Carnegie Mellon
STEINBRENNER INSTITUTE
for Environmental Education & Research

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Steinbrenner Institute Welcomes New Faculty Director

New Steinbrenner Institute Faculty Director Neil Donahue

Carnegie Mellon University recently named Neil Donahue as the new director of the Steinbrenner Institute for Environmental Education and Research (SEER). He succeeds David Dzombak, who recently assumed leadership of the Department of Civil and Environmental Engineering.

Donahue, who joined the faculty in 2000, is an internationally recognized expert in atmospheric chemistry and air-quality engineering. With more than 150 peer-reviewed publications, his research focuses on the behavior of organic compounds in the atmosphere, ranging from fundamental quantum chemistry to the way chemistry forms molecules that stick to particle pollution, such as wood smoke and diesel emissions. His latest research has focused on chemistry that forms particles literally out of thin air–known as nucleation–as part of an international team called the CLOUD consortium at the nuclear physics laboratory CERN in Geneva, Switzerland. We asked Neil to give us his thoughts on his new position as SEER Faculty Director.

Selected Content:

Hello from Neil Donahue, New SEER Faculty Director

Welcome to Winter! I am thrilled to be taking on the responsibility of directing the Steinbrenner Institute for Environmental Education and Research. I am especially keen to continue to explore ways to strengthen SEER's role in enabling cross disciplinary research related to environment and sustainability across the full breadth of research and education here at Carnegie Mellon. By way of introduction, I am an atmospheric chemist, trained as a meteorologist, and I have been in the departments of Chemistry, Chemical Engineering, and Engineering and Public Policy since 2000. Before taking on SEER, I was the director of the Center for Atmospheric Particle Studies (CAPS). In CAPS we have made substantial contributions to the growing understanding of how fine particles participate in both climate change and adverse human health effects.

I was recently on a panel in Donora PA recognizing the 65th anniversary of the Donora Smog over Halloween of 1948. That was one of the seminal events in the post-war recognition that air pollution was a severe and pressing problem. Along with the subsequent Great London Smog of 1952 it set in motion policy changes that eventually led to the Clean Air Act of 1970. The commemorating event had a panel that included environmental researchers and also an energy industry representative.

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Steinbrenner Institute Welcomes New Faculty Director

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We were asked about pressing environmental problems of today, and I offered my opinion that decarbonizing our energy infrastructure was urgently needed. Enormous climate change is upon us, and it will steadily get worse. Because emitted carbon remains in the atmosphere for hundreds and even thousands of years, the only way to slow it down is to stop emitting carbon dioxide. We need to start the process now, as rapidly as possible. There are huge challenges, but also tremendous opportunities for innovation and entrepreneurship. There is also a huge need for communication and education. The science on this subject is unequivocal, and once we get our society past smoke screens and misinformation, I am convinced that we can make incredible progress quickly.

The industry colleague on the panel responded (I paraphrase, but only slightly) "We can believe the doom and gloom, but even if the science is right we are going to have to burn abundant, cheap coal for a long time." I do not paraphrase about "doom and gloom." I almost laughed out loud. Yes, there is trouble ahead if we just keep plowing along the business as usual path, but there was nothing gloomy about my statement, and I do not think we are doomed. Far from it. However, if we keep on with stock answers and fail to listen to each other, we are in trouble. We have to stop debating and start collaborating to find feasible solutions. It is that work, across disciplines, with education, research, and innovation, that I hope to encourage and support at SEER.

Offsetting the Greenhouse Effect: CEE Achievements in Carbon Storage Research

Carbon Capture image provided by Larry Scott, Colorado Geological Survey.

Carbon dioxide is in the air, and no one is smiling about it. As levels of atmospheric carbon dioxide (CO_2) continue to rise at a sobering rate, Civil and Environmental Engineering (CEE) researchers are exploring a bold technique that could play a key role in global greenhouse gas reduction. The technique is known as carbon capture, utilization, and storage, or CCUS, and has a straightforward objective: capturing CO_2 and storing it underground before it makes its way to the atmosphere. Through the collaborative efforts of the NETL-RUA, a partnership between the National Energy Technology Laboratory and five nationally-recognized universities (CMU, Penn State, Pitt, Virginia Tech, and WVU), a team of CEE researchers and NETL scientists are researching the potential benefits and risks associated with CCUS.

CCUS: What It Is and Why It Matters

In carbon capture, utilization, and storage, CO_2 is "captured" from emissions from industrial sites such as power plants, physically compressed, and injected into brine-filled aquifers and reservoirs far beneath the earth's surface. This prevents the captured CO_2 from entering the atmosphere and contributing to the greenhouse effect, in which adding heat absorbing gases such as CO_2 to the atmosphere warms up Earth's surface*...continues on page 3*

Offsetting the Greenhouse Effect: CEE Achievements in Carbon Storage Research

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An advantage of CCUS is the sheer scale of its operations; the Intergovernmental Panel on Climate Change estimated in a 2005 report that CCUS could account for up to 55% of world efforts to mitigate the greenhouse effect. However, because the process is complex, researchers need a good understanding of the associated risks—in particular, how and where CO_2 leakage might occur—before it is widely implemented.

