



7th Annual Media Fellowship Showcases Novel Research

In June, the Steinbrenner Institute hosted the seventh annual Steinbrenner Institute Environmental Media Fellowship. Eight journalists met informally with researchers in labs from engineering, computer science, robotics and architecture, and in the field. Their interviews spanned everything from green design and geoenvironment, to water quality and alternative energy issues. The journalists participated in a boat cruise on the Riverquest Explorer that highlighted Pittsburgh's riverfront transformation, toured Kennywood (one of America's oldest and greenest amusement parks), and met participants of the 2010 Water Matters: Global Water Conference, held June 3 at the David L. Lawrence Convention Center.

"The fellowship enables leading environmental science, technology and policy journalists to broaden and deepen their knowledge of environmental issues and provides a unique opportunity for Carnegie Mellon faculty to share their research findings with, and learn from, an outstanding group of professional communicators," said David A. Dzombak, faculty director for the Steinbrenner Institute and the Walter J. Blenko Sr. Professor of Environmental Engineering. He thanked Christine Swaney of CIT Media Relations for her leadership and efforts in organizing the Environmental Media Fellowship program.

The journalists included Saqib Rahim, a reporter at ClimateWire in Washington, D.C.; James Tankersley, a reporter with *The Los Angeles Times* and Tribune Bureau in Washington, D.C.; Mark Schleifstein, staff writer at *The Times Picayune* in New Orleans; Jeffrey Johnson of *Chemical & Engineering News* in Washington, D.C.; Sharon Oosthoek, a freelance writer and editor for Canadian Broadcast Corp. in Toronto, Canada; Peter Henderson, bureau chief for Thomson Reuters San Francisco bureau; Sandy Bauers, a reporter with the *Philadelphia Inquirer* in Philadelphia; and Margaret Benner, editor of *Environment Magazine* in Philadelphia.



From left to right: Sandy Bauers, Sharon Oosthoek, Margaret Benner, David Dzombak, Saqib Rahim, Mark Schleifstein, and Jeffrey Johnson

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Water Matters! in Pittsburgh:

UN World Environment Day Discusses Global Issue

This year, Pittsburgh had the distinction of being the 2010 North American host city for the United Nation (UN) World Environment Day. A major conference titled “Water Matters!” was organized as part of the UN World Environment Day activities. The Steinbrenner Institute had a leadership role in organizing the conference, which was held at the David L. Lawrence Convention Center, in downtown Pittsburgh, on June 3, 2010 and attracted more than 1,000 attendees from the Pittsburgh region and across North America.

The Organizing Committee for the Water Matters conference met for many months and included: Sustainable Pittsburgh, Bayer Corporation, Bayer Foundation, the Rachel Carson Homestead Association, Clean Water Action, Alcoa Foundation, 3 Rivers Wet Weather, Allegheny Conference on Community Development, VisitPittsburgh, Mascaro Center for Sustainable Innovation at the University of Pittsburgh, Water Resources Institute at West Virginia University, Duquesne University Center for Environmental Research and Education, RiverLife, Allegheny County, City of Pittsburgh, PA Governor’s Office, Penn Future, Benedum Foundation, Pittsburgh Foundation, RK Mellon Foundation, Heinz Endowments, Gable Foundation, Hillman Foundation, and Lanxess Corporation.

Master of Ceremonies Bill Flanagan highlighted the significance of holding the conference in Pittsburgh by emphasizing the vast abundance of water in southwestern Pennsylvania and the importance of Pittsburgh’s three major rivers to the economy and quality of life in the region.

Keynote speaker and renowned oceanographer and ecologist with the Blue Ocean Institute Carl Safina presented a range of evidence indicating how the world’s oceans with their diverse habitats are deteriorating. He spoke about the work that he has done in placing ocean fish conservation in the wildlife conservation mainstream and the effects of climate change on the ocean as well as on the human population.

Panel session topics included discussions on water and health, water and energy, and water as an economic driver. The session on ‘water and health’ included panelists from *Environmental Health News*, Virginia Tech University, the U.S. Geological Survey, and healthy-waters.org, discussing how the lack of water affects life and how the contamination of water affects human health. They all stated that some of the most challenging tasks lie in understanding issues and impacts of the increased number and types of chemicals that enter the environment and their pathways and impacts.

