

# Institute for Environmental Science and Policy

## Inside

<i>Letter from the Director</i>	2
<i>Faculty Research: Green Infrastructure</i>	3
<i>Postdoctoral Fellowship</i>	4
<i>Earth Month: Calendar of Events</i>	5
<i>Awards &amp; Appointments</i>	6
<i>News</i>	6

**Institute for Environmental Science and Policy**  
School of Public Health West  
Room 529  
2121 West Taylor Street  
MC 673  
Chicago, IL 60612-4224

[iesp@uic.edu](mailto:iesp@uic.edu)  
[www.iesp.uic.edu](http://www.iesp.uic.edu)

### IESP Staff:

#### Director:

Thomas L. Theis

#### Associate Director:

David H. Wise

#### Assistant Director, Business Affairs:

Urszula Lizak

#### Graduate Assistant:

Rachel Aukeman

## SUMMER INSTITUTE ON SUSTAINABILITY AND ENERGY

The world is undergoing a historic transition from fossil fuels to more sustainable energy alternatives and to proactive stewardship of our natural environment. Dealing with these challenges requires decision makers in public and private institutions who are well informed on energy and sustainability issues spanning science, technology, economics, behavior, policy, planning and entrepreneurship.

The Summer Institute on Sustainability and Energy will educate future decision makers on energy and sustainability through interdisciplinary lectures dealing with big picture issues presented at an accessible level. Graduates of the Institute will achieve an overview of the technical challenges

and potential solutions, the economic and social barriers to implementation, the policy and planning needed to implement sustainable energy, and the entrepreneurship that will deliver innovative energy technologies.

For the span of eight days in August 2011, students will be intensely immersed in the Summer Institute. Students will experience a range of activities, including lectures, panel discussions, tours of energy and environmental sites, and group

projects addressing energy and sustainability challenges. Lecturers will include George Crabtree, Distinguished Professor of Physics at UIC, and Dr. Thomas Theis, Director of the Institute for Environmental Science and Policy, as well as other specialists and experts from UIC and universities and organizations from around the nation.

For information and how to apply, visit the Summer Institute on Sustainability and Energy website:

<http://sise.phy.uic.edu/>



## Mission Statement

The mission of the Institute for Environmental Science and Policy (IESP) at the University of Illinois at Chicago (UIC) is to advance multidisciplinary research and scholarship within the environmental and health sciences, engineering, economics, urban planning and the social sciences among UIC's faculty and students, to prepare the next generation of environmental scientists and decision makers, and to transmit workable solutions for environmental problems to the public sector.



Thomas L. Theis, Director, IESP

“One of the core elements of UIC’s mission is to address the challenges and opportunities that are uniquely urban in nature... This is reflected in IESP’s research portfolio, which has a strong urban focus.”

## FROM THE DIRECTOR

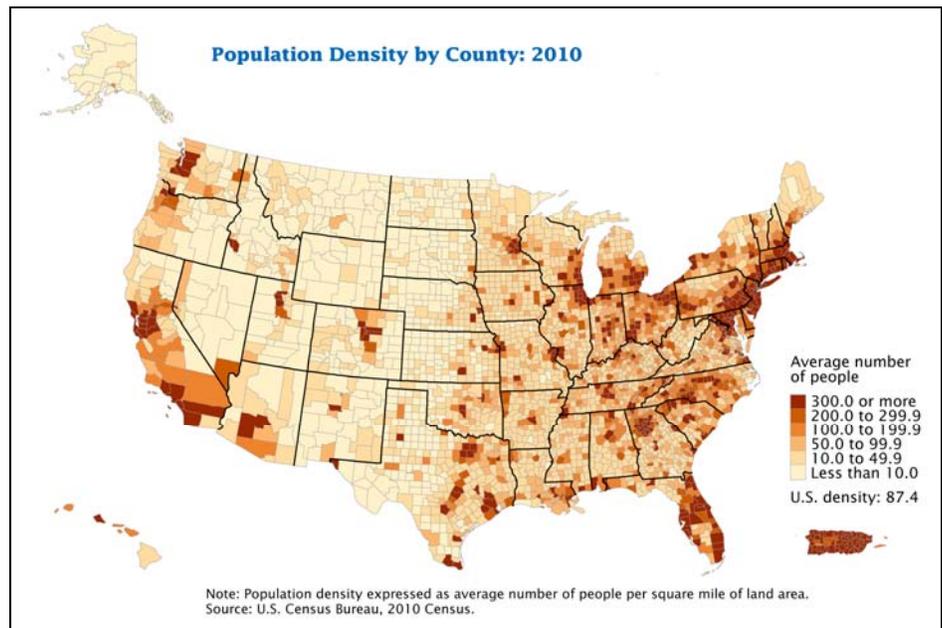
As the numbers from the 2010 census have become available, it is more apparent than ever that the United States is a heavily urbanized country, a trend that has continued unabated since the earliest days of the republic (see accompanying graphic). About 80% of us now live in urban regions; globally the number is 50%, but the urbanization trend in developing countries is occurring at a much faster rate than in the developed world. For many reasons, we humans seem to like to flock together.