CEE Department Head and Walter J. Blenko, Sr. University Professor Dave Dzombak is one of the CEE faculty members researching CCUS as part of NETL-RUA's wellbore integrity program. In 2005, he was contacted by NETL researcher Brian Strazisar, who was leading the NETL efforts on wellbore integrity, to collaborate on CCUS because of Dzombak's reputation in this area of research. The team evolved to include CEE Professor Greg Lowry and NETL Research Scientist Barbara Kutchko (CEE '08), then a CEE doctoral candidate. Dzombak noted that the scale of the project has allowed those involved to form a clear picture of the technique's challenges and opportunities. "What is unique about the CEE approach is that we have a critical mass of people under one roof working on key components of the issue of CO_2 leakage and risk assessment," he said. "We have the whole picture here, from the high-level risk model down to the individual processes involved in CO_2 storage."

The Unlikely Tie Between CCUS and Cement

Dzombak's CCUS-related research deals with the integrity of wellbore cement, a critical factor in the technique's success. Oil and gas fields contain hundreds of abandoned wells that are typically filled with cement—known as wellbore cement—once exploitation of the underlying reservoirs is completed. These depleted oil and gas reservoirs are desirable CO_2 storage sites for several reasons: They have a high storage capacity, and injecting CO_2 into a reservoir makes it easier to extract the remaining oil and gas in a process known as enhanced oil and gas recovery. Because the cement-filled wellbores penetrate the reservoirs, they are considered to be a likely point of CO_2 leakage, and Dzombak and his collaborators at CMU and NETL are studying the cement's ability to withstand the effects of stored CO_2.

"When CO_2 is compressed and injected into the ground, it may become supercritical – a high-pressure substance between a gas and liquid state," he explained. "We are looking at the potential of supercritical CO_2 mixed with brine contained in the reservoirs to degrade the cement used to fill these wells."

From 2005 to 2008, the team recreated the temperature and pressure conditions found in these reservoirs and then exposed cement to those conditions in a laboratory setting. Though they expected to find evidence of rapid erosion of the cement, their one-year experiment yielded more positive results: The alteration occurring in the cement as a result of the CO_2 was extremely slow, and did not feature the rapid degradation they were expecting.

"By understanding how CO_2 interacts with the wellbores, and what the impact is on overlying aquifers, we can improve the science base for CCUS risk assessment," Dzombak said. "This knowledge will be critical to the public dialogue on reducing atmospheric CO_2."

**Story first appeared at ce.cmu.edu and is a part of a three part series exploring carbon capture, utilization and storage*

Food Justice Activist LaDonna Redmond Visits Carnegie Mellon

On October 28, 2013 Carnegie Mellon welcomed food justice activist LaDonna Redmond to campus. Redmond's visit was the first installment in the 2013-2014 Distinguished Lecture Series in Environmental Science, Technology, and Policy. The theme of the lecture series for this academic year is "Food and the Environment". Redmond who has been named a *Food Innovator* by TIME magazine and is a W.K. Kellogg Food and Society policy fellow, spoke to students, faculty and staff about the what she calls "historical trauma" in relation to food production, policy and social justice.

LaDonna Redmond
(Photo courtesy Matthew Gilson of TIME Magazine)

In her talk entitled "Beyond the Food Desert- Food and Justice for All", Redmond traced her own journey as a mother trying to find fresh and affordable food for her son, as a community activist, and as an entrepreneur in urban farming on the west side of Chicago. She discussed the impetus behind her founding of the Campaign for Food Justice Now (CFJN) which promotes a Human Rights framework advancing the idea that addressing poverty will end hunger domestically and globally. CFJN seeks to engage communities in advocating for the end of exploitation in the food and agriculture system and to weave together all the threads of the food movement and the broader social justice movement to advance public policies that support the right to food and call for the comprehensive reform of food and agriculture polices in the United States.

In one of the keystone elements of her talk, she advised the audience not to "pretty up" poverty and lack of access to basic services or food by putting "cute" labels on the problem. She challenged attendees by asking, "What do you call cancer? Do you put a cute label on it?" She advised us to recognize poverty and food justice as critical social issues and to work to alleviate them in our own communities.

During her time in Pittsburgh, Redmond visited Garfield Community Farm, the Ujamma Collective in Pittsburgh's Hill District and met with several members of the local food community including representatives from Just Harvest, Grow Pittsburgh, Penn State Cooperative Extension, the Environmental Charter School and Greater Pittsburgh Community Food Bank. She was able to share her expertise in the areas of community organizing around food issues and learn more about the sustainability community in Pittsburgh.

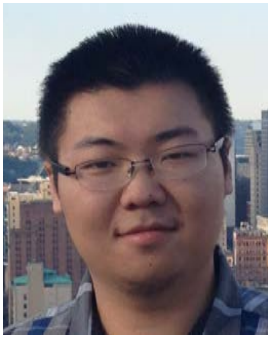
The Distinguished Lecture Series will continue on February 3, 2014 with a lecture by internationally-celebrated nature writer, food and farming activist, and W.K. Kellogg Endowed Chair in Sustainable Food Systems at the University of Arizona Southwest Center, Gary Nabhan.