The session on ‘water and energy’ revolved around the vital role that water plays in the energy sector and the role energy plays in the water sector. Panelists from the Institute for Journalism and Natural Resources, Duke Energy, Westinghouse Electric Company, and the National Center for Atmospheric Research each presented on the role that water has played in their experiences working with atmospheric research, nuclear power, and energy planning and management.

Panelists from The Washington Post, the Global Water Stewardship Program at the Coca-Cola Company, American Water, the Badger Meter Company and Milwaukee 7 Water Council, and WE ACT for Environmental Justice comprised the session on ‘water as an economic driver’. This panel focused on the potential for water to be used as a foundational asset for economic development. Some of the key points raised included viewing water as a substance and as a service, the need for more transparency in the governance of water, the tremendous opportunity for innovation, and the way aging infrastructure affects the conservation of water.

David Dzombak, faculty director of the Steinbrenner Institute for Environmental Education and Research, provided final remarks for the conference, highlighting that it is the beginning of a regional effort to explore opportunities for building on and expanding water innovation in the Pittsburgh area.

Videos and written summaries for all the sessions at the “Water Matters!” conference are available at <http://pittsburghwed.com>.

CMU Receives Awards for Environmentally Conscious Practices

This year, Carnegie Mellon University has received two awards for our commitment to environmentally friendly practices.

CMU has been recognized by the U.S. Environmental Protection Agency (EPA) as the 2009-2010 Individual Conference Champion for using more green power than any other school in the University Athletic Association (UAA).



In addition and on behalf of Carnegie Mellon, Civil and Environmental Engineering and Engineering and Public Policy Professor Scott Matthews accepted an award from PennFuture at their Green Power Awards Luncheon held in September in Philadelphia, Pennsylvania.

According to Penn Futures, “A Green Power Hero is a person or organization who makes clean energy, saves energy, puts new technologies to use, or simply makes it possible for all of us to change what kind of energy we use and how we use it.”

Congratulations to the Green Practices Committee for leading Carnegie Mellon to these awards!

Former Carnegie Mellon Student Reveals U.S. Misperceptions about Energy Consumption

Shahzeen Attari – postdoctoral fellow at Columbia University’s Earth Institute and the Center for Research on Environmental Decisions, and Carnegie Mellon University College of Engineering graduate – has co-authored an article related to her PhD research at Carnegie Mellon on public misperceptions about energy consumption and savings, published in the August 16, 2010 issue of the *Proceedings of the National Academy of Sciences* (<http://www.pnas.org>).

Based on a national online survey, 505 participants in 34 states reported their perceptions of energy consumption and savings for a variety of household, transportation, and recycling activities. When asked for the most effective strategy they could implement to conserve energy, most participants mentioned curtailment (e.g., turning off lights, driving less) rather than efficiency improvements (e.g., installing more efficient light bulbs and appliances), in contrast to experts’ recommendations.

As a result, Attari and her fellow Carnegie Mellon researchers concluded that many Americans are under the misperception that they can save energy by “curtailing” these small changes in their behavior. In actuality, however, these changes make little difference and have distracted them from supporting a switch to efficient, currently available household and vehicle technologies. The serious deficiencies highlighted by these results, however, suggest that well-designed efforts to improve the public’s understanding of energy use and savings could pay large dividends.

Co-authors of this paper include Michael DeKay formerly of Carnegie Mellon and now with Ohio State University, Wändi Bruine de Bruin of Carnegie Mellon; and Cliff Davidson, formerly of Carnegie Mellon and now with Syracuse University.

CMU Commits to Campus Sustainability Charter

Aided by the university Green Practices Committee, CMU has been proactive in creating a more sustainable campus by participating in the ISCN/GULF Sustainability Campus Charter. Created by the Global University Leaders Forum (GULF) and the International Sustainable Campus Network (ISCN), institutions of higher education and research who sign this charter acknowledge the role they play in developing the technologies, strategies, citizens, and leaders required for a more sustainable future.

Signature of this charter represents an institution's public commitment to aligning its operations, research, and teaching with the goal of sustainability. This includes implementing three ISCN/GULF sustainable campus principles, as well as setting concrete and measurable goals and reporting regularly and publically on its performance in this regard.

These principles include: 1) demonstrating respect for nature and society by making sustainability an integral part of planning, construction, renovation, and operation of campus buildings; 2) ensuring long-term sustainable campus development, campus-wide master planning and target-setting which includes environmental and social goals; and 3) aligning the institution's core mission with linked sustainable development, facilities, research, and education to create a "living laboratory" for sustainability. More information about ISCN/GULF charter is available at: <http://www.international-sustainable-campus-network.org>.

