

Naturally Drake

First Edition, Volume 1

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Drake University's Environmental Science and Policy Program

At Drake University, the Environmental Science and Policy program is an interdisciplinary program based on the idea that for a student to succeed in the today's world, students need a diverse and integrated education.

The goal of the program is to engage students in a variety of disciplines including science, policy, economics, ecology and conservation, both in the classroom and in the field, where they will also get to know their professors and go beyond being a face in a crowd. Students will work with professors both in the classroom and in the field to engage in research that might go towards a publication to be published in a scientific journal.

ENSP Program cont.

Students also have the opportunity to study abroad with an Environmental Science or Policy major that could include anything from studying the tropical rainforests of South America to diving to the depths of the Great Barrier Reef in Australia.

Students are encouraged to put their classroom knowledge to use in a variety of ways in the field as part of the laboratory components of many courses. Field work might include taking leaf samples of oak trees, electrofishing in a creek in order to determine biodiversity, and burning down prairies to control invasive species.

In the Environmental Science program at Drake University, we are not simply sitting in a classroom learning about the world around us and what other people are doing to change it. At Drake, we are changing the world around us. From undergraduate studies to graduate work and beyond, students in the Environmental Science and Policy program work every day so that the world that we have today will be better tomorrow.

What We've Been Up to

On the next page, a few professors at Drake wrote about their experiences over the summer as well as what they will be working on this coming semester.

If you would like to get in contact with any of the professors or have any questions about Naturally Drake, please contact Abbey Elmer at abbey.elmer@drake.edu.

For more information concerning the Environmental Science and Policy program or the School of Arts and Sciences at Drake University, log on <http://artsci.drake.edu>.

What We've Been Up to Cont.

Dave Courard-Hauri

Associate Professor of Environmental Science and Policy



Over the summer, along with touring the East Coast with his family looking at colleges for his oldest daughter, Dave Courard-Hauri worked with junior Drake student Alex Boland on a project to calculate the amount of carbon dioxide taken out of the atmosphere each year by the Gishwati

Forest in Rwanda. The work involved estimating the total carbon in the forest current, using the diameter, height, and species of over 2000 trees within the forest. From there, Dave and Alex calculated the expected growth rates over the next twenty years. The Gishwati Forest is home to a diverse array of tropical montane species, including a population of chimpanzees. With the information Dave and Alex found, conservationists in Rwanda hope to sell carbon credits to help the forest and the chimps within.

Dave also worked with Drake student Stephen McCray, now graduated, modeling how beliefs propagate within a population when people in that population have limited information, potentially selective access to experts, and biases that may be reinforced or mitigated by people they talk to. Dave expects that the findings from this project will explain why public and expert beliefs about scientific topics diverse so greatly.

Dave has research opportunities in his lab working on both of these projects. He is looking for students with strong math skills, computer experience, and don't mind reading through lots of scientific papers.

-Dave Courard Hauri can be contacted at david.courard-hauri@drake.edu

Keith Summerville

Associate Professor of Environmental Science and Policy



Over the summer, while also spending time with his family and celebrating his youngest daughter's first birthday, Keith Summerville worked with Environmental Science students Ashley Seidel, senior, and Abbey Elmer, junior (that's me!), on a variety of projects.

Summerville cont.

One of the projects the team worked on was looking at the effects of a disturbance on butterfly, small mammal, and reptile populations and if those populations are able to recover after the disturbance. To mimic the effects of a natural disturbance, such as natural burning of a prairie, the experimental site for the project was on a site that frequently had cattle grazing, with the control site being a natural tall grass prairie without any disturbances. Ashley and Abbey conducted surveys by placing Sherman live traps and snake boards and checking them regularly and noting what species were on both of the sites.

Abbey and Ashley also worked on a few other projects, including monitoring Ornate Box turtle population in Chicaqhua Bottoms Greenbelt as well as removing invasive species from Yellowbanks Park in Pleasant Hill, Iowa.

This fall, while continuing his roles at Associate Professor of Environmental Science and Policy, Keith also acts as the Associate Dean of the School of Arts and Sciences and advisory board member for the Leopold Center for Sustainable Agriculture.

-Keith Summerville can be contacted at keith.summerville@drake.edu

Katie Szramek

Assistant Professor of Environmental Science and Policy



Dr. Kathryn Szramek started at Drake Fall of 2009 and is our newest hire to the ENSP program. She has a degree in geology from the University of Michigan with a research focus on watershed scale geochemistry. She teaches our expanding geology course offerings and is working on developing her undergraduate research program at Drake.

This summer Dr. Szramek worked on two different projects. In May she headed to Slovenia and Italy to work on carbonate bearing watersheds that drain the Dolomite Mountains and empty into the Northern Adriatic Sea. These watersheds offer in-site into the fate of carbonate mineral weathering products as they move from the terrestrial to the marine environment. The results of this study have potential implications on our understanding of watershed chemistry, water quality, marine acidification and the carbon cycle.

Drake University Environmental Science and Policy in the News

In addition to her work in Europe she also has a project in central Oregon looking at watersheds within volcanic landscapes. She traveled to Oregon with two Drake ENSP students, Nicolette Marschke and Lauren Phillippi to sample streams and springs within the Deschutes and Crooked River watersheds. They spent their days looking for elusive springs in the Ochoco Mountains, sampling rivers draining ranchlands and National Forests and grasslands, and enjoying the diverse scenery within central Oregon. Both students are working on projects relating chemical weathering products, climate, and land-use and will be presenting their work at the DUCURS conference in the spring.

*-Katie Szramek can be contacted at
kathryn.szramek@drake.edu*



Lauren and Nikki taking samples of Fall Creek in the Deschutes National Forest, Oregon, with Broken Top in the background.