Information on upcoming environmental lectures and events can be found at
http://www.cmu.edu/environment/events/

Steinbrenner Institute Welcomes 2013-2014 Graduate Fellows

The Steinbrenner Institute is pleased to announce our new class of Graduate Research Fellows for 2013-2014. There are three new Steinbrenner Institute Graduate Fellows and one new Steinbrenner Institute Robert W. Dunlap Graduate Research Fellow. The fellows will be exploring research topics that are in alignment with the strategic interests of the Steinbrenner Institute and our affiliated faculty and centers, including energy transition strategies and sustainable urban infrastructure. Our 2013-2014 Fellows include:

XIANG LI, MECHANICAL ENGINEERING

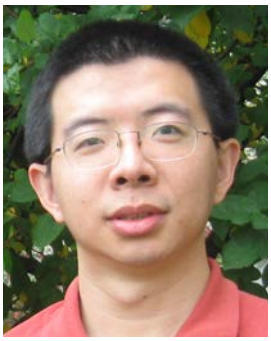


Xiang received his bachelor's degree in Environmental Engineering from Nankai University in 2012. He is a second year Ph.D. student in the Mechanical Engineering department and the Center for Atmospheric Particle Studies (CAPS) at Carnegie Mellon, working with Professor Albert Presto. His academic interest is in understanding the air pollution sources and the chemical and physical processes that pollutants (especially atmospheric particles) undergo in the atmosphere. His current research project is to characterize vehicle emissions via measurement in the Fort Pitt Tunnel, in Pittsburgh, Pennsylvania to assess the contribution of vehicle emissions to atmospheric pollution.

JEFFERY SONG, ENGINEERING AND PUBLIC POLICY

Jeffery is originally from Houston, Texas. He attended Johns Hopkins University and graduated with a Bachelor of Science in Environmental Engineering and Applied Mathematics & Statistics. While at Johns Hopkins, he was a part of the Guikema Research Group working on urban drinking water infrastructure reliability. His general research interest is the mathematical modeling of urban environmental systems, specifically concerning issues related with water quality and water use. Jeffery's project looks at risk that invasive fish species pose to the ecosystem of many US water bodies, specifically he is looking at a new method of invasive species detection known as environmental DNA (eDNA) sampling. Jeffery's project team consists of Mitch Small (Civil and Environmental Engineering/Engineering and Public Policy), Paul Fischbeck (Engineering and Public Policy/Social and Decision Sciences) and Jeanne VanBriesen (Civil and Environmental Engineering).

FAN TONG, ENGINEERING AND PUBLIC POLICY



Fan is originally from Beijing, China. He received his B.E. in Electrical Engineering from Tsinghua University. Fan worked at a national research institute in China for two years before deciding to devote his career to energy and climate change issues. His research interests include energy economics, energy modeling and climate change. He joined the department of Engineering and Public Policy at Carnegie Mellon in the fall of 2012 and he is advised on his current research project by Paulina Jaramillo and Ines Azevedo of the Department of Engineering and Public Policy. Fan's research is exploring the "switch to gas" that is being promoted by growing production of shale gas. He is developing and applying a partial equilibrium model to evaluate the comparative strengths and weaknesses of natural gas consumption pathways for the period from 2010 to 2035. *...continues on page 6*

Steinbrenner Institute Welcomes 2013-2014 Graduate Fellows

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ANDREW HAMMAN, ENGINEERING AND PUBLIC POLICY

Andrew is the Steinbrenner Institute Robert W. Dunlap Graduate Research Fellow. He is originally from Pflugerville, Texas and he graduated from the University of Texas at Austin in May 2012 with a B.S. in Electrical Engineering. While an undergraduate, he interned for 15 months in the market strategy group at the Lower Colorado River Authority, an electric and water utility based in Austin, Texas. His experience there motivated him to attend graduate school to study and research the engineering and policy aspects of power systems. His research interests are centered on how electric utilities can more efficiently use existing generation and infrastructure. His research objective is to model the hydrothermal power system with greater temporal and spatial resolution, enabling us to more confidently assess the value of hydropower for balancing renewable intermittency. Andrew is advised on his current research project by Gabrielle Hug of Electrical and Computer Engineering department.

2013-2014 COHEN FELLOW: MARGUERITE MARKS

PhD candidate Marguerite Marks has been named the Jared and Maureen Cohon Graduate Fellow in Civil and Environmental Engineering for the 2013-2014 academic year. Marguerite graduated with honors from Portland State University, receiving dual Bachelor's degrees in Environmental Engineering and Civil Engineering. She began her PhD program this fall as a member of Professor Peter Adams' air quality research group.

Her doctoral studies focus on using air quality models to investigate the effects of atmospheric particulate matter on global climate. Small particles in the atmosphere (also known as atmospheric aerosols) reflect sunlight back into space, offsetting global warming; however, some of these particles can absorb solar radiation, which adds to global warming. Certain particles are very effective at serving as cloud condensation nuclei (CCN), and this "aerosol indirect effect" (particulate-induced changes in cloud properties) is the largest source of uncertainty in climate models. Marks will use satellite and ground-level measurements to improve the representation of cloud condensation nuclei in a global climate model and to understand natural sources of CCN.

Through a generous gift to the Inspire Innovation Campaign for Carnegie Mellon University, President Jared Cohon and his wife Maureen Cohon established in 2009 the Jared and Maureen Cohon Graduate Fellowship in Civil and Environmental Engineering. The fund established with their gift is used to provide research support fellowships to deserving graduate students in Civil and Environmental Engineering who are specializing in environmental engineering. At the request of the Cohons, the Steinbrenner Institute for Environmental Education and Research manages the fellowship program in consultation with the Head of Civil and Environmental Engineering.