Urban systems are formed by a diversity of actors and activities, and consist of complex interactions involving financial, information, energy, ecological, and material stocks and flows that operate on several different spatial and temporal scales. The urban systems that emerge from these interactions are continually in flux as they are constructed, replaced, and regenerated. While scholars of all disciplines agree that urban systems form and grow from the eco-

nomie surplus that they capture, less transparent are the manner in which social and organizational factors can be integrated with the ecological landscape and decisions on the type and character of the urban built environment—its infrastructure.

Urban infrastructures have historically supported several needs of the population: the supply of goods, materials and services upon which we rely; collection, treatment and disposal of waste products; adequate transportation alternatives and networks; access to power and communication grids; a quality public education system; maintenance of a system of governance that is responsive, efficient and fair; generation of sufficient financial and social capital to maintain and renew the region; and insurance of the basic elements of safety and public health. Collectively, these needs have been perceived as the basic attributes needed to make an urban region livable.

One of the core elements of UIC’s mission is to address the challenges and opportunities that are uniquely urban in nature, a commitment that has been reaffirmed many times throughout our history. This is reflected in IESP’s research portfolio, which has a strong urban focus. For example over the past 3 years our faculty has engaged in urban research projects totaling nearly \$8 million in expenditures. These have addressed a wide range of issues: analysis of transportation systems, urban carbon and ecological footprinting, energy and material flows in the urban environment, assessment of toxic exposures, urban educational opportunities, environmental justice, sustainability and the urban built environment, urban land management, urban restoration ecology, and ways to improve recycling, to name a few. Such scholarly diversity is one of the institute’s strengths that we continue to build upon as we add new people, develop new programs, and establish new partnerships with the urban community.



## IESP's Joint and Affiliated Faculty Assess Green Infrastructure Practices

UIC faculty members Martin Jaffe (Urban Planning and Policy), Moira Zellner (Urban Planning and Policy and IESP), Miquel Gonzalez-Meler (Biological Sciences), and Emily Minor (Biological Sciences and IESP) joined with staff from the Center for Neighborhood Technology, the Chicago Metropolitan Agency for Planning, and the Illinois-Indiana Sea Grant College Program to examine the use of green infrastructure to manage urban stormwater runoff. The principal investigators are all associated with IESP, either as joint faculty or as steering committee members. IESP's Visiting Research Specialist Dean Massey and post-doctoral researcher Lisa Cotner also assisted the faculty with this project. The research was supported by the Illinois Environmental Protection Agency, under funding from the American Recovery and Reinvestment Act of 2009.

The 2009 federal economic recovery act provided infrastructure funds to state Clean Water and Drinking Water revolving loan funds, with 20% of the funding reserved for "green projects," including the use of green infrastructure (the use of natural systems to manage urban stormwater impacts). Illinois EPA, in turn, contracted with UIC, the Center for Neighborhood Technology



and the Chicago Metropolitan Agency for Planning to assess the effectiveness of green infrastructure practices (including bio-infiltration, permeable paving, filtration, green roofs, and constructed wetlands) as water pollution control strategies and to advise the agency on how these innovative techniques could best be integrated into the state's Municipal Separate Stormwater Sewer System ("MS4") permit program required under the federal Clean Water Act.