CMU Hosts Education and Sustainability Conference

In late May, Carnegie Mellon hosted a conference for Civil and Environmental Engineering (CEE) department heads from across the United States to discuss sustainability in CEE curricula and how engineering education is supporting sustainable development. Steinbrenner Institute Faculty Director David Dzombak was invited to speak about the mission and goals of the Steinbrenner Institute for Environmental Education and Research (SEER) and how it has been advancing environmental concerns at CMU.

Dzombak explained how SEER fosters interdisciplinary research initiatives, as well as supporting extracurricular environmental educational opportunities. He also discussed how SEER coordinates CMU's green initiative and works with the University of Pittsburgh's Mascaro Center for Sustainable Innovation.

Duquesne Light Professor of Civil and Environmental Engineering Chris Hendrickson also spoke at the conference, describing a study undertaken by the Center for Sustainable Engineering to measure the extent to which engineering focused on sustainable development is appearing in curricula nationally. (Article on Dr. Hendrickson's work appears in this publication on page 6.)

To read more about this conference, please visit the July/August 2010 issue of the American Society of Civil Engineers' newsletter ASCE News online at <http://www.asce.org/>.



CEE Professor Chris Hendrickson

Notes from a Girls Engineering Summer Camp: SEER Leads Green Roofs Activity

By Jennifer Frazier and Natalie French, CMU Civil and Environmental Engineering undergraduate students

This summer, we both worked with SEER Executive Director Deborah Lange: Jenn worked with the MOVE IT green jobs training program (housed at Heritage Community Initiatives in Braddock, PA), and Natalie worked on brownfields research (funded through a USEPA Training Research & Technical Assistance Grant). We also designed and led a green roofs activity for the Summer Engineering Experience for Girls (SEE), using knowledge gained from our civil engineering courses to help us through this process.

SEE is a two-week program that gives middle school girls an opportunity to explore multidisciplinary engineering activities focused around the theme of energy. They explore ways in which to create efficient and environmentally-friendly uses of energy. Managed by Alicia Brown Angemeer, the SEE program is offered by the Institute for Complex Engineered Systems (ICES), a multidisciplinary engineering institute within the College of Engineering.

Our activity for the 24 participating girls included a homework reading assignment, a lecture, a class demonstration, a hands-on activity, and a tour. Jenn created and presented a PowerPoint lecture on the costs, benefits, design and history of green roofs.

To illustrate the cooling effects of green roofs, we set up a demonstration. We used heat lamps to represent how the sun would heat two different kinds of roofs: a regular shingle roof and a shingle roof with a miniature green roof on top. After heating the two roofs for about half an hour, the girls were able to feel the difference in temperature between them and feel how the green roof added insulation.

After learning about green roofs, each girl was given the opportunity to build her own “green roof.” To do this, we gave each girl a small tray, materials to represent each layer of the green roof, soil, and herbs. Finally, we took them on a tour of the green roofs on the Carnegie Mellon campus.



Top left: girls participating in the SEE activity.

Lower right: green roof on Carnegie Mellon's Hamerschlag Hall

Throughout the experience, the girls were comfortable sharing their knowledge, thoughts, and questions about green roofs. By the end of the day they were using technical green roof terms with ease, and they could point out all of the green roofs on campus.

It was so much fun working with the girls. They were all bright, hard working, and team oriented. The girls were also very environmentally conscious and wanted to learn how to use engineering to make a difference in the world. The SEE experience gave them the knowledge and confidence they will need to pursue engineering further.

How Does U.S. Industry Use Scarce Water Resources?

Duquesne Light Professor of Civil and Environmental Engineering Chris T. Hendrickson is leading a team in a comprehensive study to document American industry's use of scarce water resources.

For example, the study found it takes almost 270 gallons of water to produce a \$1 worth of sugar; 140 gallons to make \$1 worth of milk; and 200 gallons of water to make \$1 worth of cat and dog food.

“The study gives us a way to look at how we might use water more efficiently and allows us to hone in on the sectors that use the most water so we can start generating ideas and technologies for better management,” said Hendrickson, co-director of Carnegie Mellon's Green Design Institute, a major interdisciplinary research effort aimed at making an impact on environmental quality through design.

