News/Updates

Mark Sobsey, PhD, Kenan Distinguished Professor of environmental sciences and engineering, and his team received an $8.5 million dollar award from the U.S. Agency for International Development (USAID), to expand work initiated under a Gillings Innovation Lab to bring clean drinking water and improved sanitation and hygiene to homes in Cambodia, Laos and Vietnam. The team will search for sustainable ways to increase the use of ceramic or biosand water filters in homes that lack clean drinking water, to help reduce diarrhea and related diseases that kill nearly 2 million children a year.

Alice Ammerman, PhD, professor of nutrition and Director, Center for Health Promotion and Disease Prevention and Gillings Innovation Lab recipient, presented keynote addresses at two conferences in Australia that focused on promoting local food systems. At the Food for All Program meeting in Melbourne, Alice Ammerman, PhD, professor of nutrition and Director, Center for Health Promotion and Disease Prevention and Gillings Innovation Lab recipient, presented keynote addresses at two conferences in Australia that focused on promoting local food systems.

Spotlight

Focus on the Environment

Proper environmental management is the key to avoiding the quarter of all preventable illnesses which are directly caused by environmental factors. The environment influences our health in many ways—through exposures to physical, chemical and biological risk factors, and through related changes in our behaviour in response to those factors. —World Health Organization

Diarrhea kills more children around the world than malaria, AIDS, and tuberculosis combined. Current farming practices are chemical- and fossil fuel-intensive. North Carolina hog waste lagoons present health threats to local communities through air and water contamination. Arsenic from both naturally occurring and industrial sources threatens health in the US and around the globe. Urban air pollution contributes to 360,000 deaths each year in the rapidly urbanizing Western Pacific region. Four Gillings Innovation Labs are translating environmental science into practice, and in the process improving both public health and our environment:

Will Vizuete, PhD, assistant professor of environmental sciences and engineering, is leading a team that is applying new technology to study air pollution and lung cell damage, both in the lab and in the field. Using a state-of-the-art “smog chamber,” the team is developing models of air pollution and toxicity which will help urban planners and public health officials in North Carolina and around the world.

A water quality project led by Mark Sobsey, PhD, Kenan Distinguished Professor of environmental sciences and engineering, is developing and evaluating portable field...
For years, the world has exhorted us to “Think globally, act locally.” Students and faculty at the Gillings School of Global Public Health are doing even better by acting both locally and globally. Four Gillings Innovation Labs (described in the “Spotlight” section) are designed to assess and reduce environmental health threats, and to improve lives across North Carolina and around the world. At the same time, they are increasing the School’s capacity to conduct such high-impact projects and providing unequalled opportunities for students interested in solving some of the most pressing public health challenges.

For instance, Miroslav Styblo’s Innovation Lab is increasing School research capacity by using a new optimized atomic absorption spectrometer to quantify arsenic levels in human tissue. The Lab is also providing both Carolina and Czech students invaluable training. Jenna Currier is a 2nd year doctoral student in toxicology, working to develop new methods to analyze arsenic in human tissues. Jenna explained the reasons why her involvement was important to her training:

**Being a part of Dr. Styblo’s lab allows me to work with human samples as a part of my thesis research. I am very excited about the possibility of traveling to Mexico to analyze samples from a population study on type 2 diabetes. I chose to work in the Styblo lab because the research opportunities relate to widespread public health issues...**

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### Looking Ahead

- **New student funding** for incoming students (Fall 2010 class) has been committed to foster the recruitment and enrollment of the strongest applicants to the UNC Gillings School of Global Public Health.

- The next round of **Gillings Innovation Lab** funding is targeted at junior faculty. During the fall semester, check [www.sph.unc.edu/accelerate](http://www.sph.unc.edu/accelerate) for the 2010 submission schedule and guidelines.

- **Up to two Gillings Dissertation Awards** of $5,000 each will be made in 2010. Doctoral candidates will be eligible, and awards will go to research that is most likely to achieve or lead to substantial public health impact.
Students’ work on these environmental projects is getting noticed as well. Three doctoral students (see this issue’s “News/Updates” section) working with Will Vizuete received awards for their Gillings Innovations Lab-supported presentations at the Society of Toxicology meetings in March 2009.

All four projects described in this month’s “Spotlight” section have actively engaged students as junior colleagues. Among them, the four currently active environmentally-focused Innovations Labs involve 33 students, with 17 receiving financial support for their work. Gillings Innovation Labs are designed to accelerate public health solutions directly. An important but less direct benefit to the School and to public health is developing the ability to anticipate public health challenges and accelerate solutions in the next generation of public health scientists and leaders. Judging by their achievements to date, all of the Labs described in this month’s Solutions will achieve public health impact, increase our School’s capacity and provide a fertile environment for students.