Steinbrenner Institute Community and Campus News

The fall semester has been as busy as ever for the Steinbrenner Institute and our sustainability partners. Here is a snapshot of what we have been up to over the past few months.

2013 First Year Orientation: Welcome to the Family!

The Steinbrenner Institute, along with Green Practices, and our partners in University Health Services, the Division of Student Affairs and student organization Sustainable Earth helped to welcome the Class of 2017 to the Pittsburgh campus with a variety of environmentally themed events, including the Environment at CMU campus sampler, the Zero Waste Dinner and the Eco-Fabulous Open House, which was hosted by Charge Car and featured local sweets provided by the Dozen goodie truck. The Class of 2017 comprises 1,430 students from 43 countries and 44 states, Washington, D.C. and Puerto Rico. Welcome to the Family and we look forward the great things from all of our new students!

Sustainable Earth members celebrate with student affairs staff at 1st year orientation programming

Sustainability EXPOsed

On December 10, 2013 the Steinbrenner Institute for Environmental Education and Research joined other local organizations such as the University of Pittsburgh Mascaro Center for Sustainable Innovation, Chatham University School of Sustainability and the Environment, and The Green Building Alliance to participate in "Sustainability EXPOsed" a full day conference devoted to discovering and discussing sustainability efforts in our region and beyond. The event, which was headlined by keynote speaker Paul Hawken, also featured Carnegie Mellon faculty members Don Carter of the Remaking City Institute and Jeanne VanBriesen of Water Quest and Civil and Environmental Engineering. In his keynote talk, Hawken encouraged the attendees, over 500 representatives of local non-profits, universities, government and corporations, to work towards solving critical environmental problems not by being hopeful, but by being fearless. He also stressed the imperative that we work in concert with natural processes in our efforts to mitigate climate change and other global environmental issues.

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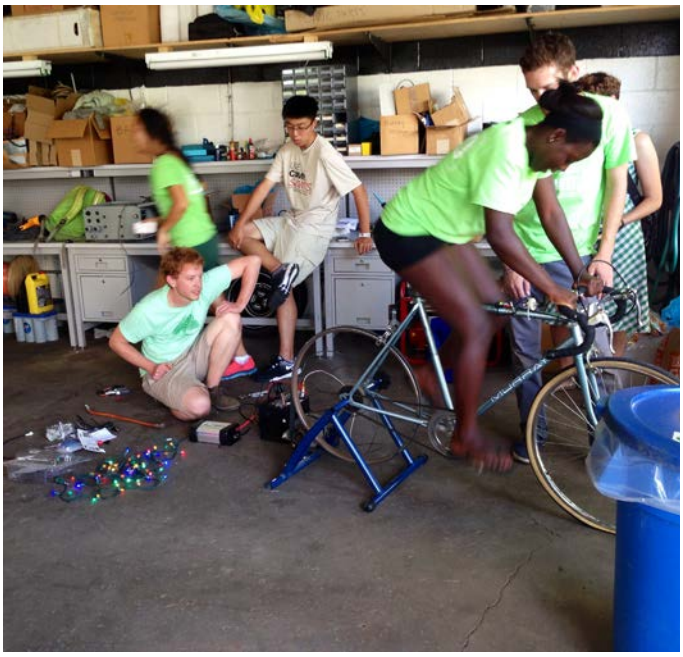

First year students and Sustainable Earth members take turns trying out the bike-erator

Steinbrenner Institute Community and Campus News

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Thomas Merton Center Award Dinner Honoring Bill McKibben

Merton Center Honoree Bill McKibben with Carnegie Mellon students and staff

On November 4, 2013 Carnegie Mellon student and staff representatives attended the annual Thomas Merton Center Award Dinner at the Sheraton Station Square in Pittsburgh, Pennsylvania. The Merton Center, which was founded in 1972, is a central hub of peace and justice activity in the greater Pittsburgh area. Each year the Merton Center honors an activist working within one of their core programmatic areas of environmental justice, peace and nonviolence, human rights, or economic justice. The 2013 honoree was William Ernest "Bill" McKibben, American environmentalist, climate change expert, and journalist who has written extensively on the impact of global warming. McKibben founded and leads the organization 350.org, and recently has led the efforts against the proposed Keystone XL pipeline project. He addressed a packed room of environmentalists of all ages, about his struggles and successes and he encouraged the young people in the room to find their voices, to advocate and speak out on global climate issues. He also spoke extensively about his recent efforts spearheading an international fossil fuel divestment campaign.

Ceilidh Weekend 2013

Ceilidh Weekend 2013 was the best attended homecoming and family weekend yet! Celebrated September 26-29, Ceilidh, a Scottish Gaelic term meaning "visit," included several sustainability infused events. The Steinbrenner Institute and Green Practices forged a partnership with the Office of Alumni Relations and Annual Giving to make both the Carnegie Clan Chili Cook-Off and the Tailgate BBQ a near zero waste event. Working with students from Sustainable Earth and with assistance from Culinart and the staff in Alumni Relations, we welcomed nearly 1,000 families and alums into the Wiegand Gymnasium to join a feast that was served using compostable cups, plates, utensils and napkins. In addition, the students from Sustainable Earth participated in the KidZone activities by displaying their bike-erator, a specially constructed bike that used human power to activate lights, blenders and a variety of other items.

