

GIVING COMMUNITIES A VOICE IN FRACKING RESEARCH

IE OUTREACH LEADER PLAYS NATIONAL ROLE IN EFFORTS TO ENSURE THAT COMMUNITIES' CONCERNS ARE CONSIDERED WHEN FUNDING RESEARCH ON SHALE GAS EXTRACTION

Shale gas extraction (which includes hydraulic fracturing, or “fracking”) is a hot topic nationally, especially in North Carolina and other states that sit on gas-rich shale formations deep underground. These operations include not only the drilling/fracking itself, but also transportation, compressor stations and other operations involved in extracting natural gas to help meet our nation’s growing energy demands.

Some research is underway to understand the potential health and environmental impacts of shale gas extraction on the surrounding communities. But the communities themselves are not often consulted about what types of research and information they want or need to make informed decisions.

An assessment led by UNC IE’s Associate Director for Outreach and Public Service/Environmental Resource Program Director Kathleen Gray and colleagues in New York and Ohio aims to change that.

Gray, who leads the Community Outreach and Education Core (COEC) of the UNC Center for Environmental Health and Susceptibility, has been collaborating with peers at the Universities of Rochester and Cincinnati on a three-state assessment of community information needs regarding health impacts of shale gas extraction. Each school is home to a center funded by the National Institute for Environmental Health Sciences (NIEHS). Hydraulic fracturing has already started in Ohio; North Carolina and New York are both debating and creating their regulations now.

“NIEHS and others are looking to fund research on the potential health impacts of shale gas extraction, but nobody had checked in with the impacted communities to ask: What do you want to know? What are your concerns?” Gray explained. “We were pleased that NIEHS supported our efforts to include a community perspective in setting the research agenda.”

Gray and her co-investigators interviewed 48 landowners, public health, environment and outreach/education professionals, and government officials in the three states. They asked what health concerns interviewees had related to these operations entering their communities, and what research they needed to address their concerns and inform sound decision-making. Study leaders also asked where

these individuals currently get their information about potential health impacts of shale gas extraction, and what sources they do, or don’t, find credible.

This summer, Gray and her colleagues began analyzing what they gleaned in the interviews, looking for similarities and differences in what they heard across states, professional roles and views on fracking. They presented the results on November 4th at the American Public Health Association’s national meeting in Boston, and are working on a journal article for publication.

“We hope our findings will be valuable for agencies and foundations funding research, for communities to learn how they can participate in research and regulatory processes, and for states and localities that currently are developing regulations,” Gray said. “There’s been a lot of dialogue about the potential economic benefits and environmental harms from shale gas extraction, but not much discussion about how those two factors interplay with health, and how this industry may impact the health of communities. Hopefully this work will help stimulate that conversation.”

“This project has exemplified the benefits of research collaboration,” said Katrina Korfmacher, PhD, COEC director at the University of Rochester’s Environmental Health Sciences Center. “Getting the perspectives of community members in three different states enabled us to explore these issues in much greater depth. The fact that each team was so well-connected with its own local communities let us really examine the data in context, and help identify some of the key cultural, political, economic, land use and historical differences in the three states. This gives us real insight into how approaches to managing the environmental health impacts of hydraulic fracturing will differ from state to state.”

COEC Director Erin Haynes, doctor of public health at the University of Cincinnati’s Center for Environmental Genetics, is the third investigator. Haynes is an environmental health scientist who researches the health effects of toxicants in Ohio communities.

Gray also advocates for community engagement in research as a member of a national working group formed by NIEHS to determine what types of research are needed to better inform decision-making about shale gas extraction. The group will soon publish its recommendations, which include suggestions for enhancing community engagement as part of shaping the national research agenda and how to effectively share research findings with communities.



