

THE GREEN LEAF

Department of Environmental Science
University of San Francisco

Spring 2010

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Important Dates:

1/23/10 Session A starts
1/25 Undergraduate classes start
2/12 Census day
2/25 José de Acosta lecture with Daniel Kammen
3/21 Session B Starts
4/12 Last day to drop classes
4/19 Fall registration
5/13 Last day of classes
5/20 MSEM Project Presentations

Third Annual José de Acosta Lecture by Dr. Daniel Kammen: Innovations for a Low-Carbon Society

The annual José de Acosta lecture series was initiated through the generous donation of USF Alumna and Board of Trustees member Michelle Skaff and her husband Dan.

This year's de Acosta lecture will be given by Dr. Daniel Kammen on February 25th in the McClaren Complex. His presentation, titled "Innovations for a Low-Carbon Society," will start at 7:00 pm, preceded by a reception at 6:30 pm.

Dr. Kammen is a Professor in the Energy and Resources Group, the Goldman School of Public Policy, and the Department of Nuclear Engineering at the University of California, Berkeley. He co-directs the Berkeley Institute of the Environment and is the Founding Director of the Renewable and Appropriate Energy Laboratory (RAEL) at UC Berkeley.

After earning his bachelors degree in physics from Cornell University (1984) and his M.A. and Ph.D. in physics from Harvard (1986 & 1988), Kammen held postdoctoral and faculty positions at Caltech, Harvard, and Princeton before joining the faculty at Berkeley in 1998.

Dr. Kammen advises the U.S. and Swedish Agencies for International Development, the World Bank, and the President's Committee on Science and Technology, and he is a member of the Intergovernmental Panel on Climate Change (Working Group III



and the Special Report on Technology Transfer). He has been featured on radio, network and public broadcasting television, and in print as an analyst of energy, environmental, and risk policy issues.

Dr. Kammen's research interests include: the science, engineering, management, and dissemination of renewable energy systems; health and environmental impacts of energy generation and use; rural resource

management, including issues of gender and ethnicity; international R&D policy; climate change; and energy forecasting and risk analysis. He is the author of over 90 journal publications, numerous reports on renewable energy and development, and a book on environmental, technological, and health risks (*Should We Risk It?*, with David Hassenzehl). In addition to his research, he teaches courses including "Environmental Classics" and "Energy and Society."

Dr. Kammen's talk will focus on the intersection of energy technology, policy, and economics. With his interdisciplinary approach, Kammen is considered one of the world's leading experts on energy issues, as evidenced by his recent contribution to the "2020-Visions" series in the journal *Nature*. We invite you to his presentation on the 25th, as we all look forward to learning more about strategies toward achieving a low-carbon society.

JOSÉ DE ACOSTA LECTURE

When: February 25th

Where: [McLaren, Room 252](#)

Time: Reception at 6:30pm,
Lecture at 7:00pm

From the Chair and Graduate Program Director...

The Spring 2010 issue of the USF Department of Environmental Science's Green Leaf newsletter is our fifth issue. We've established a solid tradition and hope you enjoy learning about on-going activities within our programs here at USF.

In this issue we highlight the undergraduate capstone courses in both Environmental Science (p. 6) and Environmental Studies (below), two outstanding programs that allow students to directly engage in local environmental issues. The Environmental Science capstone will be putting to use some of the new instruments purchased last year, including the discrete analyzer for measuring nutrient concentrations. Other instruments have also been used or will be used in Air and Water, and Restoration Ecology.

On the Master's side of the Department, we soon will be reviewing applications for Fall 2010 and we expect a large number of applicants, as we have seen in recent years. Based on interest from information meetings over the last four months, we are likely to equal the record number of applicants that we received for fall 2009. For MSEM courses, we have added a new course in Water Policy which has been very popular. Please mark your calendar for the Master's Project Presentations on Thursday, May 20th. We will have over 20 project presentations that evening.