CEE masters student Katherine Woychik volunteers as a zero waste monitor during Ceilidh.

The "Green Scene" at Carnegie Mellon

Carnegie Mellon GREEN PRACTICES
green isn't just a color anymore

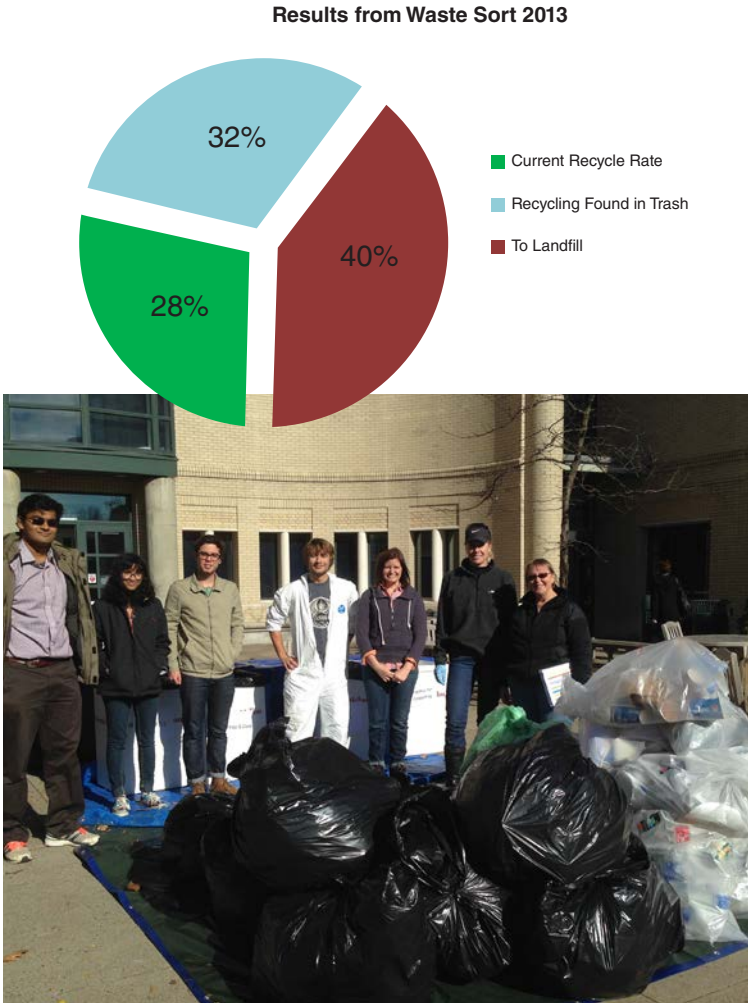
In each Steinbrenner Institute newsletter we will feature "Green" news from Carnegie Mellon campus departments and topics being addressed by the Green Practices committee. Here are some upcoming events to be on the lookout for this spring, as well as, a brief recap of some of the more notable events of the past few months.

Annual "CMU Trash Sort" Exposes Campus Waste Statistics

BY Rene Cuenca, Sustainable Earth

On November 20, 2013 a Waste Sort was held in the Merson Courtyard at the University Center. The Sort was sponsored by Green Practices and Waste Management. Environmental Coordinator Barb Kviz with the help of students and staff weighed bags of trash from Housing; Greek Quad, Donner, Mudge/Stever, and Morewood Gardens, and Academic Buildings; Tepper, Hamburg and Hamerschlag Hall. The goal of the event was to inform the campus community as to how much recycling & food waste is found in the trash and could be diverted from the landfill.

Calculations based on the pre- and post - trash sort are shown in the graph. 159lbs of representative trash was sorted at the event and it was determined that 32% of what gets thrown away on campus could be recycled or composted! The combined current recycling rate and the recycling that was found in the trash represent more than 50% of the waste that we create. One of CMU's environmental commitments is to "align the core mission with sustainable development, facilities, research, and education to create a living laboratory for sustainability." And it all starts with reducing the waste we create. Reduce, reuse, recycle.



Sustainable Earth members worked with Waste Management staff and Environmental Coordinator Barb Kviz on the waste sort

Almost Midnight Breakfast Continues Zero Waste Tradition

The 2013 Almost Midnight Breakfast was held on December 10th in the University Center. AMB has been a zero waste event since Fall 2011, with 900+ annual attendees. All food waste, utensils, paper plates, napkins and cups are compostable and are sent to a food composting facility and made into a soil amendment. CMU purchases the soil amendment to use on our campus grounds. The event is hosted by the Student Dormitory Council and student volunteers from Sustainable Earth help support the zero waste efforts.

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The "Green Scene" at Carnegie Mellon

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Campus Conservation Nationals 2014

Campus Conservation Nationals 2014 will be held February 3 -February 24 in 2014. Carnegie Mellon has signed up to compete with 14 of our campus living spaces; Boss, Doherty, Donner, Hamerschlag, Henderson, Margaret Morrison Apartments, McGill, Mudge, Shirley, Scobell, Stever, Welch, The Sustainability House and one Greek House, Phi Delt. Our goal is to encourage the students in these residences to make a commitment to take one action each to reduce their electricity use. We are aiming to beat the winning reduction rate from the 2013 competition, which was 7% achieved by the Stever House residents. To learn more about the competition visit: http://competetoreduce.org/ccn.html.