The green infrastructure study for Illinois, which was completed in October 2010, reviewed the peer-reviewed scientific literature, studies and reports of other states, and US EPA's databases on the use of green infrastructure in protecting waterways from the pollution generated by stormwater runoff. The

project's science team also examined if green infrastructure can reduce stormwater volume and discharge rates while providing other environmental services, such as wildlife habitat. The science team found that, if properly sized and sited, green infrastructure is, on average, about as effective as conventional on-site detention practices in removing total nitrogen and total suspended solids from stormwater. Green infrastructure was also found to be effective in reducing flooding and sedimentation risks by decreasing both stormwater peak flows and runoff volumes. The study also found that green infrastructure is often 5-30% less costly to initially construct than conventional stormwater detention facilities and about 25% less costly than conventional on-site detention over its life cycle.

*(Continued on Page 4)*

---

## Predocutorial Fellowship Competition

*The UIC Institute for Environmental Science and Policy announces the predoctoral fellowship award competition for the 2011-2012 academic year.*

**Background:** Exciting thinking often lies at the borders of academic disciplines, including the many that have contributed to advances in environmental scholarship. For IESP fellowships, the program of study, the theme of the proposed research, and the methodologies to be used should seek to be interdisciplinary in nature. Interdisciplinary study is integrative, seeking to forge new models of scholarship which build upon the traditional disciplines. The world of the future will require scholars with a global approach to problem solving. It will no longer be enough to know one area, one discipline, or one field of study. Inquiry and discovery are crossing disciplines. With this in mind, the mission of the IESP predoctoral fellowship program is to span traditional boundaries among disciplines while helping students develop knowledge and skills for independent research on the fundamental questions of the present and the future.

**Criteria for Selection:** The IESP predoctoral fellowship program is open to any predoctoral student at UIC whose research is related to interdisciplinary environmental scholarship. All applicants must have been accepted into an existing doctoral program. Successful applicants will be appointed as Predocutorial Fellows of IESP. Each fellowship carries with it a \$15,000 award which can be used for all legitimate research expenses except tuition and fees, and capital equipment. All awards are dependent on the availability of funds. For the 2011-2012 year, two categories of fellowship applications are sought: first year students (i.e. entering UIC in the fall 2011 semester), and ongoing predoctoral students. Please go to <http://www.uic.edu/depts/ovcr/iesp/programs/fellowship.htm> for specific application guidelines.

**Applications are due Monday May 2, 2011, 3PM.** Funded fellowships will be available August 16, 2011 and must be used during the 2011-2012 academic year. All application materials must be sent electronically to the Institute for Environmental Science and Policy, [iesp@uic.edu](mailto:iesp@uic.edu), as one PDF packet. Fellowship awardees will be notified by June 15, 2011. Questions regarding the application procedure or the administration of fellowships should be directed to Urszula Lizak ([usas1@uic.edu](mailto:usas1@uic.edu), or 312-996-1081), assistant director of IESP.

---

*(Continued from page 3)*

To provide guidance to Illinois' MS4 program, the study also examined green infrastructure practices and programs used in Illinois and in five other states. The researchers recommended that the Illinois EPA adopt a stormwater retention performance standard or volume control requirement that can vary according to site conditions, and that the new standards should be phased-in over time by establishing realistic annual goals for local government adoption of green infrastructure practices. Green infrastructure might also be most effectively introduced if administered at the county level, since that scale would be most consistent with watershed-based management initiatives. Furthermore, the Illinois EPA should finance green infrastructure project using the Green Reserve set-aside within the state's revolving loan funds after adopting a system to prioritize funding. Local governments subject to the MS4 permit requirements should also be authorized to create stormwater utilities to ensure that the green infrastructure practices used to manage stormwater discharges are properly inspected and maintained over their useful lives. To assist the state in promoting these technologies, the study's researchers also developed a computer model allowing local officials to compare various alternative green infrastructure practices on a development site as part of their development-review process.

"The green infrastructure study is a good example of how the Institute's mission to promote interdisciplinary research and collaboration within UIC can pay off for the benefit of Illinois communities and citizens," said Marty Jaffe, one of the project's co-PIs. The success of this study in promoting wider interest in green infrastructure practices in the state can be judged by the fact that, in 2010-11, Illinois EPA initiated a \$5 million Green Infrastructure Grant Program, receiving 155 applications from local governments for \$55 million worth of projects.