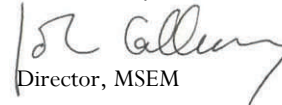
Finally, we encourage you to join the Department on Thursday February 25th for the third annual Jose de Acosta lecture featuring Dr. Daniel Kammen. This has been an outstanding event in previous years, and it's sure to be another interesting presentation and opportunity for discussion of national energy and carbon issues.

William Karney



Chair, ENVS

John Callaway



Director, MSEM

Environmental Studies capstone works with the Booker T. Washington Community Center

BY: MELINDA STONE

The Environmental Studies (ENVA) capstone course has historically been designed as a service-learning course that involves students in a local project that puts environmental studies course knowledge to practice. The spring 2010 ENVA capstone course follows in that tradition by working with Booker T. Washington Community Center (BTWCC), located just off the intersection of Geary and Presidio (a five-minute bike ride from campus). The class will spend the spring semester rehabilitating a community garden that was installed at least 10 years ago by the San Francisco League of Urban Gardeners (SLUG) and not tended to since SLUG disbanded six years ago. In addition to rehabilitation efforts, students will also design plans for an expansion of the current garden and work with the center staff to configure long-term strategies for community management of the garden.

It is unfortunate that there has not been a concerted effort by city officials or garden enthusiasts to designate a replacement for the much needed services of SLUG, especially at a time when so many city residents are eager to incorporate the growing of food into their lifestyle. In light of this gap in city-wide urban gardening infrastructure, the students in the capstone course, while rehabilitating the BTWCC garden and coming up with designs to expand the current garden, will be digging into the current issues that surround and influence urban agriculture.

Visits to a wide variety of urban gardens, from educational spaces to small business ventures, are planned, with a focus on understanding the myriad of ways individuals access land, tend to crops, distribute food, and sustain their practice within the city limits. A round table discussion on urban agriculture is also planned for

March 2, bringing together Paula Jones, the director of the San Francisco Department of the Environment; Blair Randall, director of Garden for the Environment; Amy Franceschini, founding member of Futurefarmers; Tree, director of the Treat Commons Free Farm Stand; and Brooke Budner, co-founder of Little City Farms. The idea fueling this round table discussion is a desire to better understand how these individuals, across disciplines and economic platforms, envision the state of urban agriculture in San Francisco and to create a dialogue with the capstone students about how they can become a part of creating a more vibrant, sustained future for urban food production and distribution. This round table discussion is open to the public. If you are interested please contact the ENVA department to receive more information.

Story continued on next page

USF's Garden Project

BY: MELINDA STONE

Thanks to the generous support of the College of Arts and Sciences, the USF Garden Project made tremendous progress this past season. The Project was started two years ago and engages undergraduates to grow food at USF as part of the Residential Learning Program. With the hire of Justin Valone to manage the garden over the summer and now as a member of the teaching team in the living/learning community, the garden has blossomed into a bountiful array, offering fruits, vegetables, herbs and flowers, which are all now available to the university community through the USF Garden Project Thursday Farmstand. We have



Students examine soil in USF's garden

successfully installed drip irrigation in all the beds, and the management of the community plots is going well. With Dean Bloch's help, we have established a Garden Project Advisory Board. Further, the space continues to host classes interested in utilizing the garden as a teaching tool (a great example is Eveyln Ho's From

Acupuncture to Yoga class who utilize our herbs for demonstrations) and Wellness Workshops for the USF campus community (the most recent one was a seed exchange). The current Garden Project students are successfully managing a weekly farmstand, providing bi-monthly servings for Food Not Bombs in Golden Gate Park, and creating a bike cart to ferry all of the goods.

As the Garden continues to grow and thrive, we are interested in having students document the growing process - from preparing the soil and planting the seeds to tending the crops, harvesting the food, cooking meals and canning surplus. This semester David Silver has been teaching the Garden Project and has worked with students to do just this.



