Environmental Studies Program
UNIVERSITY OF COLORADO **BOULDER**

ENVS E-news

Winter 2013

Welcome to our first edition!

We are pleased to bring you the first edition of Environmental Studies E-News, which will land twice annually in your inbox with updates on the Environmental Studies Program. We'll share with you features of outstanding students, professors, and alumni, highlights of current research, and news from ENVS graduates. We hope that you enjoy this inaugural edition, and that you look forward to our future dispatches as a way to stay informed about the program and your fellow alumni.

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GIVE NOW

Message from the Director

Winter greetings from sunny Boulder, and welcome to the first edition of Environmental Studies E-News! As we worked to produce this inaugural edition, we had the pleasure of taking a step back and surveying the state of the Environmental Studies Program. Truly, many exciting things are afoot. In this edition, you will read about recent ENVS undergraduate, Kristen Nowakowski, who studied sustainable tourism in Costa Rica and received the Outstanding Graduate Award from the College of Arts and Sciences. You will learn about a brand new collaboration between ENVS and the

International Red Cross Climate Center, and you will be privy to an update on ENVS' new home. You'll see how Professor Jill Litt engaged her students in a mock senate hearing to testify about environmental risk assessment. And check out the incredible success story of ENVS alumnus Scott Shipman, now Associate General Counsel for Ebay and an expert on consumer privacy protections.

As Director of the ENVS program, I am so proud of the energy and enthusiasm that ENVS students have shown and continue to show in support of this program and their deep commitment to current environmental challenges. It is through the energetic efforts of our current students, as well as you, their predecessors, that we have been able to expand the number of faculty, support staff, course offerings, and visibility of the program on this campus. As we continue to strive to improve our programs, we ask for your feedback and support, so that we may make this the best program that it can be. For the stronger ENVS becomes as a program and CU is as an institution, the more valuable your degree becomes over time.

Please watch your inbox for future editions, and let us know if you have comments or questions by emailing me at Sharon.Collinge@colorado.edu. Happy reading!

Sharon Collinge, Director
Environmental Studies Program

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ENVS undergraduate named "Outstanding Student"

Each semester, the College of Arts and Sciences bestows upon one undergraduate a very high honor: the Outstanding Student Award. Kristen Nowakowski, a recent environmental studies graduate, received this award for the graduating class of December 2012. Kristen graduated with a double major in Environmental Studies (with honors) and Geography. Her near-perfect GPA, three-year commitment to CU's Environmental Center, and the completion of an original undergraduate honors thesis contributed to her being chosen for this prestigious award.

One would be hard-pressed to find a student as dedicated to environmental issues as Kristen. While she wasn't attending classes or studying, Kristen spent spare time during her first year elbow deep at the campus recycling center. She also worked two summers as a recycling collector at various music festivals, and interned with ESPN to help execute the 2011 summer

X-games in an environmentally friendly manner. Kristen's willingness to get her hands dirty for the environment helped enable her to conduct research in Costa Rica for her undergraduate honors thesis, which entailed wading through streams to collect water quality data in order to assess a hotel's compliance with the country's sustainability standards. Her thesis, entitled "Gauging the Reliability of Costa Rica's Certificate for Sustainable Tourism," was "path-breaking" according to Steven Leigh, the Dean of Arts and Sciences. At Kristen's graduation ceremony in December, Leigh remarked that "We think the research has very important results, not just because the hotel was probably not in compliance, [but also because] the research offers a simple test for stream quality that can be widely applied." Additionally, Kristen possibly discovered a new species of dragonfly (*Gomphidea spp.*)!

Kristen will start a new job at an environmental consulting firm in Denver this month. Congratulations to Kristen on her academic accomplishments and on her important research findings! She truly is an outstanding example of how an undergraduate degree in environmental studies can be applied.