KATHLEEN GRAY

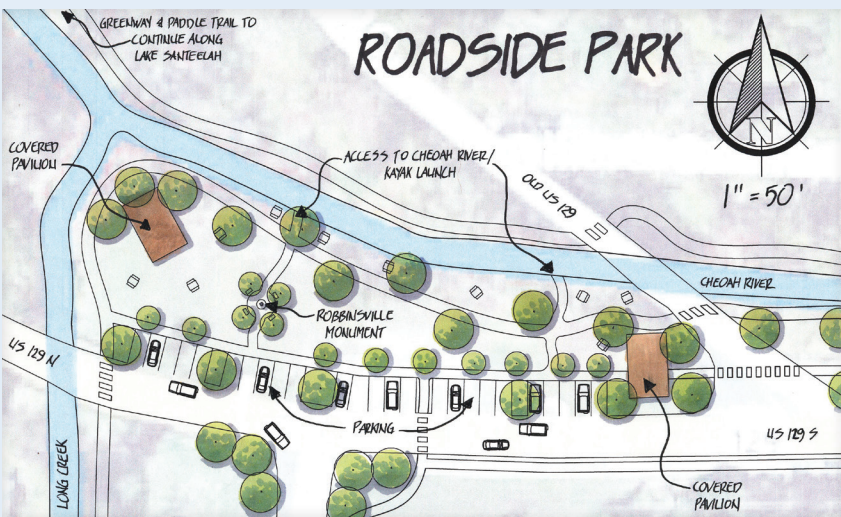


“There has not been much discussion about how economic benefits and environmental harms interplay with health. Hopefully this work will help stimulate that conversation.”

—Kathleen Gray, Associate Director for Outreach and Public Service



Before and after: A drab strip along Robbinsville's highway bypass is being transformed into a pedestrian-friendly destination.



All renderings by Asheville Design Center

Recommendations for revitalizing Robbinsville include a new green-way system along the town's waterways, and a reenergized downtown that will be a hub for the arts, entertainment and tourism.

IE HELPS WESTERN CAROLINA TOWN PLAN ITS REVITALIZATION

Robbinsville is a small, isolated town nestled in the rugged hills of one of North Carolina's westernmost counties, Graham County. Flanked by some of our state's most beautiful natural treasures, Robbinsville is a gateway to major attractions such as Joyce Kilmer Memorial Forest, Great Smoky Mountain National Park, Fontana Dam and Lake, and the Tail of the Dragon, a famous destination for motorcycle and sports car enthusiasts drawn to the miles of winding roads.

But the once-lively town of about 620 residents now has just one major employer (a furniture company), and a one-mile highway bypass has pushed development out of the town's center. These developments left many vacant or deteriorating buildings and just a handful of struggling businesses on Main Street.

Fortunately, the citizens of Robbinsville and Graham County have a can-do spirit, and under the leadership of the Graham Revitalization Economic Action Team (GREAT) and the Robbinsville Town Council, they are taking major steps to turn things around. In 2011, they asked the UNC Institute for the Environment's Center for Sustainable Community Design (CSCD) to help develop a plan to revitalize the town and transform it into an attractive destination for tourists, businesses and residents. With funding from UNC's Center for Urban and Regional Studies, IE was able to take on the project.

"Our role was to engage the people of Robbinsville in a process that would identify the key issues and challenges, develop a vision for the town, and help bring this vision to life," explained CSCD Deputy Director David Salvesen, who led the project under a grant from the Golden Leaf Foundation and in partnership with the Asheville Design Center.

"Most important, from the get-go we worked with the town, not for them, in a true partnership to create this revitalization plan and find ways to diversify Robbinsville's economy by capitalizing on its idyllic setting and its access to the attractions nearby."

Salvesen and UNC City & Regional Planning graduate students Marcia Perritt and Eric Thomas made monthly visits to Robbinsville, conducting dozens of personal interviews, focus groups and workshops. For the students, it was an uncommon opportunity to tackle real-world problems and make a direct impact on people's lives.

In July 2012 the UNC team presented the Reimagining Robbinsville Revitalization Plan to community leaders. (Visit www.grahamcounty.net/great/great.htm to see this, and related, plans.) The comprehensive report included detailed recommendations for promoting tourism, developing greenways and parks, revitalizing downtown Main Street, improving the design and appearance of the bypass, promoting local economic development and initiating community dialogue on sensitive issues.

According to GREAT head Rick Davis, the Reimagining Robbinsville document has been endorsed by the Robbinsville Town Council as its official revitalization plan. "The Council now has a plan that was developed with input from several hundred Graham County citizens. It will guide their decisions for many years."