RecycleMania 2014

RecycleMania 2014 will be held on from February 2 - March 29, 2014. Our goal for the 2014 competition is to exceed the recycling rate from last year of 22%. The materials counted in the RecycleMania competition include bottles & cans, paper, cardboard, and food waste. To learn more about the competition and to view statistics from Carnegie Mellon and other schools visit the RecycleMania website http://recyclemaniacs.org.

Carnegie Mellon Celebrates Food Day with Student Focused Events

On October 29, 2013 Carnegie Mellon University's sustainability partners celebrated Food Day with the Campus "Mix and Mingle" forum held in the University Center. This was the final culmination of events that had been held throughout the month of October commemorating OXFAM America's international Food Day event held annually on October 16th and the Food Day celebration founded and coordinated by the Center for Science in the Public Interest which is held annually on October 24th.

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Students chat with the Director of Dining, Pascal Petter

Student Sustainability Update

Our Student Sustainability Update comes from Craig Boman of Carnegie Mellon's chapter of Engineers Without Borders. The Carnegie Mellon Chapter of EWB-USA is dedicated to understanding the challenges that face humanity today and implementing socially conscious and environmentally sustainable technologies to improve quality of life for local, national, and international communities.

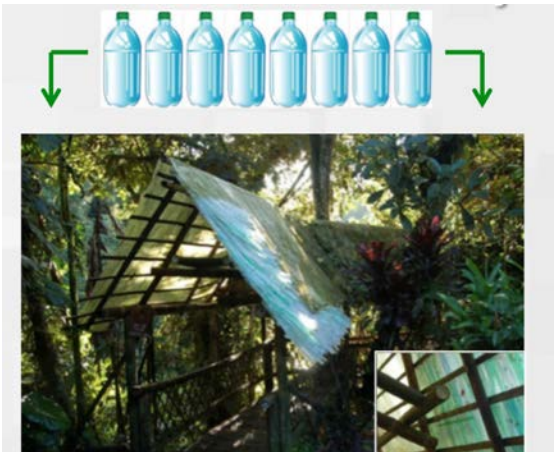
ENGINEERS WITHOUT BORDERS-USA
CARNEGIE MELLON UNIVERSITY
STUDENT CHAPTER

EWB members with students at the Symbiosis School in Rampur, India

This year has been one for the record books for Carnegie Mellon Engineers Without Borders! Not only has the club more than doubled membership, but the organization, which focuses on international community-driven development projects, has also had great success internationally and locally.

Returning from their monitoring trip to Rampur, India, the Project Symbiosis team found that the solar array they had built a year before for a local school has successfully allowed the school to run on sustainable energy 24-hours a day, which is much higher than the city average of less than 16-hours per day. A potential project at a nearby village's school, which completely lacks power, was also investigated.

The PET Plastic Thatch Roof project has likewise shown a great deal of success this year in reaching its goal of researching how to use the ever-abundant plastic bottle to create affordable, sustainable roofing in countries like Ecuador. With the mentoring provided by Professor Robert Heard from the Department of Mechanical Engineering and a nearly functional prototype for the hopper and sorter system, the project has a promising future.



PET Plastic Thatch Roof Prototypes

On the local project front, the cleanup and renovation of Pittsburgh's Emerald View Park in Mount Washington has moved on to its next stage of designing a boardwalk to connect the park to other local trails. After removing nearly five tons of trash, the project team is now focusing on working with its new professional mentor Cathy Bazán-Arias to design a boardwalk to traverse a marshy section of the park to connect it to the rest of Mount Washington.

With all of this success and increased membership the CMU-EWB chapter has been on the lookout for a new international project along with the extension of Project Symbiosis and our other existing projects. All of this growth means that financial support and mentorship is more important than ever. For more information on projects, how to donate, or how to help in other ways, please check out the CMU-EWB website www.contrib.andrew.cmu.edu/~ewbcmu.

Resiliency and Adaptation: AASHE 2013

Carnegie Mellon staff and students at AASHE 2013

Carnegie Mellon had a strong showing of attendees for the annual Association for the Advancement of Sustainability in Higher Education conference. The 2013 Conference which was held from October 6-9 in Nashville, Tennessee under the theme of "Resiliency and Adaptation" featured CMU students and staff as speakers and active participants. Carnegie Mellon undergraduate students Rene Cuenca, Michelle Krynock, Matt Palm-Powell and Rachel Wong, gave presentations regarding Carnegie Mellon student sustainability initiatives. While environmental coordinator Barb Kviz joined forces with CMU School of Architecture faculty member Chris Leininger and PhD student Jihyun Park to discuss current campus food waste management strategies. M. Shernell Smith of the Division of Student Affairs participated in AASHE's Wednesday workshop on "Leadership for Sustainability in Student Affairs", as well as facilitating a Higher Education and Student Affairs Networking luncheon. We asked Sustainable Earth president and first time AASHE attendee (and presenter) Rachel Wong to reflect on her conference experience.

AASHE 2013: Student Reflection, Rachel Wong, President of Sustainable Earth

Having the opportunity to present at this year's AASHE conference with some of my fellow Sustainable Earth members was an incredible experience. For me, personally, it was interesting to see how students from other schools went about their on and off-campus sustainability initiatives differently, based on both geographical location and the way that their particular schools function. I am a firm believer in the importance of sharing ideas, and this event allowed us to do that: in attending a variety of workshops and lectures we were exposed to ideas for projects we hadn't thought of previously and the conference allowed us time to reflect on these ideas in the context of Carnegie Mellon and see if they are feasible.

