DEAR STUDENTS, ALUMNI AND SUPPORTERS

The Fall semester is well underway for the MSEM program at USF, and things are moving fast. We’ve finished session A, with one of the largest groups of incoming students in many years. Over both Spring and Fall semesters in 2015, the program has sponsored some outstanding events, including:

- De Acosta lecture, featuring an outstanding presentation by Dr. Peter Vitousek from Stanford University on traditional Hawaiian agriculture
- Master’s project presentations to finish the Spring semester, with over 25 students presenting (see MSEM Spring 2015 Master’s Projects)
- Commemoration of MSEM founder Joe Petulla’s contribution to the program, including memories from a number of early MSEM students and faculty, and the awarding of the first Joe Petulla award to the outstanding MSEM student of the class (congratulations to Kaitlyn Hacker)
- Panel discussion on energy issues (see article)
- Climatemusic event, featuring MSEM alumni (see article)

Besides these events, the program continues to expand the curriculum with a number of GIS courses and a new course for the spring in NEPA and CEQA compliance. Before long we will review applicants for the 2016 incoming class.

MEETING CALIFORNIA’S CLIMATE GOALS WITH ENERGY DEMAND-SIDE RESOURCES

On October 6, 2015, the MSEM program hosted a panel entitled: Meeting California’s Climate Goals with Energy Demand-Side Resources, co-sponsored by Environmental Science and Environmental Studies at USF. The panelists were: Matthew Tisdale, Advisor to the California Public Utilities (CPUC) Commissioner, Mike Florio; Manal Yamout, Vice President for Policy and Markets at Advanced Microgrid Solutions; and Curtis Seymour, Program Director for Power at The Energy Foundation. The panel was moderated by Paul de Martini, Senior Fellow, ICF International.

The panel provided valuable insight into how, in the rapidly changing California energy industry, demand-side resources (energy efficiency and storage), as well as renewable energy production, can help California meet its climate goals. These goals have been strengthened with the recent passage of SB 350, the Clean Energy and Pollution Reduction Act of 2015, which requires that 50% of electricity generated and sold to retail customers is produced by renewable energy resources by December 31, 2030, and that the state establish annual targets to achieve a “cumulative doubling of statewide energy efficiency...by 2030.” The previous goal in the state’s Renewable Portfolio Standard (RPS) was 33% by 2020. One of the strategies to achieve both of these goals is the integration of demand-side resources, the topic of current proceedings at the CPUC.

The panel discussed the rapid changes taking place in California’s electricity sector due to new technologies, markets, regulations, and price structures. Matthew Tisdale discussed the new renewable portfolio standards, progress in California’s de-carbonization of power, and challenges to the grid as renewable generation increases. Manal Yamout discussed the role of energy storage in leveraging distributed generation of electricity, and she highlighted Advanced Microgrid Solutions’ experience in using energy storage ‘behind the meter’ to alleviate peak loads and transmission losses on the grid. Curtis Seymour focused on the shift to the two-way flow of energy, modernized market policies, efficiency-based performance standards, and future models of energy businesses. Paul de Martini offered insights on re-shaping power sector business models to include distributed (customer-side) resources, and on developments in energy storage technology.

With active discussion among the panelists and audience, it was an interesting and informative event. We plan to have more panel events; please join us next time!

CLIMATEMUSIC PROJECT

If the climate had a voice, what would it sound like? Two MSEM alumni, Stephan Crawford and Velvet Voelz, have created a unique arts and sciences collaboration to find out. The ClimateMusic Project brings together leading climate scientists and artists who work with terabytes of climate data and the most advanced climate models to create engaging music that reflects the story of our climate—past, present, and future. Music is one of the oldest forms of human communication, and the project is using it to convey a powerful message that is crucially important for our species and our planet. The collaborative’s world premier concert took place at the Chabot Space & Science Center in Oakland on November 21st. The project has also been selected to participate in ArtCOP21, a global arts festival leading up to the COP21 climate negotiations in Paris. For more information about the project or future events, please visit: www.climatemusicproject.org.

Please mark your calendars for Wednesday, February 24 for the 2016 de Acosta lecture, with Dr. Jim White from the University of Colorado, Boulder. Details will be available soon.
I have been teaching full-time at USF since 1997, and in the MSEM program since 2001. My desire to teach crystallized early—right after my undergraduate years, I spent two years teaching high school chemistry and environmental science. Shortly thereafter, I earned a Ph.D. in Organic Chemistry from UCLA. My teaching interests have evolved over the years to include environmental chemistry and many offshoots from that, such as atmospheric chemistry and water treatment. I take special satisfaction in teaching the Environmental Chemistry course in the MSEM program because I know many people are uncomfortable or afraid of chemistry, and I like to show them they can do it. Some of that perhaps has roots in my own struggles with chemistry as an undergraduate. Teaching the introductory course inspired me to develop new electives such as Water & Wastewater Treatment and Instrumental Analysis of Environmental Samples. In all my classes, I emphasize fundamentals, in-class problem solving, and connections between different topics.