Students ready a compost area for USF's garden

In addition to documentation projects, this spring will also see the building of a simple outdoor kitchen and seating area. The purpose of the garden kitchen project is to not only provide a space for students to prepare produce for their market, but to illustrate that a simple structure can be elegantly constructed from sustainable materials and processes - all from SF County. Incorporating recycled 2'x4's and metal roofing, local un-milled wood, urbanite (broken concrete), and locally sourced sand and clay, the outdoor kitchen will be simple to construct, non-toxic, and built of the local SF landscape. Once complete, it will be an inviting, sustainable place to enjoy tasty treats from an inviting, sustainable garden.

Booker T. Washington Community Center Continued

Students began the semester by meeting with the director of BTWCC, Pat Scott and the youth program coordinator, Jerry Trotter, to listen to what they envision for their garden. Observing the ¼ acre site behind the community center building and understanding how wind, sun, rain, noise, and traffic influence the area is next, followed by soil tests, assessment of water

catchment possibilities and tons of weeding. While rehabilitating the garden area that exists, students will also begin to design and plan a garden expansion, complete with orchard, seating area, small greenhouse and toolshed, worm bins and an easy to manage compost system.

The relationship between USF ENVA and BTWCC is seen as a long-term partner-

ship, with this class as the inaugural group initiating this exciting and fruitful project. The end goal is to create a garden and infrastructure that allows the BTWCC to manage their garden through after-school programs and other community engaged initiatives.

Undergraduate Alumni Profiles

ENVS: Vivian Chang



Vivian Chang graduated from USF in 2005 with a Bachelor of Science in Environmental Science and Political Science.

Between 2005 and 2006, she was a Resident Minister in Lone Mountain while working full time as a LISC AmeriCorps commercial corridor manager for San Bruno Avenue. She helped form a neighborhood steering committee to address areas of greening, safety, economic development, and language accessibility in

the predominantly low-income, monolingual, immigrant Portola neighborhood.

From 2006 to 2008, Vivian attended the University of Washington for her Master's Degree in Urban Planning. Her internships including working with the Department of Natural Resources for King County, the City Green Team and the Design Commission in Seattle's Department of Planning and Development. Her interest in sustainable development led to her thesis topic on LEED-ND (Leadership in Energy and Environmental Design-Neighborhood Development).

Upon graduation from UW, Vivian moved back to her hometown and was hired to work as a senior planner for the Chinatown Community Development Center in San Francisco, where she cur-

rently works. Some projects that are in the works include the Central Subway MUNI extension project, planning neighborhood promotional events (e.g., street fairs), interviewing merchants, monitoring business vacancies and new openings, compiling reports on quality of life, planning for public art, and much more.

She resides in the Sunset and bikes to work, weather permitting. During evening and weekends, she is often seen walking her happy pitbull, Max, around the neighborhood.

ENVS: Samantha Engelage



After graduating from the Environmental Science program at USF in 2005, Samantha pursued her water quality interests and entered graduate school at the University of California, Berkeley (UCB) for her Master's degree in Civil and Environmental Engineering. During her graduate studies, Samantha worked in the Earth Sciences Division of Lawrence Berkeley National Laboratory (LBNL). As a Gradu-

ate Student Researcher, her research focused on algal growth kinetics and sources of oxygen demand in the San Joaquin River Watershed, CA. In her spare time, she worked with fellow students and LBNL colleagues on developing a low-cost solar water heater for use in Guatemala.

Following her graduation from UCB in 2006, Samantha joined LBNL full time where she investigated disinfection by-product formation potentials and biodegradability of carbon originating from various surface waters in the San Joaquin River Watershed, CA. Samantha enjoyed presenting the results of that study at various conferences and was very proud to have been recently published in a peer-reviewed journal.

Samantha recently left the research world and joined Central Contra Costa Sanitary District (CCCSD) as an Engineer. Her work to date at CCCSD has focused on

the design of future renovations to the wastewater treatment process and Household Hazardous Waste Collection Facility. Although much smellier than working in surface and drinking water research, Samantha has found her work in wastewater treatment to be a nice change in pace and enjoys knowing that her work is actively protecting public health and the environment.