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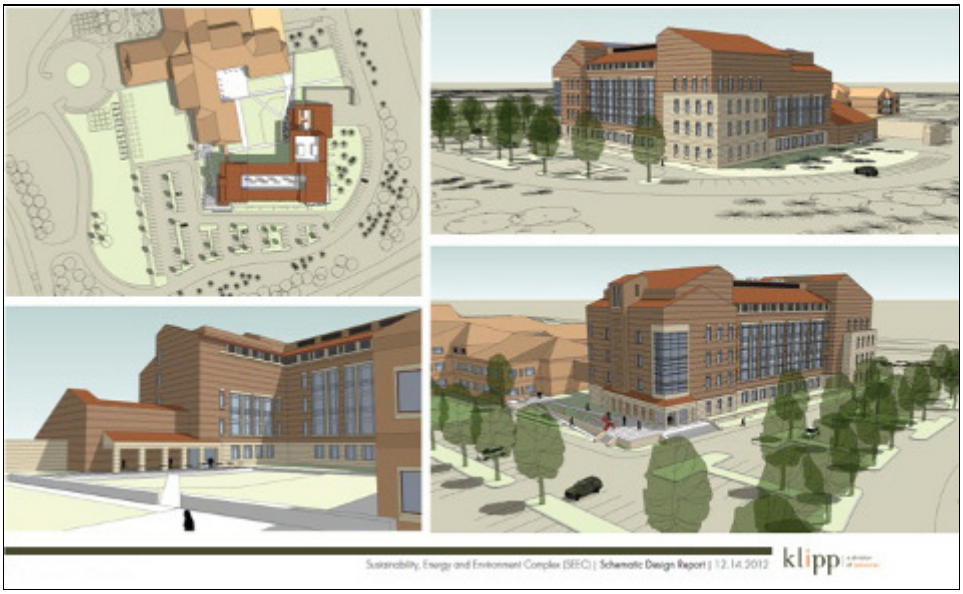
New SEEC building to house Env. Studies in 2015

Question: What do you get when you put three research institutes, two federal partners, two academic departments, and cutting-edge laboratory equipment into a state-of-the-art workspace dedicated to interdisciplinary research?
Answer: Mutual inspiration and beneficial exchanges – what Nobel Laureate and CU professor Tom Cech terms as "fruitful collisions" of people, research, and ideas.

That's how Environmental Studies Professor James White and many others are envisioning the new Sustainability, Energy, and Environment Complex ("SEEC"), which he hopes will be ready to house Environmental Studies and many other programs in 2015. "This will not be a building for an individual discipline, as has traditionally been the case at CU," said White. "What we want to do is to create academic 'neighborhoods' all under one roof to allow for maximum mingling and interdisciplinary interactions.

White is the Director of the Institute for Arctic and Alpine Research (INSTAAR) at CU, one of the many groups that will occupy the new SEEC

space. The complex will house two academic units - Environmental Studies and Atmospheric and Oceanic Sciences - as well as several institutes, including the Renewable and Sustainable Energy Institute (RASEI), the Cooperative Institute for Research in Environmental Sciences (CIRES), and the Center of the American West. Additionally, two federal groups will have space in SEEC: the U.S. Geological Survey and the National Renewable Energy Laboratory.



SEEC will consist of two buildings at the corner of Colorado Avenue and Foothills Parkway. One of the buildings has been purchased already and was the old office of US West. This building will provide 289,000 square feet of office and will be retrofitted as offices and workspace (including an accelerator mass spectrometer) for SEEC tenants. The second building will be built from the ground up and will provide state of the art laboratory space. The 145,000 LEED-certified lab building will be constructed using an open lab design concept to encourage idea exchange and collaboration.

"The groups that will be housed at the SEEC campus currently are spread across seventeen buildings at CU," said White. "SEEC is thus not only a new building, but a new approach to academic research. Instead of separating disciplines with brick walls and institutional boundaries, our hope is to encourage coordination and innovation between research endeavors that have traditionally been disparate."

SEEC will provide the true home Environmental Studies has never had. ENVS began as a program at CU in 1993 and was first housed in the attic of Hellems. It was then moved to Ketchum, then to Benson, and currently is housed in the Arts and Sciences Office Building 1 at 1201 17th Street.

White reports that $15 million is still needed for construction. He is launching a major donation campaign to help meet these costs, soliciting alumni donations as well as donations from private partners. His group is working with a local architect and contractor to move forward with design of the new lab as well as the building retrofit.

"Our vision for SEEC is to help guide the world towards sustainability in an elegant and innovative fashion," said White.

Click here to donate to the SEEC building fund.

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Featured Donor: Scott Shipman

Scott Shipman has always had a thirst for understanding the rules that govern how things work - whether ecological processes, human bodies, or the global economy. This innate curiosity led him as an undergraduate away from a business major and towards an environmental studies degree. "The major allowed me to pick a multitude of upper-level sciences and to design my own course of study, which I thought was fascinating. I was looking for a degree that would enable me to learn how the world really works - how things move, how things are created, and how things change. What could be more fascinating than that?"

