilderness Society.

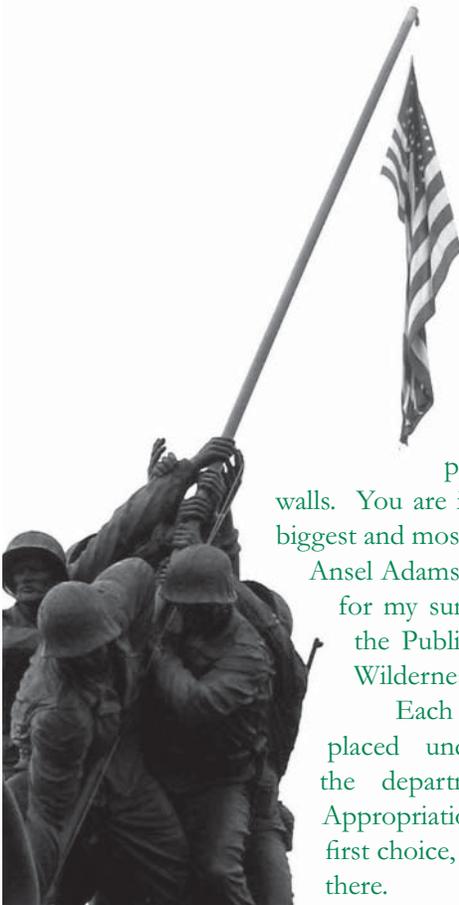
Each one of us interns was placed under specific employees in the department. The Budget and Appropriations department was not my first choice, but I am so glad I was placed there.

The main issue I worked on involved a program called The Land and Water Conservation Fund (LWCF). Created in 1965, the LWCF uses revenues from off-shore oil and gas drilling to support the conservation of America's land and waters.

The Fiscal Year 2007 budget proposal puts the LWCF appropriations at their lowest in 30 years. I wrote an editorial about the LWCF situation that my boss revised and published in a Wilderness Society newsletter. I also wrote a draft of a public service announcement that was eventually going to reach radio.

I got to attend several Senate Appropriations Committee hearings. I also

see **D.C.**, p. 7



Citizenship by blood and by oath

by Tugsu Armstrong

This article first appeared in the Fall 2006 LSA Magazine. It was one in a series of articles and reflections on citizenship.

The past eight months have been the Citizenship Theme Year in LSA.

This past summer, I returned to my home country for the first time since 2000. For the first time in six years, I did not celebrate the American Independence Day. However, coincidentally, this year Mongolia celebrates the 800th anniversary of the Mongolian Empire, first founded by Genghis Khan. Therefore, there has been a string of events and celebrations marking this anniversary. So this year, every Mongolian is especially proud of his or her citizenship and is expressing it in a variety of ways.

However, I continue to have mixed emotions because in my naturalization ceremony in the United States last year, I was forced to renounce all other citizenships, making me no longer a citizen of Mongolia.

This really hit me when I visited Mongolia. For example, traveling around Mongolia you have to pay twice the regular price if you are a foreigner.

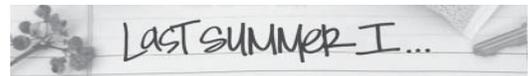
My family, co-workers at the Wildlife Conservation Society, where I completed my PitE Field Experience, as well as my friends were shocked that I was treated as a foreign person. Some of them were outraged that the country wouldn't allow dual citizenship for Mongolians who were born in and grew up in Mongolia and have a true love for the country.



Mongolia is my mother country. I will always love Mongolia as a child loves his or her mother, even when the person is married off or living far away and legally doesn't belong in the family anymore.

I became a citizen of Mongolia by birth and a citizen of the United States by choice. I love Mongolia like my mother, and I love the United States like my husband. I never had to take an oath to love and cherish my mother or my home country, but when I became a U.S. citizen I took an oath, just as I made a vow to my husband. I am a citizen of both countries in my heart. ■

Tugsu Armstrong is a Sociology major and a PitE minor.



...went inside the crocodile pen at the Cleveland Zoo.

Brandi Thompson, PitE Concentrator

...spent a month in Ghana studying their recycling system and learned my Ghanaian name is Efie because I was born on a Friday.

Leah Ettema, PitE Concentrator

...walked on water while exploring a peat bog at the Biological Station.

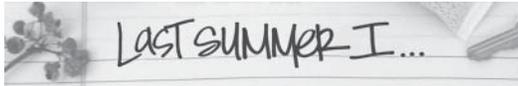
Becky Gajewski, PitE Concentrator

...taught and studied bay ecology with 12-year-olds by catching fish with seine nets in the Chesapeake Bay.