On a personal note, Samantha got married last year and is looking forward to visiting every continent at least once during her future travels; three down, four to go!

Graduate Alumni Profiles

MSEM: Kurt Dreflak



In 1999 after working as a geologist for an environmental consulting firm for a few years, Kurt Dreflak had to choose between graduate

school and a possible career serving as a commissioned officer in the National Oceanic and Atmospheric Administration (NOAA). He chose NOAA and has not regretted the decision.

His first assignment with NOAA took him from Key West, Florida to St. John, Canada as a junior officer aboard the NOAA Ship *Delaware II*. From the decks of the *Delaware II* Kurt transferred to his next NOAA assignment in northern California to work in fisheries management as the GIS Coordinator in Santa Rosa, CA.

While serving with NOAA Kurt continued looking for educational opportunities and discovered the MSEM program at USF. Kurt graduated from USF's MSEM program in 2004.

Upon completing his assignment in California, Kurt moved on to become Operations Officer on another NOAA research vessel and then Port Captain in Honolulu, Hawaii.

Kurt looks forward to his next assignment in March, when he will meet the NOAA Ship *Oscar Elton Sette* in the eastern tropical Pacific to take over as Executive Officer. The *Oscar Elton Sette* primarily supports the Pacific Islands Fisheries Science Center and spends the majority of its time engaged in research missions in the Papahānaumokuākea Marine National Monument and the main Hawaiian Islands.

Kurt currently resides in Honolulu with his wife Zoe, son Alexander, and daughter Freyja. Kurt spends most of his free time chasing after his three year old son at such locations as the Honolulu Zoo, Waikiki Aquarium, and various beach parks.

MSEM: Brigid McCormack



After graduating from USF in 2008, Brigid McCormack set out to “repot” herself, from her position fundraising at Stanford University’s Graduate School of Business back into the environmental sector. Brigid’s master’s thesis focused on the im-

pacts of climate change on migratory bird species. Her conclusions from that research, led her to strongly believe that her professional efforts should be focused on climate change mitigation.

After an exhaustive informational interview and then formal interview process, Brigid accepted a job with a new foundation, ClimateWorks, focused solely on mitigation. ClimateWorks (<http://www.climateworks.org/>) is an international philanthropic network dedicated to achieving low carbon prosperity through policy. Brigid’s role as the director of development and strategic partnerships is multifaceted. Building on her fundraising experience, she stewards ClimateWorks three major funders. In addition, Brigid leads the strategy for external outreach and partnerships for the ClimateWorks Network which is comprised of eight global institutions.

In December of 2009, Brigid had the opportunity to represent ClimateWorks at the COP15 (UNFCCC Conference of Parties) negotiations in Copenhagen. Brigid was one of 45,000 NGO delegates, who converged on Copenhagen to witness the official negotiations. This was Brigid’s first COP, and it was compelling, overwhelming, and a powerful learning experience. She walked away with a very healthy respect for the difficulty of compromise between 192 nations with competing and sometimes counterproductive policies on how to best tackle climate change.

Brigid still cultivates her love of birds, though at this point it is mostly limited to those she spies in her backyard on Ocean Beach in San Francisco. She and her better half are spending their collective spare time planning a wedding in Yosemite in August.

Environmental Monitoring Class

BY: JACK LENDVAY

This year the Methods of Environmental Monitoring class will start a new project in collaboration with the US National Park Service (NPS). The project will focus on the evaluation of the water quality of Redwood Creek, the stream on Mt. Tamalpais that flows through Muir Woods National Recreation Area.

Foci for this project include deploying new water quality instruments that have the capability of sampling the water sev-

eral times a day over an extended period and using the data to evaluate the impact of a side tributary on the overall water quality of the creek; evaluating the effects of restoration efforts on water quality over a period of years as the NPS conducts the restoration of Muir Beach Lagoon, the wetland where Redwood Creek meets the Pacific Ocean; and supplementing the NPS's own water quality sampling on years when their resources are deployed in other park locations.