Shipman graduated from CU in 1994 and pursued a two-year career as a self-proclaimed ski bum in Aspen, Colorado. During that time, he applied for law school and was accepted into several programs, choosing Santa Clara University over others (including CU Boulder). Shipman grew up within ten miles of the infamous Love Canal toxic waste travesty, and as a new law student, environmental law was on his short list of interests. Santa Clara Law had an environmental program and was relatively close to Silicon Valley, which at the time was undergoing significant transformation "from orchards to chip manufacturing," with resulting superfund and other problems requiring new litigation and policy. However, after his first year, Shipman was offered an internship abroad in privacy law, then an internship with Ebay after his second year. He was deeply hooked by privacy law, and he has been engaged in this subject ever since. Shipman has now worked at Ebay for fifteen years, serving as the company's Chief Privacy Officer. In addition, he teaches privacy law at Santa Clara.

Shipman describes how exciting it was to work in privacy law at its dawn in history: "My field didn't exist when I joined Ebay - literally, companies were just launching websites and the need for privacy law was a completely

new concept. I got to be on the cutting edge of making new rules, and that was utterly fascinating."

To Shipman, retrospectively the progression from an environmental studies undergraduate degree to a law degree makes complete sense. "I've always wanted to learn how things worked, and my undergraduate major provided that opportunity. Law fulfilled this same part of me; it's just the subject that's different. Law studies the rules of the game that we humans have imposed upon ourselves."

The idea of attending law school was first planted by one of Shipman's graduate instructors during a five-week-long Arctic ecology field trip he participated in as an undergrad. Said Shipman, "he told me I had a very analytical mind and asked if I'd ever considered law school. The rest is history."

Shipman has chosen to remain connected to and supportive of CU partly for the affection he still feels for the university, and partly because he believes it is a worthwhile cause. "The decision to give back to an alma mater is a personal choice any alumni faces. I gravitate towards causes that metaphorically teach people to bake bread rather than simply giving out a loaf. I see a great opportunity for this within CU's environmental studies program, especially because of its location - being so close to some very special parts of the world and areas of ecological significance, students can engage in environmental learning in ways that don't exist at other universities."

Aside from annual giving, Shipman remains connected to CU in other ways. He recently presented at the Silicon Flatirons Conference, hosted by CU's Wolf Law School earlier this year. "Wolf Law is now moving into tech, which is interesting - I moved away from CU, and now CU is coming back to me. Boulder will always be a special place for me, so I welcome any opportunity to visit and stay connected."

Shipman's advice for current ENVS students? "It's not about *what* you're learning, but it's about learning *how* to learn. Remember that the grade is just feedback on how well you're doing that. Truly, the mastery of the subject isn't the point - the point is your awareness of your progression and your learning."

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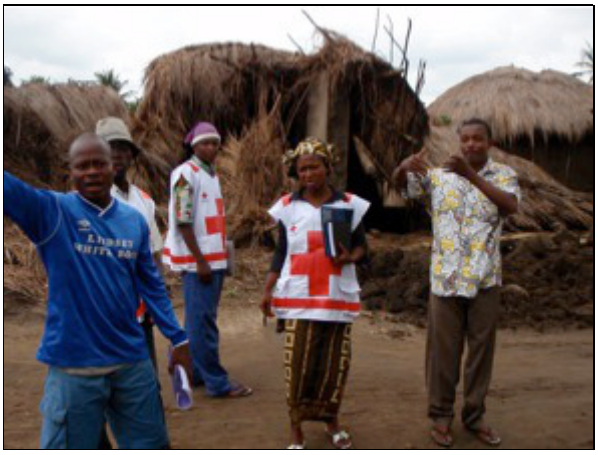
New graduate internship program with Red Cross / Red Crescent Climate Center

Environmental Studies is pleased to announce a new partnership between the University of Colorado at Boulder (UCB) and the Red Cross/Red Crescent Climate Centre (RCRC CC). Among the many benefits of this

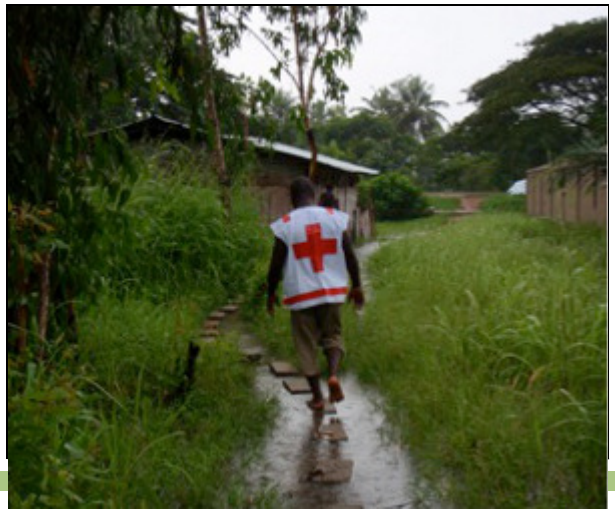
new collaboration is the launch of a new graduate internship program, which will send Environmental Studies masters and PhD students to East and South Africa for three months during the summers of 2013 and 2014. The first round of interns will be selected this spring.