My research is strongly rooted in organic chemistry. With my wife and colleague, Professor Claire Castro (Chemistry), I run a joint research program that involves using computational chemistry to study the mechanisms of organic reactions. Our focus has shifted from probing molecules of theoretical interest to investigating mechanisms of high-temperature reactions of hydrocarbons. With the USF undergraduates that comprise our research group, we study the detailed steps involved in the formation and rearrangements of polycyclic aromatic hydrocarbons (PAHs) during combustion. PAHs are also involved in production of soot, and many of them are carcinogenic. Our work aims at a better understanding of the generation of PAHs from flames and engines.

When I first entered the building industry, I worked as an Energy Auditor, evaluating not just the energy use of a building, but also its indoor air quality, durability, and combustion safety. After thorough observation and testing, I put together proposals to make the home perform optimally in all those categories, which would inevitably result in a cleaner and more comfortable home that is less expensive to operate. With the advent of Energy Upgrade California in 2010, I took on the role of Quality Assurance Verifier for PG&E and the Sacramento Municipal Utility District, evaluating completed retrofits and working one-on-one with contractors to promote deeper understanding of building science principles and skills as they apply to Home Performance retrofits.

Throughout the time I have worked in this industry, I naturally gravitated to a teaching role. I have trained crews on the job, contractors hoping to improve their skills, community college students looking for a new career, and of course MSEM students increasing their understanding of the role of energy in the built environment. One of my more gratifying training positions has been with Rising Sun Energy Center, a non-profit green workforce development organization. Rising Sun works with state and local governments, corporations and other organizations to make free and low-cost energy-efficiency training available to those who need it most. I have been working with this dedicated organization since 2013 as a green construction skills energy-efficiency specialist. My trainees and I spend time in the classroom and lab, as well as going onsite to Habitat for Humanity projects and to clients’ homes to do real-time Energy Auditing work.

In addition to this, I am a certified trainer and proctor for the Building Performance Institute, which sets the national energy auditing standards for state and local rebate programs. In my free time, I sing in a chorus and play taiko, and I renew my spirit watching the millions of migrating birds come through the Central Valley every winter.

WE WANT TO HEAR FROM YOU

Let the MSEM community know what you are up to.

Email your latest news:

msem@usfca.edu
CURRENT STUDENTS

LILIANA MEJIA-BARBARAN
I hold a B.S. in Environmental Engineering from the Federico Villarreal University in Lima (Peru). Since I moved to California from Lima six years ago, I wanted to enroll in the MSEM Program. I knew it would help me transition from working in the environmental compliance field in Peru and continue my career in the US. I believe I’m making a difference by ensuring the environmental regulatory requirements are met by industry, so I am determined to continue my education in this realm.

This is my second year in the MSEM program. Even though being a full-time employee while in the program is very challenging, I'm able to apply what I'm learning in the program to my job as a Hazardous Waste Program Specialist for the County of San Mateo. I was very excited to learn that the program offers a concentration in Environmental Health and Hazards, which fits perfectly with my area of expertise. I've already completed all the credits I need for the concentration, with classes in Risk Assessment and Management, Emergency Response, and Environmental Engineering. These classes have strengthened my understanding and knowledge of environmental policy and regulations and have improved my analytical and critical skills.

The MSEM Program has helped me open my eyes to other environmental topics, such as climate change, energy, and conservation. I really value the opportunity to learn from my peers’ experiences in other fields. I love to work in public service: I hope to provide my knowledge and skills to improve and develop regulatory requirements to protect human health and the environment. I feel that the MSEM program is given me the knowledge and tools to accomplish this goal.

CARLY FERRO
I am an East Coast native with a B.S. in Biology from James Madison University. I have taken on a range of work roles from R&D to assisting in EIS analyses and conservation planning in four states. Throughout my professional career I have witnessed a gap in communication among scientists, policy makers, and people in the business sector.

My experiences motivated me to enroll in the MSEM program to advance my skill set and work towards bridging communication gaps that could strengthen and implement strategies for effective management of sustainability, both economic and environmental.