Hendrickson, along with Civil and Environmental Engineering Ph.D. candidates Michael Blackhurst and Jordi Vidal, said his team is trying to help industries track and make better management decisions about how we use water, which makes up more than 72 percent of the earth's land surface.

The study, featured in the February 23, 2010 edition of the journal *Environmental Science & Technology*, reports that a lot of water consumption is hidden because companies do not use all the water directly.

“We discovered that among 96 percent of the sectors evaluated, indirect use exceeded direct uses throughout the supply chain,” Hendrickson said.

But Hendrickson and Blackhurst are quick to report that their data are national findings and do not apply regionally. In addition, they could only track withdrawals, and were unable to determine how much water was returned to the system or recycled.

“That is a big deal because water that gets degraded during industrial processes might not be suitable for future uses,” Hendrickson said. “Effective water management is critical for social welfare and our fragile ecosystems.”



Students Learn from *Environment Today*

While many undergraduates in every department at Carnegie Mellon University understand the importance of environmental literacy and citizenship, not all of them have the time to take semester-long courses on the environment or to attend non-mandatory guest lectures. The Environment Today course was created last year to meet the needs of those students. The course is modeled after the weekend courses created by former Vice Provost for Education Indira Nair, including India Today, China Today, Brazil Today, and Russia Today. Professor Peter Madsen of the Philosophy Department developed the first environmentally focused weekend immersion courses (see page 9). For the duration of one weekend, a course surveys the pressing issues of our time in order to provide the needed foundations of ecological thinking: 1) systems thinking – connections and influences between ideas, people, and communities; 2) life cycles and respect for the role of time in nature, human activities, and our lives; and 3) self as agent and knowledge of uncertainty as a basis for decision making.

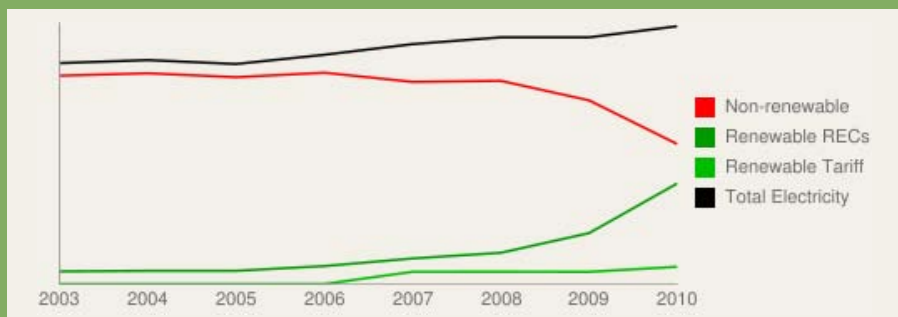
Any undergraduate student is welcome to take the course, as it is not associated with any department. Students hear from faculty, Ph.D. candidates, and local professionals about a variety of topics all linked to a common theme(s). This past spring, the theme was water and energy. Lecture topics included the sustainability of biofuels, problems with combined sewer overflows, and the use of water in energy production. Students were also able to learn about waste reduction because the course was nearly zero-waste, thanks to volunteers from Carnegie Mellon's Net Impact and Eco Reps organizations. Please see www.cmu.edu/greenpractices for more information about these student groups.

More than ninety undergraduate students enrolled in the course and the majority of students said, in a post-course survey, that they would take the course again. The course will be replicated in the Spring 2011 semester with new themes of biodiversity and environmental justice. For more information see <http://www.cmu.edu/weekend-today>.

CMU's Electricity Purchases Makes Campus Use 75% Renewable!

For the 2010 calendar year, Carnegie Mellon University has purchased nearly 87 million kilowatt-hours (kWh) of wind-based renewable power, enough to meet 75 percent of the university's purchased electricity use.

This is up from last year's purchase of renewable electricity – or renewable energy certificates (RECs) – which totaled just over 22 million k-Whs.



Renewable Electricity Credits (RECs) above, reflect expenditures already made for the period through June 2010. Carnegie Mellon is also under contract for the purchase of an additional 54,955 mWh of RECs for the period July-December 2010. Thus, for Calendar Year 2010 we have 86,825 mWhs of wind-based RECs under contract. See <http://www.cmu.edu/greenpractices> for more information

IBM Smarter Infrastructure Lab Helps Create a Smarter Planet

IBM and Carnegie Mellon are creating a collaborative research lab at the university to undertake research and create technologies to help cities, governments and industries worldwide develop smarter infrastructures.