Climate change is widely agreed to be one of the most concerning humanitarian challenges of the coming century. However, as climate science and research on possible adaptation and mitigation measures are



produced at a rapid rate, there remains a significant gap in the ability of decision-makers to translate science into policy that reduces disaster risk and enhances disaster relief. This is partly due to lack of technical expertise, since navigating amongst the wide array of available knowledge related to extreme weather and climate change can be overwhelming and inaccessible. Enter: the RCRC CC graduate internship program. This partnership with RCRC CC aims to help close the science-policy gap and increase climate science communication by integrating access to cutting-edge research on climate change adaptation and field-placement of UCB graduate students into RC regional field offices in Africa and Central/South America.

The two central themes of this internship program are improving climate change communication and adaptation decision-making within the humanitarian sector in response to current and future climate variability. Environmental Studies graduate interns will tailor their experience so that it contributes to their graduate research, contributing in some way to the body of humanitarian decision-making knowledge. Possible graduate student projects may encompass topics such as how scientific information is used in decision-making, the communication of uncertainty, perceptions of risk, and methods for characterizing vulnerability and adaptive capacity. The internship program envisions the graduate students as critical conduits to connect academic research on climate science communication and adaptation with Red Cross staff who are working to establish more effective methods for preparing for and responding to climate change and extreme weather events. In this way, a mutually beneficial



opportunity is created: graduate students will gain valuable experience and substantive data for their research, Environmental Studies faculty will be able to expand the scope of their own research, and the Red Cross Climate Center staff will gain expanded access to information and tools to support their work in preparedness and adaptation.

The program is expected to have wide-reaching impacts. The RC Climate Centre coordinates information on climate change for the International Federation of Red Cross/Red Crescent (IFRC) Societies, which is the largest humanitarian organization in the world with a network of 187 National Societies and over 13 million volunteers. The RC Climate Centre provides access to information and resources to improve understanding of the humanitarian consequences of climate change and extreme weather events. In this way, countless individuals around the world could benefit from this project.

The project is led by two ENVS faculty members, Max Boykoff and Lisa Dilling, as well as ENVS PhD student Meaghan Daly, who worked professionally with the RC Climate Center.

Said Boykoff, "We're pleased to have this opportunity to collaborate with the Red Cross Climate Centre. This endeavor will benefit students greatly by providing these avenues for field work along these themes, and the Red Cross Climate Centre will benefit through students' fresh perspectives, critical insights and productive contributions."

The RCRC internship program was made possible through the generous donation of CU graduate Christopher Meloni and his wife, Sherman Williams. Alumni donations such as this create opportunities that are invaluable to environmental studies graduate and undergraduate students, who will be the environmental decision makers of tomorrow. To support this and other important programs through CU Environmental Studies, please visit our donation page.

RED CROSS/RED CRESCENT CLIMATE CENTRE
University of Colorado Boulder
RED CROSS/RED CRESCENT CLIMATE CENTRE INTERNSHIP PROGRAM

To learn more about the Environmental Studies graduate internship program through Red Cross/Red Crescent, please visit: sciencepolicy.colorado.edu/students/redcross/about.html. Additionally, you may find information about the Red Cross/Red Crescent Climate Center here: http://www.climatecentre.org/site/about-us

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Classroom Notes: Dr. Litt's mock congressional hearing on environmental health policy

Article by Dr. Jill Litt, Assistant Professor, Environmental Studies

Over the past several months, I have had the pleasure of working with 25 undergraduate ENVS majors through an upper level capstone course entitled 'Environmental Risk and Public Health.' The aim of this course was to understand the tenets of risk assessment methodologies and to use these methods to evaluate contemporary hazards in our everyday environments. These hazards they chose to examine varied and included methyl mercury in fish, chromium and arsenic in drinking water, pesticide residues, and polybrominated diphenyl ethers (PBDEs), also known as flame-retardants. As part of this course, students selected a chemical such as methyl mercury, created a scenario for exposure and then sorted through toxicological and epidemiologic data, exposure data and risk information to contemplate these hazards and estimate whether they were harmful or not, given the conditions specified in their scenarios.