As for my experience presenting, I was happy to have a good turnout for my 8:30am presentation, and we received a number of questions and congratulations afterwards on our presentation. It's good to know that we're doing something right! I hope to attend next year's conference and I hope that we can get some of our current first year students involved. I am looking forward to sharing additional information on CMU's sustainability efforts from an objective, student leadership position.

Upcoming Conferences and Lectures

Distinguished Lectures Series in Environmental Science, Technology and Policy: Professor Gary Nabhan

February 3, 2014 The Distinguished Lecture Series in Environmental Science, Technology and Policy welcomes internationally-celebrated nature writer, food and farming activist, and W.K. Kellogg Endowed Chair in Sustainable Food Systems at the University of Arizona Southwest Center, Gary Nabhan.

Environmental History Lecture Series

The History Department has launched Environmental History: A Lecture Series for the 2013-2014 academic year. The lecture series marks the department's commmitment to environmental history as this field grows and offers more sophisticated perspectives for examining humans' relationship with the world around us. The following lectures have been scheduled:

February 13, 2014, "A Disease of Civilization?: Diabetes, Race, and the Changing Nature of American Health", Matthew Klingle, Associate Professor of History & Environmental Studies, Bowdoin College
4:30 - 6:00 PM, Reception: 6:00 - 6:30 PM

February 28, 2014, "Pollution and Politics Around Post-WWII Atlanta: The Long Shadow of Underdevelopment", Chris Sellers, Associate Professor, Stony Brook University
4:30 - 6:00 PM, Reception: 6:00 - 6:30 PM

April 3, 2014, "Lending Nature a Helping Hand: New York City and the Rise of Watershed Management", David Soll, Assistant Professor, University of Wisconsin-Eau Claire
4:30 - 6:00 PM, Reception: 6:00 - 6:30 PM

April 17, 2014, "The Bet: Paul Ehrlich, Julian Simon, and Our Gamble Over Earth's Future", Paul Sabin, Associate Professor of History and American Studies, Yale University
4:30 - 6:00 PM, Reception: 6:00 - 6:30 PM

More information on the Environmental History Lecture Series can be found at:
http://www.history.cmu.edu/lectures/environmental-history.html

The Mascaro Institute for Sustainable Innovation at the University of Pittsburgh

April 1, 2014, Heinz Center Distinguished Lecture, Vanessa Farquharson, William Pitt Union Ballroom, University of Pittsburgh
4:30pm, Reception to follow

April 19-21, 2015, Engineering Sustainability 2015
* Call for abstracts coming soon!
David L. Lawrence Convention Center

For more information on the Mascaro Center: http://www.engineering.pitt.edu/MCSI/

Carnegie Mellon Solar Splash Team To Compete in International Competition in 2014

By Chriss Swaney, CIT Director of Media Relations

Carnegie Mellon University students have received a $40,000 grant from Constellation Energy for their research under way to develop a competitive solar-powered 18-foot-long racing boat.

CMU Solar Splash entry in the 2012 Solar Splash competition in Cedar Falls, Iowa

"We are elated with this grant as we research to improve the technologies that go into our boats, and we are working toward competing in the DONG Solar Challenge in the Netherlands in 2014, one of the premier solar boat races in the world," said CMU Solar Splash team leader Nathaniel Krasnoff, a junior mechanical engineering major from San Diego. "This is the largest grant our team has ever received, and we are so grateful for the opportunity to continue our work toward developing cutting-edge, renewable energy technology."

The team was one of 10 programs selected nationwide to receive the "E2 Energy to Educate" grant, which comes from the Constellation Energy family of retail electricity and natural gas suppliers. Constellation is a subsidiary of Exelon Corp., which is one of the nation's leading energy providers. The grant is designed to "enhance student understanding of the science and technology needed to address energy issues, and reach and inspire students to think differently about energy."

"I think this kind of grant program ultimately helps students better understand the need for creating a future built on sustainable energy," Krasnoff said.

"We're very proud to sponsor research and education programs that will help prepare a new generation for energy opportunities and challenges that lie ahead," said Kenneth Cornew, president and CEO of Constellation Energy.

CMU's Solar Splash team competes in intercollegiate regattas that promote energy conservation while giving students hands-on engineering experience in a competitive setting. More than 30 students from the Mechanical, Chemical, Materials Science and Electrical and Computer Engineering departments, in addition to the School of Design, the School of Architecture and the Tepper School of Business collaborate and compete at the annual Solar Splash competition, which involves various sprint and endurance races for fiberglass and carbon fiber boats.

