

## Gillings Innovation Labs focus interdisciplinary efforts on tough public health problems

UNC's Gillings Innovation Labs (GILs) bring together interdisciplinary research groups to focus concentrated efforts on solving big public health problems. They vary in topic, scope, focus and purpose — but share certain characteristics. All strive to be innovative, have impact, and accelerate solutions to public health problems across North Carolina and around the world.

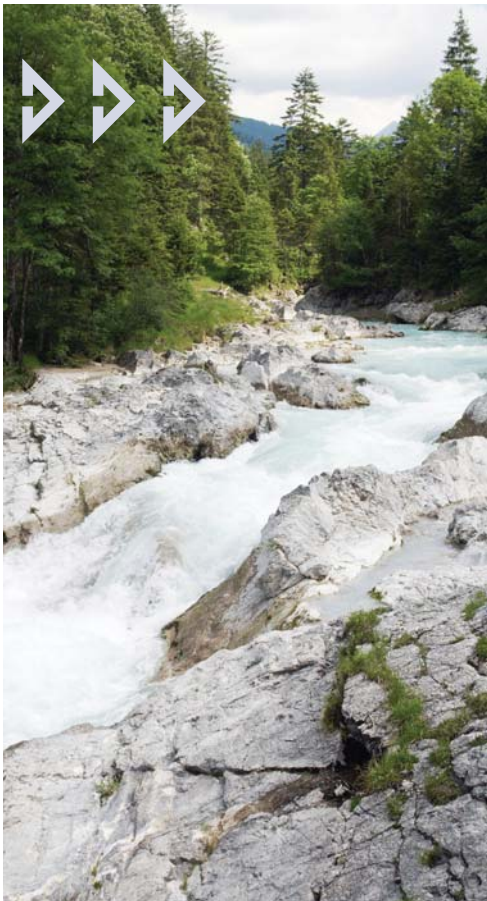
Principal investigators must be UNC public health faculty members. GIL leaders are encouraged to include students in their projects. Other collaborators and supporting team members may be UNC faculty as well as other experts, including people from government agencies, other non-profit organizations and businesses. (See [www.sph.unc.edu/accelerate](http://www.sph.unc.edu/accelerate) for detailed guidelines.)

Project proposals are submitted to Carolina Public Health Solutions, the organization that, along with the School's Dean's Office, administers programs supported by Gillings gift money. The proposals are then reviewed by subject-matter experts throughout the United States and abroad. Their recommendations are reviewed by UNC Gillings School of Global Public Health Dean Barbara K. Rimer and her team of associate deans, department chairs and internal experts for final funding decisions.

"We were delighted by the strong, innovative proposals we received for the first competitively awarded GILs," Rimer says. "We're grateful to the excellent reviewers and to department chairs and other School leaders, all of whom were deeply engaged in the review process. What excites me especially is that each funded project has the potential to solve real public health problems. While some are focused at home and others abroad, they all have potential for broad dissemination."

Some of the currently-funded GILs aim to:

- **Advance statistical science to provide safer, faster treatments for patients:** The Center for Innovative Clinical Trials is developing new statistical methodologies to improve clinical trials of medicines and other treatments in development. The current methods are lengthy and expensive, and still, the trials don't always identify potentially harmful side effects. The Center, led by Dr. Joseph



Ibrahim, Alumni Distinguished Professor of biostatistics, has an interdisciplinary focus that brings together faculty from several UNC departments and additional collaborators from industry, who are engaging jointly in both methodological and applied research in clinical trial design, analysis and dissemination. The goal is to bring better treatments to patients faster and less expensively.



Dr. Joseph Ibrahim

■ **Evaluate portable field tests to detect fecal contamination in water:** This GIL, headed by Dr. Mark Sobsey, Kenan Distinguished University Professor of environmental sciences and engineering, will develop and evaluate a simple, inexpensive, portable field test to detect fecal contamination in water. Infectious diseases from fecal contamination of water include diarrhea, dysentery, cholera, enteric fevers, and infectious hepatitis. Together, they kill more than

1.6 million people a year and make billions more people sick. “We’re really excited to get this research under way and work with our international public health partners,” Sobsey says. “The



Dr. Mark Sobsey

ultimate goal is to make simple, reliable tests that will be commercially available to people around the world within two years.”

■ **Find ways to link, analyze, and manage large electronic data repositories:** Dr. David Richardson, assistant professor of epidemiology at the School, is leading this GIL, which is focused on the development of innovative computer systems that can link and analyze data collected in electronic hospital and ambulance records. The idea is to get a clearer picture of what diseases are most prevalent in this setting and how they are being treated. More complete information could result in a better understanding of the causes of disease and more effective efforts at prevention

and/or treatment. Patient data confidentiality will be protected and honored in the project. The UNC Schools of Medicine and of Information and Library Science are project partners. “Finding an innovative system to link these data repositories so they can be better analyzed and managed could significantly improve the state’s ability to monitor

tissue to examine the effect of toxic pollutants in that air.

■ **Develop a local, sustainable food system:** Dr. Alice Ammerman, nutrition professor and director of the Center for Health Promotion and Disease Prevention, leads this GIL — a two-year study to improve understanding about health, environmental, and economic

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*Dr. Barbara K. Rimer • Dean, UNC Gillings School of Global Public Health*



and investigate health problems in the population, and speed up timely solutions,” Richardson says. “By better mining available data and managing information, local and state medical officials will have more complete information on which to make decisions on new policies and allocation of resources.”

■ **Identify harmful city air pollutants:** This GIL, led by Dr. William Vizuete, assistant professor of environmental sciences and engineering at the School, will focus on the measurement of harmful pollutants created in city air. Epidemiological studies have linked certain air pollution to tens of thousands of deaths worldwide each year. Yet, laboratory toxicology studies of these same pollutants show few health effects at levels seen in the ambient air. What is missing in these studies, says Vizuete, are the harmful pollutants that are created in the air. These typically are unknown and not measured. Vizuete’s team, which includes scientists from the UNC School of Medicine, will look for easier, more effective ways of finding and measuring toxic pollutants breathed by people in cities. The team will develop and construct portable smog instruments to test air at various locations around the world, and use human lung

issues associated with this growing national trend. “Among the most pressing public health problems in the U.S. today are obesity, environmental degradation, and health disparities,” Ammerman says. “Contributing in a big way to each of these problems is our current food system, with its heavy dependence on fossil fuels (fertilizers, pesticides, and gasoline) for large-scale production and long-distance transport of often high-calorie, nutrient-poor food.” Among other things, this project will help determine whether current consumer interest in locally-grown food can create an economic environment supporting small to mid-sized farms as viable enterprises, Ammerman says. The research will be conducted in North Carolina but will have national and international relevance.



Dr. Alice Ammerman

For more information on the Gillings Innovation Labs, see [www.sph.unc.edu/accelerate](http://www.sph.unc.edu/accelerate). ■

— BY TORREY WASSERMAN AND RAMONA DUBOSE