The town and county have hit the ground running. Plans are moving forward for new greenways, a recreation complex, and other improvements to make Robbinsville a more walkable community with an emphasis on health. Efforts to make the bypass streetscape more inviting have already yielded tree-lined roads, crosswalks and medians. Soon, the building facades along Main Street will be painted and a town square created to welcome visitors and provide a gathering place to draw people to the town's center. And a new, affordable housing complex that will link the Main Street and bypass areas together is on the drawing board.

Davis, fellow GREAT member Brenda Artiss, Town Council Alderman Jacky Ayers and their colleagues have been able to leverage the Reimagining Robbinsville plan to help secure funding and build partnerships to keep the momentum going.

The planning process was a lot of work, but a lot of joy as well, noted Artiss. "David and the UNC-Chapel Hill team not only brought their expertise, but also an insightful, relaxed, respectful and sometimes comical attitude to the process that enabled Robbinsville and Graham County citizens to easily express their aspirations for the future of Robbinsville," Artiss said. "This approach greatly influenced the citizens' commitment to the shared vision in process today."

UNDERGRADS SPEND SUMMER TOURING, LEARNING—AND BLOGGING ABOUT—EUROPE’S GREENEST CITIES

This summer, through Honors Carolina’s Burch Field Research Seminars Program, and in collaboration with the Curriculum in Environment and Ecology, Institute for the Environment faculty Greg Gangi and Elizabeth Shay guided 24 UNC undergraduates through a six-week field study in Denmark, Sweden and Germany. Students learned about renewable energy, transportation, sustainable design and environmentally sensitive city and regional planning while meeting with some of the field’s pioneers.

The fast-paced program included stops in big cities like Munich and Copenhagen and in innovative rural communities like Schönau – home of the “Black Forest Rebels,” who turned their town into an energy-producing cooperative. The group visited businesses, universities, NGOs and organizations like Fraunhofer — a network of research and development centers that embodies the German model of linking public and private sectors in education, research and development.

Students blogged about their experiences and insights throughout the summer. Here are a few excerpts. To read more blog posts and see more great photos, visit <http://transitioning.web.unc.edu/>



RENEWABLE ENERGY AND RURAL DEVELOPMENT

We took a daytrip to Schönau to visit Elektrizitätswerke Schönau (EWS), a cooperative that runs the local power grid and supplies more than 150,000 German citizens, businesses and industrial enterprises with clean electricity generated from hydropower, wind, solar, biogas and cogeneration. We learned how EWS grew out of the Schönau community’s reaction to the 1986 Chernobyl nuclear power disaster, and saw cogeneration and hydroelectric plants in action. When we asked our guide, Dr. Eva Stegen, about climate change disbelievers, she joked that if asked “Do you believe in climate change?” a German would reply “Do you believe in gravity?”



RESEARCHING RENEWABLES

During our time in Freiburg, we visited the Fraunhofer Institute for Solar Energy Systems (ISE), an award-winning research institute committed to developing and promoting sustainable and economic energy supply systems. We got to see some of projects the ISE is undertaking, including LED lighting, silicon photovoltaics and hydrogen production and storage for use as automotive fuel.



SWEDISH INGENUITY: EVEN THE GARBAGE SYSTEM IS INNOVATIVE

Today we toured Hammarby Sjöstad, a section of Stockholm whose urban redevelopment efforts have made it one of the world’s most desirable residential communities. Once part of an old industrial area, Hammarby has been redeveloped through an inclusive planning process that focused on energy, water and transportation. It even has a novel method of waste management that includes a complex system of underground chutes that transports waste using vacuum suction so it can be separated and reused, often for energy generation.

ANOTHER SWEDISH SUCCESS STORY

The city of Malmö reinvented itself after its once-powerful shipbuilding industry collapsed with rising oil prices. Faced with the choice of becoming a ghost town or reimagining the local landscape, the city revamped its western harbor area into what has become a prime model for a sustainable brownfield development. On our walking tour, we got a firsthand look at the combination of ample green space with sustainable mixed-use development. The harbor already runs off of 100 percent renewable energy, but has set even higher goals for reducing per capita energy consumption in the coming decades.