The new lab is part of the Pennsylvania Smart Infrastructure Incubator (PSII) and will be located within the Department of Civil and Environmental Engineering on the CMU campus. The PSII is also supported by a grant from the Commonwealth of Pennsylvania to help to create an incubator for advanced infrastructure technology in partnership with industry.

The IBM Smarter Infrastructure Lab at Carnegie Mellon University will develop technologies that are consistent with IBM's Smarter Planet initiative, IBM's offerings in Business Analytics and Optimization, and CMU's work within its Center for Sensed Critical Infrastructure Research. The new lab will be a focal point and catalyst for collaboration with like-minded research colleagues from IBM Research and across CMU including the engineering, architecture, public policy and business schools. It will also be an important resource at Carnegie Mellon University to educate and train future scientists and engineers to build smarter cities.

At the lab, researchers will collect and analyze massive amounts of data about the physical condition and energy efficiency of buildings, water pipelines and other infrastructure on which governments, businesses and societies depend. One of the research initiatives the lab will undertake is to explore physical infrastructures with innovative digital sensor networks that will produce large amounts of new data that will be acquired in real-time and integrated with advanced analytical tools. Such analysis will be directed to detect patterns, understand exposure to risks, and help predict outcomes of management and operational decisions with greater certainty.

"At Carnegie Mellon, we've been working for a number of years on interdisciplinary research to help better manage critical infrastructure using advanced technologies. Our goal has been to deploy a variety of sensors to collect significant amounts of new data that can be analyzed and turned into actionable information so that people who build, maintain or manage infrastructure can do so in a more efficient and cost effective manner," said James H. Garrett, Jr., the Thomas Lord professor and chair of the Department of Civil and Environmental Engineering. "IBM's much appreciated support will help establish a new, state-of-the-art lab where we will be able to showcase research and technology development on our Pittsburgh campus. In addition to supporting us with technology and analytical tools, our collaboration with IBM will also enable highly valuable interactions with IBM researchers worldwide in this domain."

Government agencies at the municipal, city, state and federal level along with businesses from diverse industry sectors will be invited to partner with the lab. Some of these partners will make data from their diverse infrastructures available to the lab while others may provide complementary technologies or support additional research activity. The lab will also be integrated with a new Collaboration and Distance Learning Center to be located in CMU's Department of Electrical and Computer Engineering, where leaders can meet – either physically or virtually – to learn how smarter infrastructures can make them more competitive.

"Making the infrastructure of our cities, communities, and industries more instrumented, interconnected and intelligent can make it more sustainable from both an economic and an environmental perspective," said Wayne Balta, vice president, corporate environmental affairs and product safety, IBM. "With Carnegie Mellon University's renowned reputation in engineering and IBM's leadership regarding a Smarter Planet and business analytics, this new lab can drive innovation and develop new technologies to help leaders worldwide optimize their use of finite resources."

More information about PSII and the IBM Smarter Infrastructure Lab is available at: <http://www.ices.cmu.edu/censcir>.

Indira Nair's Legacy:

ENVIRONMENTAL EDUCATION AT CMU

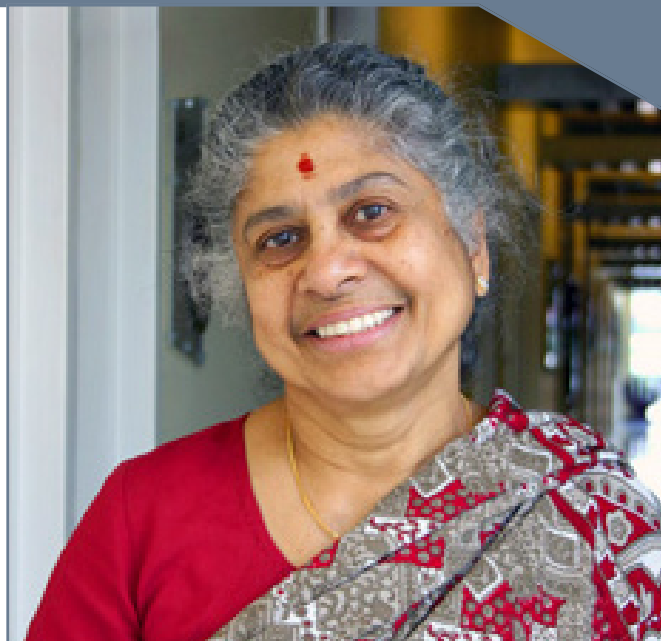
By Peter Madsen

Vice Provost for Education, Distinguished Service Professor of Ethics and Social Responsibility, and Executive Director Emeritus of Carnegie Mellon University's Center for the Advancement of Applied Ethics and Political Philosophy

In her leadership capacity as Vice Provost for Education, Indira Nair nurtured environmental education – as well as education dealing with global issues, ethical issues and many others – both inside and outside of the classroom, so that environmental awareness became a staple for students.