Joyce Pan, PitE Concentrator

...participated in research on Lake Michigan aboard NOAA's research vessel Huron Explorer, the first 100% petroleum-free federal research vessel.

Julie Mida, PitE Concentrator



...started my new master's program in Environmental Science and Policy at Columbia University and explored New York.
Julia Farber, Class of 2006

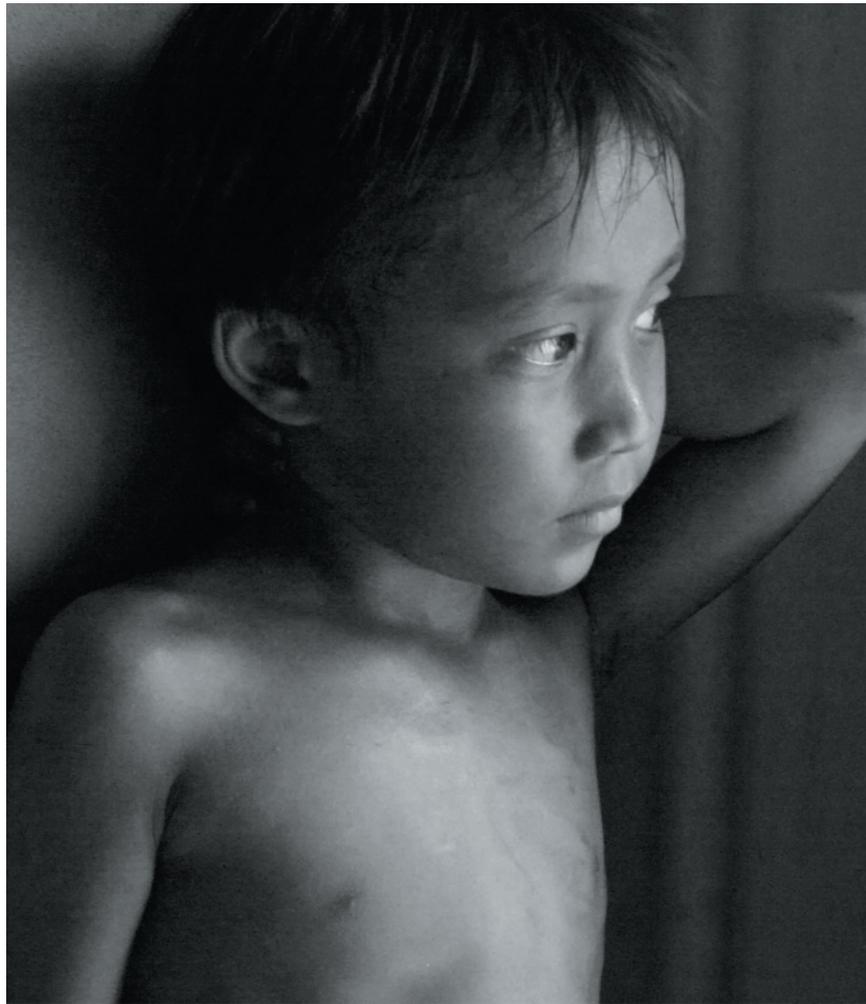
...modeled the mechanics of fern sporangia shooting their spores.
Jared Westbrook, Class of 2004

...inventoried forests for the Michigan Natural Features Inventory.
Rachel Steel, Class of 2006

...filled out veterinary school applications (which resulted in my acceptance at Cornell, where I'll be starting school this fall).
Chris Frye, Class of 2004

...went to the Biostation for the third year in a row. First I was a PitE student, then I was a Master's student at Bowling Green. Douglas Lake has guided my life down a great path!
Evan Thomas, Class of 2005

photograph by Isabelle Carbonell



REU, from p. 1

I worked with Dr. Bertman to translate my predictions about forest composition into predictions about the atmospheric concentration of Volatile Organic Compounds (VOCs), which are released in varying amounts and forms by different plants. VOCs are important because they can react with oxidants in the atmosphere to create or destroy ground-level ozone.

Using past findings on the relationship between tree species and the type and amount of VOCs they release I was able to use modeling software to predict the future concentrations of VOCs in the atmosphere.

The REU program emphasizes effective communication of scientific findings, so I also gained experience in recording the details of my project in the format of scientific peer-reviewed journals.

I gained more from the planning and design phase of my project than I could have ever gained if I had simply been working on someone else's research project as a field assistant. The UMBS REU program is an excellent stepping stone for undergraduate students who plan on pursuing a graduate degree in science.

UMBS is also a great place to learn about the culture of the research community as you are surrounded by graduate students and professors who are passionate about their research and about environmental issues. •

Benjamin Gannon is a senior in The Program in the Environment. This summer he plans to work for the U.S. Forest Service.