WIND AND WATER COMBINE IN COPENHAGEN

On our train ride from Sweden to Denmark, we looked out the windows onto a sea full of offshore wind turbines. After arriving in Copenhagen, we boarded a boat to visit the Middelgrunden Wind Farm, a cooperative owned by 10,000 shareholders. We pulled right between some of the turbines, and everyone snapped photos in an attempt to capture the scale and beauty of the wind farm up close. It felt great to be out on the water and to get such a personal view of these immense structures, which quietly produce clean energy for the city.



IE BOARD MEMBERS RECEIVE UNC DISTINGUISHED ALUMNI AWARDS

Two members of the UNC Institute for the Environment Board of Visitors received Distinguished Alumni Awards during the installation of Chancellor Folt on Saturday, October 12, 2013. Dr. William E. Easterling, dean of the College of Earth and Mineral Sciences at Pennsylvania State University, and Mr. Todd Miller, executive director of the North Carolina Coastal Federation were honored for outstanding contributions throughout their careers to the advancement of environmental research, education, and engagement.

Established in 1971, the University's Distinguished Alumni Award, presented by the General Alumni Association, recognizes graduates for exceptional service to others and their respective fields.

Dr. William Easterling is an internationally recognized expert on geology and climatology. He was appointed dean of the Penn State's College of Earth and Mineral Sciences in 2007 and has been a faculty member there since 2001. Easterling's research has played critical roles outside of academia. He is among the lead authors of the United Nation's Intergovernmental Panel on Climate Change (IPCC) report on human-induced climate change, its anticipated impacts, and strategies for adaptation and mitigation. The team of authors of this report, including Easterling, received the 2007 Nobel Peace Prize.

Easterling has been on the Board of Visitors of the UNC Institute for the Environment since 2010, where he uses his rich experience with university structure, financing and governance to contribute to the Board. He is a key advisor to the Institute Director, Larry Band, and the Institute staff concerning structure, governance and funding. He has extensive knowledge of Carolina as an institution, having earned all three of his degrees from the University; a Bachelor of Arts in Geography and History ('76), a master's degree in Geography and Industrial Location Economics ('80), and a doctorate in Geography and Climatology ('84).

Todd Miller is the founder and Executive Director of the North Carolina Coastal Federation (NCCF), a highly respected conservation and advocacy



group for the protection of the North Carolina coast. Under Todd's leadership, NCCF has grown to three offices, a multi-million dollar budget, and a staff of 22. He is a founding board member of Restore America's Estuaries and has served on its board since 1995. Miller's previous distinctions include the Old North State Award, presented to him in 2007 by Governor Mike Easley, as well as the Environmental Law Institute's National Wetlands Community Leader Award, which he received in 2011.

Miller has been a member of the Board of Visitors since 2011, and brings a wealth of non-profit management experience to the Board. As a coastal North Carolina native, he contributes extensive knowledge of the North Carolina coast and its many environmental and management challenges. Miller holds two degrees from UNC-Chapel Hill—a Bachelor of Arts in Urban Studies ('78), and a master's degree in City and Regional Planning ('80).

NEW GEOGRAPHY FACULTY MEMBER STRENGTHENS UNC'S INTERNATIONAL WATER FOCUS



Diego Riveros-Iregui was working in a geology laboratory in his native Colombia when he decided he'd prefer a career where he could spend more time in the field than the lab. He came to the United States for graduate school, and quickly developed an interest in water. Riveros-Iregui pursued this interest while earning a master's degree in hydrogeology at the University of Minnesota and a Ph.D. in ecology and environmental sciences at Montana State. After a post-doctoral fellowship at the University of Colorado, he joined the faculty at the University of Nebraska.

A rising star in ecohydrology and watershed hydrology, Riveros-Iregui successfully secured several research grants to study the role of water on soil nutrient cycling in mountainous ecosystems. In 2011 he learned that the Colombian government and the World Bank were offering grants to Colombian citizens working abroad to pursue collaborative research in Colombia. The program was perfect fit with Riveros-Iregui's expertise, and he received funding to study land use change effects on water quantity and quality in the Andes Mountains. For the past two years, he has been making regular trips back to his homeland to work on the project in collaboration with the National University of Colombia-Bogotá (reuniting with colleagues from his undergraduate days) and the Bogotá Water Supply System.

Earlier this year, Riveros-Iregui was presented with another opportunity that was too good to pass up: the chance to join the UNC faculty.