One of her more significant efforts in this area was her (and former Civil and Environmental Engineering Professor Cliff Davidson's) application for and receipt of a Henry Luce Foundation grant that led to the “greening of early undergraduate education” initiative. The broad goal of this initiative, as Indira stated it in her proposal to the Foundation, was for Carnegie Mellon University (CMU) to “become a rarity among research institutions by marshaling a *university-wide* effort in environmental education for first-year and second-year undergraduates — a diverse set of small section courses that enroll 500 students a year and feature interdisciplinary, project-based learning and skill development.”

Indira was also a principal investigator on an National Science Foundation (NSF)-sponsored project called “Environmental Science, Technology and Decision Making” that had the goal of developing “teaching material that uses a project-based approach to understand the principles in science, engineering and policy that affect environmental decision-making.” This grant also allowed Indira to foster the idea of “environmental literacy” at CMU. The Luce Foundation award and this NSF project together led to the addition of a large set of new and useful courses on



our campus, and on other campuses, that addressed numerous environmental issues of import. They brought the environment before the attention of our students in a very profound way.

In addition, under Indira's guidance and thanks to the kind support of SEER, I was able to inaugurate two new CMU General Education weekend immersion courses: Environmental Justice and Corporate Environmental Responsibility. These have evolved into the regularly scheduled weekend program titled “The Environment Today” that is offered every spring (see page 7). Indira also assisted all advisors on campus by compiling a list of courses that were related to environmental concerns and distributing it so that the advisors could give adequate notice to their students.

As well, Indira promoted environmental education within the context of the University Lecture Series (ULS), which she had reinvigorated as Vice Provost for Education. The ULS has hosted national and international experts from both on and off campus over the years who shared their environmental knowledge with our community.

In short, it can be rightly said that Indira was the driving force behind CMU's currently, and very successful, efforts in environmental education.

Lea Hildebrandt is Named a 2010 Teresa Heinz Environmental Scholar

Carnegie Mellon University College of Engineering doctoral student Lea Hildebrandt has been named a 2010 Teresa Heinz Environmental Scholar. The dual Ph.D. student in Chemical Engineering and Engineering and Public Policy is one of fifteen U.S. graduate students who have been awarded this title and the accompanying financial support for her research.

Hildebrandt's work on "Secondary Organic Particulate Matter: From Measurements to Models to Mitigation" focuses on improving our understanding of the processes governing organic particulate matter in the atmosphere. She is examining specifically the interactions of different types of organic aerosols. The end goal is to make recommendations to policy makers for emissions control policies aimed at reducing aerosol concentrations in the atmosphere.

"I feel supported in my efforts to better understand air pollution and find solutions for this environmental problem," says Hildebrandt. "My area of research is interdisciplinary and highly collaborative. As such, it is very important for me to be able to share and discuss my ideas at domestic and international conferences and to publish my results in scientific journals. This scholarship is supporting me by, among others, providing funds for professional travel and publications."

Funded by the Teresa and H. John Heinz III Foundation, these annual awards provide exemplary graduate students from seven institutions around the country with financial support to enhance their doctoral or master's level research, which is aimed at providing effective solutions for environmental problems and enriching public understanding of emerging environmental issues. CMU is one of the participating institutions, and the Steinbrenner Institute helps promote the Heinz Environmental Scholar program.

This year, the Foundation awarded eight doctoral students and seven masters students from the following universities: Carnegie Mellon University, Cornell University, Harvard University, Princeton University, Stanford University, Yale University, and Texas A&M University at Corpus Christi. More information about the Heinz Environmental Scholarship program is available at: <http://www.heinzfamily.org/programs/>.