In addition to developing a complete long-term sampling program, a major challenge for this year's students is to develop the protocol that will insure sufficient quality assurance and quality control of the data to merit government acceptance of the data.

Indigenous Women and the Environment Lecture

TUESDAY, MARCH 9th

First First World

Indigenous Women and the Environment
6-8pm, [Berman Hall, Fromm Institute](#)

Speakers:

Morning Star Gali, Community Outreach Liaison for the International Indian Treaty Council, Oakland

Candis Callison, Journalist and Media Scholar, University of British Columbia

Sponsored by USF's Environmental Studies Program

Morning Star Gali, is a member of the Achumawi Band of the Pit River Nation and is also of Chiricahua Apache, Yaqui and Filipina (Ilocano) descent. She is a grassroots community organizer within her home, the Bay Area Indian community. She is currently the Community Outreach Liaison for the International Indian Treaty Council, working for the Sovereignty and Self Determination of Indigenous Peoples and the recognition and protection of Indigenous Rights, Treaties, Traditional Cultures and Sacred Lands. She recently served for the past two years as the Executive Chair of the Board of Directors of Intertribal Friendship House, one of the oldest urban Indian community center in the nation. In 2008 the Women of Color Action Network honored her in recognition of her work as an activist for Indigenous women.



Fall 2009 MSEM Master's Projects

Katherine Brandt	<i>Evaluation of Hexavalent Chromium Remediation Methods</i>
Jennifer Gallerani	<i>Using Multi-criteria Analysis (MCA) for the Selection of Climate Adaptation Options in California</i>
Kevin Hostert	<i>Challenges Associated with Developing Renewable Energy Transmission</i>
Ryan Mack	<i>Water Efficiency: A Practical Approach to California's Water Crisis for the Commercial and Institutional Sector</i>
Sergio Marquez Queirolo	<i>Production-based versus Consumption-based Greenhouse Gas Accounting, and Implications for International Climate Policy</i>

Faculty Profile

Allison Luengen

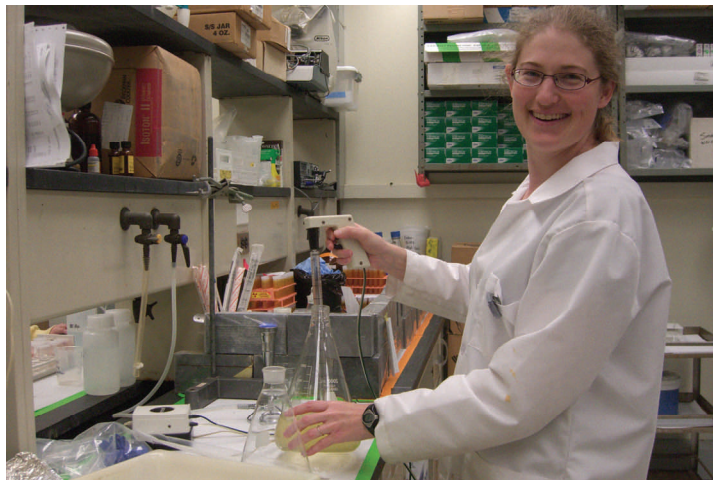
Allison Luengen joined the Environmental Sciences faculty at USF in Fall 2009. Prior to joining USF, Allison worked as postdoctoral researcher at Stony Brook University on Long Island, New York. Allison completed her Ph.D. in Environmental Toxicology, and her M.S. in Marine Sciences, both at UC Santa Cruz.

Allison draws upon her interdisciplinary background for her teaching. Her marine pollution class in the MSEM program last fall included an in-depth look at how cells accumulate metals, a process that links the biology of the cells with the chemical form of the metals. Currently, Allison is teaching an undergraduate course, Understanding our Environment, in which she is enjoying putting together biology, chemistry, some political science, and even some short writing pieces. Allison believes that one of the ways in which scientific breakthroughs occur is by putting ideas from different disciplines together. It is fun to teach in an Environmental Sciences program, where there is so much room to draw on different ideas, and the students bring so much to the table, from their own work experiences.