The MSEM program has provided me with knowledge, skills, and competencies so that I will be able to function in multiple settings. This program has provided practical learning that has highlighted the growing demand for integrative solutions for the dynamic issues we face. The program has even allowed me to step outside of the MSEM coursework and undertake a challenge with upper-level environmental law courses. I feel the faculty and staff have really taken into account my interests and goals and supported my individual growth.

After a year of the program, my thinking has broadened beyond static scientific analysis and now works to integrate balancing the attitudes of businesses and policy agendas to better outfit the management of natural resources. I have long had a passion for enjoying the environment and look forward to my future career protecting it.

RILEY MOFFATT
I am currently a second-year student, focusing on fresh water policy and watershed management. My dream has always been to find a career that helps to better manage our scarce and ever more important water resources. The MSEM program has been wonderful in providing the background education I needed in my first year, from classes like Environmental Chemistry to Ecology to Statistics. In my second year, I have begun to focus in on my passion, taking courses like Hydrology and Watershed Management, which are helping to prepare me for my desired career path and laying the foundation for my Master’s project in Spring.

As an older student returning to academia after a substantial break, and in need of balancing many life aspects, I have found the flexibility and ‘real-world’ style of the program is a great fit and is helping me to achieve the goals I have laid out. In spring I look forward to developing my Master’s project in water resources, graduating, and leveraging my degree and skills into a career serving the environmental interest and resource needs of our local communities and the state of California.
I am a Project Manager at Energy Solutions, where I work on three really cool projects. For the California Energy Commission’s Bright Schools Program, I perform energy audits at public schools around the state to help them spend Prop 39 funds effectively on energy efficiency improvements. The second project is a digital billboard energy use study, where my team and I evaluate digital billboard energy consumption and technological improvements to reduce energy use, and model potential benefits of a utility incentive program. I am also part of the Investor Owned Utilities Codes and Standards team. I just submitted my first official comment letter to the California Energy Commission proposing a performance and efficiency standard on small diameter directional lamps.

Since graduating from USF’s MSEM program, I have been working at the Alliance to Save Energy’s Education Department. The Alliance is one of the nation’s leading energy-efficiency focused non-profit organizations. My office in Oakland works with 16 universities across California to implement energy efficiency projects, provide hands-on training internship opportunities to students, and educate the student population about sustainability. Both my coursework and Master’s project have played a huge role in my ability to do my job. I attribute most of my knowledge about energy efficiency and overall sustainability to the excellent faculty in the MSEM program.

As USF’s first Sustainability Coordinator, I am developing the new Office of Sustainability and leading the implementation of the University’s Climate Action Plan, which commits the university to achieving carbon neutrality by 2050. My goals for this year are to overhaul the university’s waste collection bin system, work with Student Housing and Residential Education on waste diversion and water conservation campaigns in the residence halls, and revitalize and expand a green office certification program for the various departments and centers on campus. I will be working with Facilities to pursue low-hanging fruit projects, such as faucet and lighting retrofits, and I am also involved with a plan to install a new bike enclosure on campus.

A significant part of my job will be to develop and foster a culture of sustainability on campus, so I will be collaborating with Student Leadership and Engagement, academic programs, and university departments to create new campus sustainability programming and events throughout the year. I would also like to work with faculty groups on integrating campus sustainability efforts into the curriculum or involving groups of students with specific campus sustainability projects.

I was just promoted to be the Sanctuary Advisory Council (AC) Coordinator as well as a Climate Specialist with Greater Farallones National Marine Sanctuary! As the AC Coordinator, I run our advisory council, which is a community-based body made up of members who represent public interest groups, local industry, commercial and recreational user groups, academia, conservation groups, government agencies, and the general public. Through meetings, working groups, advisory committees and retreats, the council advises the Sanctuary Superintendent and Program Coordinators on management and prioritization of the Sanctuary’s marine resources. Each national marine sanctuary has one of these councils, so I have daily opportunities to liaise with other sites as well to collaborate with Sanctuary staff in Washington, DC.

I am also joining the Ocean Climate Initiative team here at the Sanctuary to implement the objectives of the Sanctuary’s Ocean Climate Indicators and Monitoring Inventory and Plan; this includes integrating ocean climate indicators into our existing research and education programs, analyzing and interpreting ocean climate data, translating it into management strategies, conducting climate change vulnerability assessments of Sanctuary resources and habitats, and collaborating with other Bay Area climate organizations to address these issues. I’m very excited to get involved in the adaptation and management areas and put my MSEM degree to work! I should also have some opportunities to implement my Master’s project research on Olympia oyster restoration within the Sanctuary.