Crossing Borders: Vietnam

by Isabelle Carbonell

June 6, 2006

I am half-way across the world, sitting in an Internet cafe called “Crazy Online Games.” My documentary

will be composed of vignettes. We decide on the first subject: a restaurant which specializes in training disadvantaged youths mired in poverty to upscale restaurant-catering. Within 2 hours, I’m sitting down with a girl name Nga. Within another hour, I am at her house which has basically no roof. By dusk, her mother is crying to my video camera upon the first question of the interview about how they have arrived here. This is my first vignette, yet it could be my entire documentary.

June 10, 2006

The past two days have been an entire semester’s class study of theory ripped apart, put back together, applied, failed, reapplied, badly digested, and finally maybe taking root. International grassroots development, such as malnutrition programs like the one I visited, isn’t as simple as I had first understood it.

July 5, 2006

I am going to Phu Tho Province, our target project site, tomorrow. I have to be aware of cultural details such as these:

1. When shaking hands with elders, shake with BOTH hands clasping, a required sign of respect
2. When listening to an elder, do not look them in the eye (which in the U.S. is disrespectful, but it is the opposite here)
3. When handing out my business card, or receiving a business card, use BOTH hands with thumbs next to each other. Using only one hand casually is disrespectful.
4. Before entering any abode, home or office, take off shoes. Consequently, don’t wear shoes that are hard to take off and put on, such as, Chacos.
5. Communal eating is the custom, so there are 5 or 6 big plates, and then everyone eats out of small bowls with chopsticks. When at dinner, eat slowly, because if you are finished

see **Borders**, p. 7



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Graham Fellow Parrish adds to Environmental Humanities



Susan Scott Parrish hopes to give PitE students “a knowledge of the deep history of environmental thinking” in the Americas. She says students may know about efforts to extract oil from the Arctic National Wildlife Refuge. They may not be aware that this continent’s first settlers sought beaver pelts and arable land with the same utilitarian motive.

Parrish, an Associate Professor of English Language and Literature, teaches “Environmental Imagination in North America,” a course that is cross-listed in PitE and English. She is also a recently named Graham Environmental Sustainability Institute Fellow for Undergraduate Education.

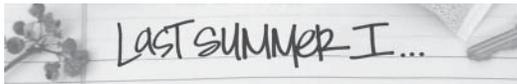
“One of our curricular goals is to ensure that PitE students are exposed to a broad spectrum of viewpoints about the

environment,” says PitE Director Bob Owen. “For that reason, we are committed to having humanities courses as an integral part of our curriculum. Scotti Parrish is exactly the right person to help us meet this commitment. She is an outstanding teacher and scholar, and I am delighted that she has joined us.”

Students in Parrish’s class read archetypal nature writers such as Thoreau and Muir. But they also read essays by contemporary writers Barry Lopez and Annie Dillard, and novels by William Faulkner and Willa Cather. As counterpoint to writers who glorify nature, Parrish assigns colonial era writings that commodify it. Providing context throughout the semester is a textbook in environmental history.

Parrish says she has two goals for her course. “I want students with an interest in the environment to be articulate about it – have better language and tools for expressing themselves. I also want them to get a sense of historical awareness. My job is to place the present moment in a larger context.”

Ed. In December, 2006, Prof. Parrish’s book American Curiosity: Cultures of Natural History in the Colonial World (University of North Carolina Press, 2007) won the Ralph Waldo Emerson Award. The award, given annually by the Phi Beta Kappa Society, recognizes “scholarly studies that contribute significantly to interpretations of the intellectual and cultural condition of humanity.”



...sat on my porch and read and wrote about the natural world of seventeenth-century Virginia.

Susan Scott Parrish, Graham Faculty Fellow

...followed my son’s baseball team to Minnesota where I witnessed a night game played in the midst of the most amazing mayfly hatch. Scientific conclusion: It’s not easy to hit a baseball against a backdrop of large, white insects zinging in all directions.

Rolf Bouma, PitE Lecturer in Environmental Ethics

...worked to create a web site for environmental educators (www.mera.snre.umich.edu).

Michaela Zint, PitE Faculty Associate

...took a week’s tour focused on fair-trade coffee in Chiapas, Mexico.

Catherine Badgley, PitE Faculty Associate

...traveled to Indonesia, England, France, and the Netherlands for my research. Bali was especially interesting for its stunning physical and cultural beauty.

Arun Agrawal, PitE Faculty Associate

Borders, from p. 5

early while they are still eating, they will keep putting food in your plate without asking your opinion on your appetite. However, vegetarianism is well-accepted, so I am not forced to eat meat.