Welcome First-Years

Welcome to Drake University first year students!! Get ready for the most exciting four years of your life! Being an Environmental Science major is not only challenging and engaging, its the most fun you'll ever have learning about the world around you, whether is electrofishing in Ecology or chopping down invasive species in Prairie Restoration. Have fun, work hard, and welcome to Drake University.

-Abbey Elmer, Editor for Naturally Drake

Glover's Point, the spot of land that lies between the lake and thick woods on the northeast Nebraska Winnebago Reservation, could be an oasis — but invasive plant species choke the landscape, withering the Tribe's connection to what was once a picturesque patch of prairie and wetland.

Two Drake students were awarded a \$66,700 grant from the Nebraska Environmental Trust for a prairie restoration project on Winnebago reservation land.

Thanks to the work of two Drake University environmental science majors, these 100 acres soon will undergo an ecological transformation, returning it in 10 years time to the environment enjoyed by Winnebago ancestors James Black Hawk and Little Ox in the 1890s. Restoration of the prairie may facilitate enhanced breeding of upland game birds and some waterfowl by creating important ecosystems for hunting.

Seniors Jennifer Koska and Robb Krehbiel applied for and were awarded a \$66,700 grant for the Winnebago Prairie Restoration Project to coordinate logistics and develop a strategic plan for prairie restoration and environmental and cultural education on land owned and managed by the Winnebago Tribe.

The project is funded through a grant from the Nebraska Environmental Trust. The trust is funded by proceeds from the Nebraska Lottery and has awarded more than \$127 million to more than 1,200 conservation projects across the state of Nebraska since 1994.

Grant money will cover hiring three tribal workers for four months of clearing and planting the area, travel expenses to and from the project site, and training funds for the Prairie Plains Resource Institute. The Winnebago Prairie Restoration Project is a student-driven capstone experience that leverages their technical expertise so that a people who once had a deep spiritual and geographic affinity to the land can reconnect with Glover's Point.

“This is truly an interdisciplinary project — one that has, more than anything I've ever done, taken me outside of my academic comfort zone and into areas of spirituality, ethics and racial history that will influence how the Winnebago Tribe perceives the current value of its land relative to historic practices,”

News at Drake Cont.

says Keith Summerville, associate professor of environmental science and policy, and faculty adviser on the project.

“I am extremely proud of the work of my students, who were full and equal collaborators with myself and members of the Winnebago Tribe.”

The prairie restoration was inspired by a guest lecture by Howard Crow Eagle, Central Iowa Circle of First Nations president, who spoke to Krehbiel’s sophomore “Speaking with many voices” class in the spring of 2009 about the importance of land stewardship among tribespeople. He connected that passion I had for prairie restoration with a growing passion I had for indigenous communities,” Krehbiel says.

Crow Eagle took Krehbiel and Koska to the Winnebago reservation in 2009 and introduced them to the tribe’s land manager. The students collaborated with multiple groups and organizations, including the Bureau of Indian Affairs, the Army Corps of Engineers, the Prairie Plains Resource Institute and Drake University to lay the groundwork for the restoration initiative.

The team has identified tribal members and a tribal stewardship committee to implement a 10-year restoration plan that will involve Drake student participation as well as peers from the Winnebago Little Priest Tribal College.

-Article provided by Brianne Sanchez, Public Relations Specialist at Drake University. To read more on news at Drake visit <http://artsci.drake>

A Tale from Abroad

By: Danielle Hefferan



For my semester abroad I found a program that was stationed in the Galapagos Islands, and thought what better a place than Galapagos for an environmental science major? Before even reaching the islands however, we took a class on mainland Ecuador dealing with wildlife conservation. With this

class we visited many ecosystems in Ecuador including grasslands, a cloud forest, and the Amazon jungle. It was amazing so see so many of the things I have

learned about in class here in Iowa, in action out in these wild ecosystems. Many of the exercises we did for class were hands on. One of the experiments that stand out in my memory is when my professor took out a tin foiled container full of his dog’s poop. We were to use this poop to observe the For my semester abroad I found a program that was stationed in the Galapagos Islands, and thought what better a place than Galapagos for an environmental science major? Before even reaching the islands however, we took a class on mainland Ecuador dealing with wildlife conservation. With this class we visited many ecosystems in Ecuador including grasslands, a cloud forest, and the Amazon jungle. It was amazing so see so many of the things I have learned about in class here in Iowa, in action out in these wild ecosystems. Many of the exercises we did for class were hands on. One of the experiments that stand out in my memory is when my professor took out a tin foiled container full of his dog’s poop. We were to use this poop to observe the insect diversity on the Amazon floor. Comical at first, we learned a lot about the floor areas of the Amazon and effects on species diversity; the dung beetles were also very amusing.

Once I got to Galapagos, I took classes in Political Ecology, Flora of the Galapagos and Marine Ecology. We continued to do many field exercises and research projects. My favorite was snorkeling for hours every day to figure out the relationship between the intertidal fish and sea turtles within the reef area. The best part of my experience was the internship I was set up with while in the Galapagos. I worked with an organization whose mission is to improve the environmental and social situations within the community and on the Island as a whole. They worked to restore the native environment in the Galapagos through invasive removal and planting of endemics. They also focused on organic and local production of agriculture to revive many of the abandoned farms on the island. Working with sustainable agriculture is what I want to do with my future; so being given this opportunity was amazing. I helped them in organic agriculture research, communications writing, translating, and volunteer training. This whole program could not have been more fitting to what I wanted.

-Danielle is a Junior Environmental Science and Policy Major from Minnesota.