For example, one of the students in this course chose to evaluate exposure to glyphosate (a chemical in herbicides) in his hometown in Southern California. He proposed a scenario that involved children attending a childcare center downwind from a sprawling orchard. This student was interested in understanding potential exposures from inhalation and ingestion of dusts contaminated with glyphosate. By using scenarios such as this, students learned to identify environmental health hazards, assess exposures, and calculate potential risks. Through this process they became familiar with a range of data sources from the National Library of Medicine and from published epidemiologic and animal literature, then used this information to generate knowledge about a range of chemicals and the uncertainties associated with these studies.

I then asked these budding risk scientists to turn their attention to a contemporary risk situation – the waste generated from coal-burning power plants. This coal combustion material, also known as "fly ash," does not get a lot of attention because it is stored in large containment areas in remote areas of the United States. However, the amount of these aging containment areas across the United States is prolific (hundreds), and they contain low concentrations of toxic substances including arsenic, chromium, lead, and mercury. In December 2008, the nation awakened to the startling news of one such aging containment area failing, in which 5.4 million cubic yards of coal fly ash overflowed a retention pond, wreaking havoc on the nearby community of Harriman, Tennessee and the surrounding environment. Suddenly, the regulatory spotlight shifted to the US Environmental

Protection Agency (EPA) to understand how something like this could have happened.

The public soon learned that fly ash is pervasive, abundant, toxic, and lacks a comprehensive regulatory framework to guide its management. It also learned that with adequate protections in place, some of the stress on fly ash storage facilities could be alleviated if there were incentives in place to recover fly ash and reuse it in the production of concrete, structural fill, soil amendments and feedlot applications. The public also learned that until regulatory clarity is achieved, fly ash might not realize its potential for reuse. The EPA is now in the midst of a rulemaking on coal ash, due to the regulatory uncertainty of fly ash and mounting concerns following another industrial disaster – the Kingston Fossil Plant Spill of 2008.

Given the timeliness of this issue, our ENVS students set out to investigate the hazards of fly ash and evaluate the regulatory options currently on the table: 1) to regulate coal ash as a hazardous waste, or 2) to manage it as a solid waste and thus deem the waste non-hazardous. To develop positions on this issue, students formed five groups representing various perspectives –Xcel Energy, the Sierra Club, Earth Justice, the US Geological Survey, and Recycling First. They conducted interviews with leaders from these various organizations to understand the full range of challenges associated with the various regulatory options now being contemplated. Students then prepared testimonies communicating their positions on these issues.

Dressed in suits and ties, the students filed in, armed with persuasive visuals and graphs and thorough written testimonies.

During the second to last week of class, these 'witnesses' were called to testify in a mock Senate hearing. Tom Yulsman (Associate Professor of Journalism and faculty member in ENVS), Ms. Gail Frankfort (a senior auditor in the class), and I served as the Senate panel. Dressed in suits and ties, the students filed in, armed with persuasive visuals and graphs and thorough written testimonies. Over the course of three days, the students shared their views and challenged their peers on the merits of their respective arguments. Although the students were skeptical about this project and the utility of this congressional hearing, they left with tremendous sense of satisfaction and optimism about how they might be able to influence policy, how they could use their training in Environmental Studies, and how they need to learn about and listen to all sides of an issue. Through post-hearing discussions and our class debrief, the students overwhelmingly agreed that the regulatory path to managing fly ash must consider and weigh heavily options that support re-use. The students felt that a policy position against recycling of fly ash is a policy position against the environment.

This type of capstone experience in ENVS in invaluable. The growth I observed over the course of the semester was tremendous and represented development not only in a core knowledge area – the risk sciences – but also reflected a cohesion among the students as they worked together in a

respectful and productive way. It also tapped into communication and critical thinking skills as students were forced to contemplate a vexing environmental policy issue. This experience also exposed the talents of our students as they got to exercise a range of skills that had been relatively dormant over the course of their first three years at CU. I am grateful for our community of partners from Xcel, local non-governmental organizations such as Clean Energy Action, Recycling First, the US Geological Survey for working with our students, lending their time and perspectives and helping our students to reach outside of the walls of the CU Boulder campus to contemplate contemporary environmental and public health problems.

Dr. Litt is Associate Professor at Colorado School of Public Health and Assistant Professor of Environmental Studies at CU Boulder

Environmental Studies Program | University of Colorado Boulder
303-492-7510 | envs@alumni.colorado.edu | http://envs.colorado.edu
Arts and Sciences Office Building 1, 1201 17th St, Boulder, CO 80309