"UNC has a great reputation, and there are several scholars here and across the Research Triangle who work on water-related issues. I saw this as an incredible opportunity to develop collaborations and contribute to the advancement of the water sciences at UNC," he said.

Another key reason for coming to UNC, Riveros-Iregui explained, was "the expertise, especially in geography and at UNC's Institute for the Study of the Americas (ISA), of those who are working on the human aspect of land use change in South America, from the political context to the economy to coupled human-natural systems. So I thought my work on the physical aspect of land use change would be a nice complement to what is already in place."

This summer, Riveros-Iregui moved his young family – he and his wife have a nine-month-old daughter – east. Now assistant professor of geography and a member of the UNC Institute for the Environment and a faculty affiliate at ISA, he is continuing his research projects in the Andes and the mountains of Montana, while looking to establish a project in North Carolina.

This semester, Riveros-Iregui is teaching a watershed systems course for undergraduate and graduate students; this spring he will teach Introduction to Geographic Systems. In December, he will resume his regular trips to Colombia.

"Diego is a talented, innovative scientist working at the intersection of hydrology and ecosystems," said IE Director Larry Band, a watershed hydrology expert himself. "He is asking critical questions on the way the Earth's surface—its soils, vegetation and topography—combine to cycle water and carbon and promote sustainable ecosystems. He combines state-of-the-art field sensors with spatial analysis and modeling; skills that will greatly benefit the university's research and education missions, and our students especially."

CONGRATULATIONS! IE CELEBRATES UNC CURRICULUM FOR THE ENVIRONMENT AND ECOLOGY'S 2013 GRADUATES



Clockwise from top left: Hannah Meeler with grandfather Thomas Ruffalo and Mother Mary Ellen Lewis; new graduates celebrate together at the NC Botanical Garden; Haley Vatcher with her mother Sheila; Doug Rader, Chief Oceans Scientist at the Environmental Defense Fund, delivers his commencement address to the new graduates; New graduate Ann Soltan with Dr. Greg Gangi and Dr. Amy Cooke.



JOHN BELL JOINS IE AS DIRECTOR OF DEVELOPMENT ENVIRONMENT

IE is pleased to welcome John Bell '79 as our Director of Development-Environment, effective October 15, 2013. John, who has more than twenty years of experience in fundraising, joins IE from the Conservation Trust of North Carolina in Raleigh, N.C., where he served as Director of Development since 2004. His background also includes development positions with Habitat for Humanity and other organizations, as well as extensive experience with community planning entities. Working with the Institute's Director, Larry Band, and with its faculty, staff and Board of Visitors, John will lead the Institute's development program as UNC-Chapel Hill plans a university-wide fundraising effort under the leadership of Chancellor Carol Folt. John's commitment to the non-profit sector includes past or present service on a number of boards and committees, including ones affiliated with Guilford College, the North Carolina Community Foundation and the Town of Chapel Hill. John, a native of North Carolina, resides in Chapel Hill with wife, Judy. They have a son, Nate, and daughter, Lucy. We are so pleased to welcome John back to Carolina!

GIFTS &
GRANTS

NEW FUNDING SUPPORTS IE PROJECTS

IE scientists at the Community Modeling and Analysis System (CMAS) Center are working with team investigators from the University of Alabama in Huntsville (UAH) and the U.S. Environmental Protection Agency (EPA) to improve the performance of the Air Quality Decision Support Tools (DSTs) used in the setting and testing of emission controls under the Clean Air Act State Implementation Plans process. With an **\$87,298** grant from the UAH, CMAS center scientists use information retrieved by the NASA satellites to improve the air quality model simulations of atmospheric pollution. The system will be used by many state and local air quality management units to determine compliance with EPA's National Ambient Air Quality Standards.

The U.S. Forest Service has extended its grant to IE to assess the impacts of climate change on forest fires (from the present) out to the mid-21st century. With this **\$65,000** grant Uma Shankar and her research team in the Center for Environmental Modeling for Policy Development will use the coupled WRF-CMAQ modeling system to study the impacts of fires on the ambient concentrations of short-lived climate forcers such as organic and black carbon, and ozone.

With a **\$90,000** grant from the Wallace Genetic Foundation, IE will hire a new staff member focused on translating research for non-academic audiences. Improved research translation will increase IE's visibility and connectivity to public officials, environmental agencies, community groups and private firms, and accelerate the application of its research findings. IE Associate Director for Outreach and Public Service Kathleen Gray is the principal investigator on this grant.