July 20, 2006

When I can stop sweating for half a second, I begin to focus on The Moment. That ubiquitous, elusive feeling that Things are Happening (I'm going home so soon) and the need to realize that before it passes unnoticed. In this case, what I was trying to do is make a laundry list of everything that I had ever taken for granted in my life which I did not have here.

Everything you ever thought was normal becomes a luxury. The boundaries of my "comfort zone" were not, as I discovered, the hard wooden bed, or the lack of a shower, or lack of flushing toilets, or the bugs, or the lack of privacy, or eating on the floor, or the lack of vegetarian-friendly food...

It was the lack of a cold, drink. A cold drink - to cool me down in 110 degree heat. ■

Isabelle Carbonelle is graduating this spring from PitE and the Residential College. The above excerpts were taken from her blog chronicling her time in Vietnam with the U-M student group Crossing Borders. You can read Isabelle's complete entries at <http://www.crossingborderonline.org/vn06/>.

Deceased PitE Student to Receive Degree in April

L. Andrew Bensinger, a Program in the Environment minor, died in a train accident February 8, 2007. He was completing his field experience in Thailand at the time.

The field experience was Andrew's only remaining requirement for the minor. He will be posthumously awarded his B.S. degree in Biology and minor in the Environment this April.

Andrew is survived by his parents and brother. ■

U-M Earns B+ Sustainability Grade

In January, the Sustainable Endowments Institute issued "Green Report Cards" for 100 public and private colleges in North America. Grades were based on factors including the administration's commitment to sustainability, food and recycling programs, green building, and energy use.

More than half the institutions examined earned an overall grade of C. The University of Michigan's overall grade was B+. Notably, Michigan earned A grades for Administration, Climate Change and Energy, Food and Recycling, and University Endowment Investment Priorities.

Additional information about the survey is available at the PitE website, <http://environment.lsa.umich.edu/environ.> ■

D.C., from p. 2

attended several lobby visits to the offices of many prominent Senators and Congresspeople including Senator John McCain and Senator Ken Salazar.

For another project, I tracked the funding of the LWCF. I spent countless hours in the Law Library at The Library of Congress, scanning microfilms of bills from 1965 to the present day. While the project was extremely tedious, it was fun making trips up to the Capital Hill and having lunch at local spots with other interns.

Looking over this project at the end of the summer brought me immense satisfaction. I really felt like I made a difference as an intern, not just as someone looking for something I could put on a resume. ■

Bentley Johnson is a Sociology major and PitE minor. He will graduate this spring and plans to work at the U-M Survey Research Center. He aspires to a career in Environmental Justice.



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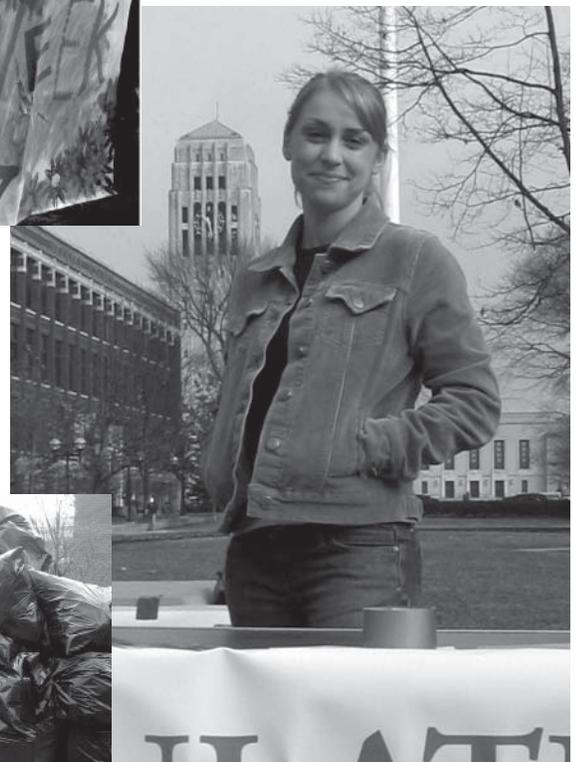
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PitE students and alumni celebrate campus Earth Week

U-M student environmental groups celebrated Earth Week on campus March 12-16. Many PitE students and even a few alumni clocked time on the Diag promoting recycling, sustainable energy and stabilizing the human population.

For a list of environmental student groups at U-M, visit the Program in the Environment website, <http://environment.lsa.umich.edu/environ>.



Above: Alumna Rachel Steel staffs an information table for the non-profit organization Population Connection. Far left: Julie Mida and Nora Lewandowski represent MSTAR (Michigan Students Advocating Recycling).