---

# EARTH MONTH 2011: Calendar of Events

## Friday, April 1

Forum: Asian Cities/Climate Change  
Noon-1pm, CUPPAH 110

## Tuesday, April 5

University of Commonsense  
10:30am-1pm, SCE 302

## Film: The 11th Hour

5pm-7pm, SPH-PI Auditorium

## Wednesday, April 6

Chicago Area Food Studies  
Working Group Inaugural Meeting  
3pm-5pm, Stevenson Hall  
Lower Level

## Friday, April 8

UIMC Wear Green to Work Day  
11am-1pm, UIMC

## Tuesday, April 12

Green Careers Panel  
6:30-8pm, Illini Center Orange &  
Blue Room, 200 S. Wacker Drive

## Wednesday, April 13

How to Cut Your Community Costs  
Noon-1pm, SSB Conf. Room B/C

Geothermal Presentation + Tour  
3pm-5:30pm, Lincoln Hall 206

## Wellness Jam

11am-1pm, SCE West  
Concourse/2nd Floor

## Thursday, April 14

How to Cut Your Community Costs  
Noon-1pm, CMW 221

## Friday, April 22

# EARTH DAY EVENTS

## Ecojamapalooza

11am-5pm, SCE Inner Circle +  
UIC Quad

## Forum: Urban Watersheds

Noon-1pm, CUPPAH 110



## Friday, April 15

UIMC Green Healthcare Fair  
10am-2pm, UIMC 1130-1135

## Tuesday, April 19

UIC Cares Day – Road to the Gulf  
12:30am-4:30pm, Sayre Lang  
Academy

## Wednesday, April 20

GIVE Event at the Hull-House Farm  
Noon-4pm, Hull-House Farm (Taylor  
& Halsted)

Faculty Senate Buildings &  
Grounds

1pm-2:30pm, CUPPAH 110

## Thursday, April 21

UIC EPA on Campus  
12pm-2pm, UIC Quad  
Rain Location: SCE Inner Circle

GIVE – Lights Out! Sticker  
Campaigns

1pm-3:30pm, SCE 245 + PSB 117

## Thursday, April 28

Car Free Day  
All Day

Historical Campus Tour by Bike

3pm, SW Corner of Halsted/  
Harrison

## Friday, April 29

Great Stuff Exchange  
10am-2pm, SCW Lobby

## Faculty and External Advisory Board Awards and Appointments

**Samuel Dorevitch, M.D.** was appointed Visiting Research Associate Professor of IESP in late 2010. Dr. Dorevitch's interests include environmental epidemiology; developing objective measures of health and exposure; waterborne illness; indicators of water quality; developing methods for measuring water exposure; communicating environmental information to the public effectively; asthma and obesity among inner-city residents.

**Jennifer Dunn**, an IESP External Advisory Board Member, was hired as an Environmental Analyst at Argonne National Laboratory in December. She is part of a team at the Center for Transportation examining the life cycle environmental impacts of fuel and vehicle technologies.

**Shelie Miller**, a former student in IESP's Integrative Graduate Education and Research Traineeship Environmental Manufacturing Management doctoral program, was awarded a Presidential Early Career Award for Scientists and Engineers (PECASE). The PECASE award is the highest award bestowed by the U.S. Government upon scientists and engineers in the early stages of their independent research careers. Dr. Miller, who earned her PhD in 2006, is currently an Assistant Professor at the University of Michigan School of Natural Resources and Environment.



*Shelie Miller, 3rd row, second from the left, accepts the prestigious PECASE award at the White House*

## NEWS:

IESP will host a seminar "Lifecycle of Urban Brownfields" presented by Dr. Deborah Lange, Executive Director of the Western Pennsylvania Brownfields Center and the Steinbrenner Institute for Environmental Education & Research at Carnegie Mellon University. The seminar will be held on May 16, 2011 at 11:00 a.m. in the IESP Conference Room 524 SPHW, 2121 West Taylor Street.

The Sustainable Brownfields Consortium, headed by IESP Outreach Coordinator Susan Kaplan, recently launched its website. The Consortium is a group of researchers and technical advisors who are analyzing best practices for redeveloping brownfields sites sustainably, rather than conventionally. Please go to <http://www.brownfields.uic.edu/> for more information.