CMU Alums Win ASEE Best Paper Award

At this summer's annual American Society for Engineering Education (ASEE) conference and exposition, three Carnegie Mellon College of Engineering alumnae won the Division Best Paper Award. Kristen L. Sanford Bernhard, Sharon A. Jones, and Jacqueline A. Issacs, along with their co-author Christopher S. Ruebeck, presented on "Assessing the Effectiveness of Using a Computer Game to Bridge a Research Agenda with a Teaching Agenda."



Kristen L. Sanford Bernhard and family



Jacqueline A. Issacs



Sharon A. Jones

They assessed the impact of an out-of-class computer game designed to develop students' understanding of complex tradeoffs among environmental, economic, and technological issues. By comparing the results across three different courses, they measured the game's success in a variety of contexts and dimensions.

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Calling All Freshmen to a Zero Waste Dinner!

As in the past, this year's incoming freshmen at Carnegie Mellon were invited to a community orientation dinner. However, this year's dinner was no ordinary dinner; it was a Zero Waste Dinner.

What made it different? There was no bottled water, and all food scraps, compostable plates, dinnerware, cups and bags went to AgRecycle for composting. In the orientation program description of the dinner, freshmen were encouraged to "make this zero-waste event a success by taking only as much food as you will eat and by disposing of waste in the proper receptacles."

The event was originally conceived by CMU doctoral students Vanessa Schweitzer, Michael Blackhurst, and Justin Parisi. It was created as a part of their action plan proposing new zero waste programming goals for CMU. Schweitzer, Blackhurst, and Parisi developed this plan at an international student workshop they attended which was held in parallel to the COP15 climate change talks in Copenhagen, Denmark, in December 2009.

The orientation dinner was attended by just under 2,000 students and support staff during the week of freshman orientation in August. This event also demonstrated interest by student organizations - such as Eco-Reps, Sustainable Earth, and Net Impact - to support zero waste programming. "With the appropriate staff and administrative support, these organizations offer an opportunity to continue advancing zero waste programming," says Parisi.

Parisi summarizes that "demonstrating capacity at the 2010 Freshman Orientation was a significant goal that the university achieved with extensive teamwork and support."



CMU Alums Win ASEE Best Paper Award *(continued)*

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They found that students increased their self-assessed knowledge about the supply chain and teamwork in the supply chain, made connections between the environment and business practices as well as external events and the supply chain, but did not feel that their understanding of sustainability improved.

Sanford Bernhardt received her Ph.D. and M.S. from CMU and is now an assistant professor of civil and environmental engineering at Lafayette College. Jones is also a professor at Lafayette College in both the Department of Civil and Environmental Engineering and the Engineering Studies Program. She received her Ph.D. from CMU in Engineering and Public Policy. Issacs, a professor of mechanical and industrial engineering at Northeastern University, received her Ph.D. and M.S. from the Massachusetts Institute of Technology and her B.S. from CMU in Materials Science and Engineering.



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Green Chemistry Professor Receives Heinz Award

Carnegie Mellon University Teresa Heinz Professor of Green Chemistry Terry Collins was recently named one of 10 recipients of a prestigious Heinz Award. Collins is being honored for his contribution to the environment: for “his pioneering ‘green chemistry’ and for training future generations of scientists.”

The Heinz Awards citation describes Professor Collins as “the first educator in the United States to teach green chemistry classes starting in the early 1990s. Today, he is considered one of the world’s most distinguished university professors in the field of green chemistry.” His motivation for teaching green chemistry is his belief that students should be equipped with an education that includes the fundamentals of green design principles so they are better able to develop a more sustainable world as tomorrow’s leaders.



He has also pioneered efforts to detoxify hazardous substances, like anthrax, and dangerous pesticides and has developed TAML activators – catalysts that activate hydrogen peroxide to oxidize molecular pollutants and hardy pathogens in water to non-toxic compounds. Collins has continued to develop these activators so they are able to target a wide variety of pollutants and can be used for disinfection. He is also working with partners at the Carnegie Mellon University startup company, GreenOx Catalysts, Inc., to commercialize the catalysts for widespread industrial use.

Established by Teresa Heinz in 1993 to honor the memory of her late husband, U.S. Senator John Heinz, the Heinz Awards celebrate the accomplishments and spirit of the Senator by recognizing the extraordinary achievements of individuals in the areas of greatest importance to him. With the honor, Collins receives a \$100,000 award for unrestricted use. The awards will be presented at a private ceremony this November 2010, in Washington, D.C. More information about the Heinz Awards is available at: <http://www.heinzawards.net>.

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