In the MSEM program, Allison also taught Environmental Chemistry last fall. Currently, she is teaching a section of the Masters' Project. In the future, she hopes to develop courses on Oceanography and Methods for Analyzing Water.

The move across the country brings Allison much closer to her field site: San Francisco Bay. Her current re-

search interests is understanding how methylmercury moves from the water into the phytoplankton, which are the microscopic algae at the base of the marine food chain. Allison is interested in this step because phytoplankton can accumulate up to 300,000 times more methylmercury than is present in surrounding waters. This makes phytoplankton the single largest step in methylmercury bioaccumulation and the



Allison using radiotracer techniques to follow the movement of MeHg between water and algal cells.

search, funded by CALFED, focuses on methylmercury in the San Francisco Bay Delta. Methylmercury is the neurotoxic form of mercury that biomagnifies in the foodchain and is responsi-

ble for many fish consumption advisories, both locally and nationally. Allison recently presented her research at the 2010 RMP Annual Mercury Meeting and at the 2009 SETAC Annual North America Meeting.

Allison is currently setting up her laboratory at USF. She will have instruments to measure both total and methylmercury, at the very low concentrations typically found in environmental samples. In water, methylmercury concentrations are often less than one part per trillion. Allison is looking forward to field sampling this summer.

In her free time, Allison enjoys sailing, reading, and photography. She is currently working on a series of black and white photos of bridges.

WARNING

Information about fish you, your family or friends catch in San Francisco Bay

<p style="font-size: small; text-align: center;">Pregnant women Breastfeeding women Children under 6 years</p> <p style="text-align: center; font-weight: bold;">1 MEAL A MONTH</p> <p style="font-size: x-small; text-align: center;">Do not eat more than one meal of SF Bay fish a month</p>	<p style="font-size: small; text-align: center;">Other Adults</p> <p style="text-align: center; font-weight: bold;">2 MEALS A MONTH</p> <p style="font-size: x-small; text-align: center;">Do not eat more than 2 meals (1 pound) of SF Bay fish a month</p>
<p style="font-size: small; text-align: center;">Do not eat striped bass over 27 inches long</p> <p style="font-size: x-small; text-align: center;">NO shark</p>	<p style="font-size: small; text-align: center;">Do not eat striped bass over 35 inches long</p>

For all San Francisco Bay fish except salmon, herring, smelt, and anchovies.

EAT SAN FRANCISCO BAY FISH SAFELY

Fish consumption advisory from San Francisco Bay.

Masters' Project Presentations: May 20, 2010

Please join us for the Spring 2010 Master's Project Presentations the evening of Thursday, May 20, 2010. There will be a reception beforehand. An official announcement with room locations will be emailed in mid-May. We hope to see you there!

MSEM Spring Courses

SESSION A COURSES

Sustainable Development/Environmental Management I	Rob Toia
Fire Ecology	Tracy Benning
Water Policy	Steve Ritchie
Environmental Law	Aaron Frank
Water Treatment	William Karney

SESSION B COURSES

Sustainable Development/Environmental Management II	Rob Toia
Ecological Sampling Methods	Andy Chang
Renewable Energy	Gordon Johnson
Soil Treatment Science and Technology	Harry Allen
Accelerated Intro GIS for Environmental Science	Tracy Benning
Hydrology, Geomorphology and Watersheds	Ken Schwarz

José de Acosta Lecture

We invite you to attend the José de Acosta lecture with Dr. Daniel Kammen on 2/25/10. Questions? Contact kpbaum@usfca.edu.

Department Information

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Environmental Science Alumni Updates and Contact Information

Name: _____

Alumni Update: _____

Address 1: _____

Address 2: _____

City, State, Zip: _____

Phone: _____

Email: _____

We'd like to include a large number of brief "Alumni Updates" in future issues. Please provide a short summary of your current position, new projects, etc. and return (fax, mail, or email) form to the Department of Environmental Science. Please include a photo of yourself with your submission. You can also use this form to update your contact information if necessary.