Carnegie Mellon Celebrates Food Day with Student Focused Events

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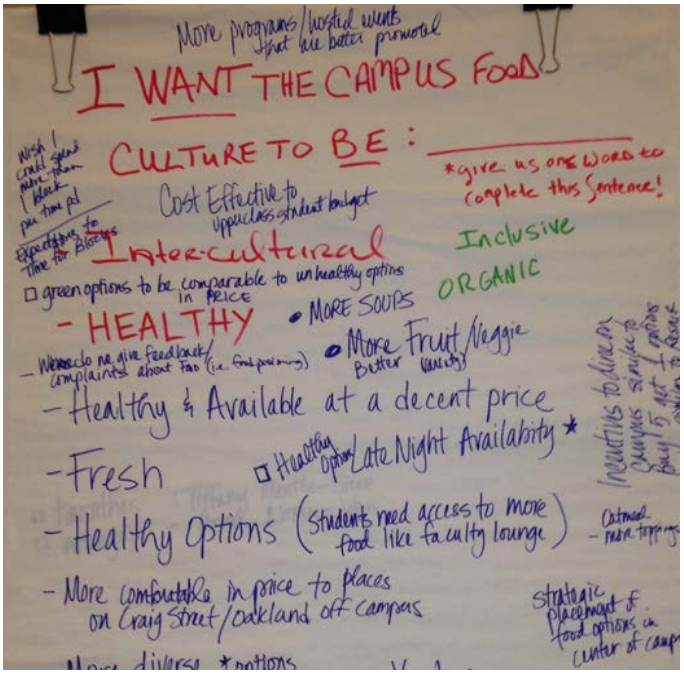
A Green Coalition consisting of student representatives from Sustainable Earth and Peer Health Advocates, along with staff from Green Practices, the Steinbrenner Institute, University Health Services, University Housing and Dining and the Division of Student Affairs came together at the beginning of the fall semester to plan, coordinate and support a number of food based events that were scheduled to take place throughout October.

In response to strong student interest in a forum that would bring together stakeholders from the various areas of University dining and vending, the "Mix and Mingle" event was created to provide good food and good conversations between students, staff, and faculty on how CMU can advance the quality, affordability and sustainability of our dining operations unit. Refreshments for the event were graciously provided by The Exchange, La Prima Espresso and CulinArt. In addition to providing food and drink, we were joined at event by the Kevin Huber, Owner and Operator of the Exchange, Sam Patti, Owner and Operator of La Prima Espresso, Sean Minahan, Executive Chef, representing CulinArt, Pascal Petter, the new Director of Dining Services and Larry Lee the new Assistant Dean of Student Affairs-Operations.

Students were encouraged to share their current perceptions of campus food culture and how they would like to see campus dining evolve in the future. Responses were varied and included the following suggestions; more composting availability, more cost effective meal plans for upper-class student budget, additional intercultural dining programs, more organic fruit and vegetable offerings, and healthy late night options for late night availability.

Thanks to all the participants for their responses and a great evening of constructive conversation!



Students share their ideas on campus food culture

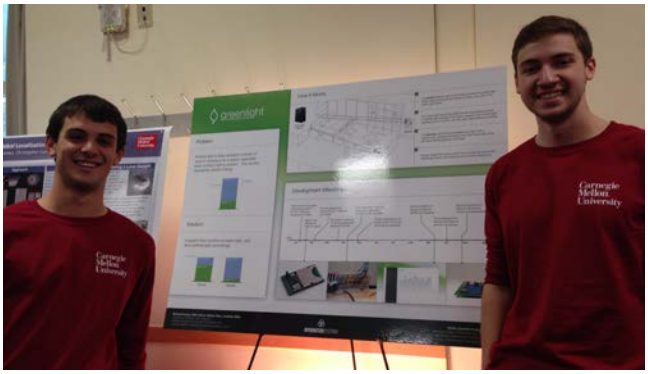
Paula Martin of University Health Services with a student attendee at the Mix and Mingle event

Steinbrenner Institute
Carnegie Mellon University
5000 Forbes Avenue
1209 Hamburg Hall
Pittsburgh, PA 15213

Steinbrenner Institute Issues New SEED Grants for 2013-2014

The Steinbrenner Institute Environmental Education Development Grants (SEED) provides small grants to Carnegie Mellon students, staff and faculty for the development or enhancement of formal and informal environmental education programs. Applications are accepted on a 'rolling' basis and the maximum amount of a SEED grant is $2500.

In 2013, the Steinbrenner Institute issued a grant of continuing support to the Carnegie Mellon University Solar Splash delegation as they continue their efforts to build a solar-powered 18-foot-long racing boat and compete internationally in 2014.



Project Greenlight Members showcase their work at President Subra Suresh's Campus Celebration

In addition to the continued support of Solar Splash, the Steinbrenner Institute has issued a SEED grant to four Information Systems students and their advisor, Professor Larry Heimann, for their work on Project Greenlight. The Project is researching and constructing a lighting system that would greatly reduce electrical energy consumption at a large scale. The system dims or brightens the light in the room based on the amount of ambient sunlight entering through windows. The group is in the process of developing a prototype and is seeking a test site for their project. The team recently showcased Project Greenlight during Carnegie Mellon President Subra Suresh's Campus Celebration and inauguration activities.

The Steinbrenner Institute has also issued grants to Footpryntz, a project that is working to develop a mobile app that will "promote sustainability and encourage environmentally-responsible behavior through social goal-sharing and contextual alerts" and to Professor Joel Tarr in support of his ongoing research on the environmental impacts of pre-fracking traditional natural gas development on the Western Pennsylvania region.

If you have questions about the Steinbrenner Institute Environmental Education Development Grants program visit the Environment at CMU- Steinbrenner website http://www.cmu.edu/environment/steinbrenner/seed-grants.html

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