The National Oceanic and Atmospheric Administration (NOAA) provided a **\$89,935** grant to IE to improve natural disaster risk information provided to emergency managers by the National Weather Service. With this grant, IE Research Associate Jessica Losego will continue her work with emergency managers to learn the most helpful format and content of weather information provided to them by National Weather Service officials. This information guides critical decisions made by emergency managers in warning their communities about natural disaster risk.

With two grants totaling **\$400,000** from the Federal Aviation Administration (FAA), IE will continue research led by Research Professor Sarav Arunachalam to assess air quality impacts of aviation emissions in the U.S. In the latest phase of this project funded under the DOT's Partnership for Air Transportation, Noise and Emissions Reduction (PARTNER) Center of Excellence, the project team will refine a new modeling system to support air quality and health-

based assessments for the FAA. Dr. Arunachalam is supported by IE research associates Alejandro Valencia Arias and Mohammad Omary. Graduate students Scott Boone, Pradeepa Vennam and Matt Woody will contribute to the project.

The National Science Foundation has awarded IE with a **\$1.1 million** grant to study impacts of China's "Grain for Green" reforestation program. The study will be led by Conghe Song, associate professor of geography, and will explore the impacts of the program on the program's terrestrial system services and their feedbacks to farmer's livelihood decisions in rural China from 2013 to 2017. Professor of Geography and IE Director Larry Band, Assistant Professor of Geography Xiaodong Chen, Assistant Professor of Environmental Policy Pamela Jagger, and Research Professor of Biostatistics Richard Bilsborrow are among the team members from UNC Chapel Hill. Dr. Ge Sun at USDA's Forest Service, Southern Global Change Program, Dr. Quanfa Zhang at Wuhan Botanical Garden, Chinese Academy of Sciences, Dr. Zhiqiang Zhang at Beijing Forestry University, and Dr. Xiaoni Xu at Anhui Agricultural University are also collaborators for the project.

IE has received a **\$567,880** grant from the Clean Energy States Alliance (CESA) to facilitate air resource analyses for federal and state agencies in the states of Wyoming, Colorado, and Utah to improve information for the public and stakeholders. The Three-State Air Quality Study (3SAQS) will assess the environmental impacts of sources related to oil and gas development and production. The cooperators will use models to quantify impacts of proposed oil and gas development projects air quality. This project includes cooperators from U.S. Environmental Protection Agency, United States Forest Service, Bureau of Land Management, National Park service, and the state air quality management agencies of Colorado, Utah, and Wyoming. Research Associate Zac Adelman will lead the work for IE.

For the third time in a row, the U.S. Environmental Protection Agency(EPA) has awarded IE a five-year contract totaling up to \$18 million to provide scientific support to the agency in improving air quality in the United States. The Emission, Air Quality and Meteorological Modeling Support (EMAQ) contract will allow IE to continue to help the EPA develop, refine, and test tools and models focused on how emissions of pollutants affect air quality. The outputs of this project, which combines elements of research, software development and applications of a suite of environmental models, are often used by the EPA to develop air quality policy for the nation to protect public health. Research Associate Professor Sarav Arunachalam will lead the work for this contract with several staff members from IE's Center for Environmental Modeling for Policy Development.

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Surrey Parker Roberts
Charles Edward Roe
Rusty Rogers
Amy Daum Rosemond
H. Bradley Rouse
Diana Elizabeth Roycroft
Karen Lee Rust
Richard Wilber Rutherford
William Salowe
Judy Newton Scurry and
William Cooper Scurry
Nimesh Bhupendra Shah
Zankhana Nimesh Shah
Ezra Sharron
Lisa Sharron
Catherine Anne Shields
Matthew Copeland Simon
Kathryn Lynn Sinopoli

Wade Hampton Barnes Smith
Brent Allen Sowul
Jeanne Stahl
David Taylor Steber
Briana Janelle Steele
Jeffrey Lee Stock
Ann Pearce Stokes
J. Michael Strother
James Townsend Tanner, Sr.
Donna Tolar
Stephen Tolar
Mina Rad Vakil-Zadeh
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Gary William Whalen
Deborah Jeanne Wright
J. David Yount
Katherine Suzanne Zellner

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ON THE BOARD

IE wishes to extend its appreciation to **John Cooper**, **Olivia Holding** and **Lloyd Yates** for their service on the Institute's Board of Visitors. They all rotated off the Board on June 30, 2013.