Profile
Innovation labs increase capacity, train new leaders
About the Program: Continuous Quality Improvement

After each of the first two competitive Gillings Innovation Lab rounds, Carolina Public Health Solutions has conducted a post-award review of Gillings Innovation Lab processes as a way to ensure responsiveness to the concerns of participants, to foster open discussion of the review process, and to improve future rounds. The review solicits feedback on all aspects of the process from members of the Dean’s Council CPHS sub-group, principal investigators for awarded and non-awarded proposals, merit reviewers, and CPHS operational staff. From this feedback, recommendations are made for process improvements in future rounds. In addition, the review identifies larger issues facing the Innovation Lab process, and recommends actions to address them. The report is generated independently by the CPHS Scientific Director, and formally responded to by the CPHS Managing Director. The reports’ executive summaries and responses are available at the CPHS website.

This system for internal quality improvement is paying off. The first round review characterized the review process as well well conducted and generally transparent, but also identified a number of needed improvements to increase transparency, reduce burden on reviewers and applicants, and assure consistency across reviews. After their implementation in round 2, CPHS received compliments for clarifying and streamlining the review process, and for modifying procedures to promote open discussion and further minimize conflicts of interest. CPHS works steadily to improve the Gillings Innovation Lab review process, documenting the improvements in the review process, and discarding those practices that do not improve the process.
she presented, “To explore the connections between ‘eating local’ and potential impacts on obesity, the environment and economic viability of communities.”

Her message at the Daring to Dream: Preferred Futures through Home Economics conference in Darwin was, “Yes we can...Create a More Just and Health Promoting Food System.”

Kim de Bruijne, Seth Ebersviller and Ying-Hsuan Liu, doctoral students in the department of environmental sciences and engineering, received recognition for air quality research presented at the 48th annual meeting of the Society of Toxicology in Baltimore, MD. The students conducted research through a Gillings Innovation Lab directed by Will Vizuete, PhD, assistant professor of environmental sciences and engineering, that seeks to understand the potential health effects of air pollution.

With funding from the Gillings gift and under the leadership of the Office of Global Health, the department of maternal and child health will review the curricular content of maternal and child health core courses in order to include more global health content. This work is part of the UNC Gillings School of Global Public Health’s initiative to infuse more global health content across the curriculum.

Leah Sirkus, MHS and PhD candidate in the department of epidemiology, was recently appointed as a member of the School’s Acceleration Advisory Committee (AAC). She brings to the committee the unique perspectives of current public health students, and she will act as a liaison with other student leaders at the School.

Feedback
What do you think of our newsletter? How can we improve?
What would you like to see? Please write to us at accelerate@unc.edu and give us your feedback. Solutions is a quarterly publication of Carolina Public Health Solutions and the UNC Gillings School of Global Public Health. Contact us at 135 Dauer Drive, CB #7415, Chapel Hill, NC 27599-7415.
Phone: 919-843-3945 Email: accelerate@unc.edu

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tests for fecal contamination in water, which will be affordable and usable by local residents without specialized lab equipment or technicians.

As part of a larger project focused on sustainable farming and health, Alice Ammerman, DrPH, professor of nutrition, and her team are investigating the environmental and financial impacts of modern fossil fuel-intensive farming and transportation methods on public health, and the potential for greater use of local farming methods to mitigate environmental and health risks.

Miroslav Styblo, PhD, research associate professor of nutrition, is leading a combined US-Czech Republic team to develop novel instrumentation and methodologies to analyze arsenic in target human tissues, and then validating those methods in the laboratory and from population studies. After pilot studies are conducted, these new methods will be applied to public health, aiming to improve risk assessment and treatment of diseases associated with exposures to arsenic around the globe.

Mike Aitken, PhD, professor and chair of the department of environmental sciences and engineering, is leading an Innovation Lab to manage hog waste in eastern North Carolina, which will reduce nitrogen and ammonia production while enhancing the capture of methane from the waste to be used as fuel.

These Gillings Innovation Labs are accelerating solutions to crucial environmental public health challenges that too seldom receive attention. At the same time, they are creating new capacity and training opportunities for the School (see this issue’s “Profile” section), and leading to larger projects which scale up the impact of effective public health interventions (see this issue’s “From the Managing Director” and “News” sections). The modest investments made in these outstanding research teams through the Gillings Innovation Labs will continue to pay dividends in enhanced capacity, improved public health, and environmental stewardship for years to come.

Seeing is Believing

“We could see how hog waste is sprayed onto fields, how the effluent runs into ditches that run into creeks that lead to rivers, including the Neuse, and pollutes all it touches. We saw how close the spray would come to neighboring houses . . . . ”

“This is a public health problem . . . . [O]ur research provides critical pieces of the evidence about the relationship between industrial farm animal production and the environment and human health.”

Dean Barbara K. Rimer, following a tour of eastern North Carolina
http://blog.sph.unc.edu/monday_morning/