John Cooper joined the Board in 2009, when he was a program director at MDC in Durham, North Carolina. He is now an associate professor of practice in Landscape Architecture and Urban Planning at Texas A&M University.

Olivia Holding was a founding member of the Carolina Environmental Program Board of Visitors, joining the Board in 1998 (the Carolina Environmental Program became the UNC Institute for the Environment in 2006). She served as the vice chair of the Board of Visitors from 2009-2011, and served on the Carolina Environmental Program/UNC Institute for the Environment Campaign Committee during the Carolina First campaign. We owe Olivia a special vote of thanks for her long and dedicated service, her generosity, and her support.

Lloyd Yates joined the Board in 2010, as president and chief executive officer of Progress Energy-Carolinas. He is now executive vice president of Regulated Utilities for Duke Energy.

This fall, **Cari Boyce**, vice president for environmental and energy policy at Duke Energy, **F. Bryan Brice, Jr.**, lead Principle at the Law Offices of F. Bryan Brice, Jr., and **John Preyer**, President of Restoration Systems have joined the Board. Previously, Cari worked extensively in communications and environmental regulation for Progress Energy. Before founding his law firm, Bryan served as staff attorney at the U.S. Environmental Protection Agency and managed environmental matters for the N.C. Department of Transportation. John co-founded Restoration Systems, an environmental mitigation and stream and wetland restoration company, with George Howard in 1998. He has served on the boards of the North Carolina Coastal Federation and the NC Wildlife Habitat Foundation.

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UNC environment

PEOPLE NEWS

John Bell has joined the Institute as Director of Development- Environment. (See sidebar on page 7).

Phil Berke will leave IE and join the Texas A&M faculty as a Presidential Scholar, where he will be a professor in the Department of Landscape Architecture and Urban Planning. Phil will also serve as director of the Institute for Sustainable Coastal Communities. He served as the chair of the Carolina Environmental Program from 2004 to 2008 and then served IE as both deputy director and director of its Center for Sustainable Community Design. Phil was a faculty member in UNC's Department of City and Regional Planning for 19 years.

James Costa has returned from sabbatical to resume his directorship of IE's Highlands Field Site. Costa, professor of biology at Western Carolina University, and also serves as director for the field site's institution, the Highlands Biological Station.

Darin Del Vecchio, research associate with IE's Center for Environmental Modeling for Policy Development, has left IE. Darin will work for the Environmental Protection Agency in Research Triangle Park, N.C.

Greg Gangi, IE's associate director for education, is now a senior lecturer in the Curriculum for the Environment and Ecology. Senior lecturer is the highest teaching position at UNC. Gangi will continue serving as teacher and advisor for environmental science and environmental studies majors, and will continue his primary-appointment role with IE as associate director for education.

Adam Gibson is a new lecturer at IE's Outer Banks Field Site. Gibson teaches social science research methods for students in residence at the field site.

Kathleen Gray, IE's associate director for outreach and public service and director of the Environmental Resource Program, is beginning a graduate program at North Carolina State University (NCSU). She is pursuing a doctorate in science education through NCSU's College of Education. Gray will continue in her current capacity at IE during her studies.

Tracy-Ann Hyman spent the summer with IE as a Fulbright Nexus Scholar and will now return home to Kingston, Jamaica. She studied community emergency management systems reliability for communities in small island states with IE Research Assistant Professor Jen Horney.

T. William Lester has joined IE as a faculty fellow. Lester is an assistant professor in the Department of City and Regional Planning.

Amy MacDonald has left IE. MacDonald was an environmental health educator in IE's Environmental Resource Program. She will join Wake Technical Community College as Director of Grants Performance.

Johanna Rosman has joined IE's faculty at the Morehead City Field Site. She is a research assistant professor in the Department of Marine Sciences.

Elizabeth Shay is now a faculty member with the Institute for the Environment. Now a research assistant professor, Shay will continue direct IE's Sustainable Triangle Field Site.