

# Meet the New Faculty



## Jennifer Ahern, Ph.D., M.P.H. Assistant Professor of Epidemiology

For **Jennifer Ahern**, science needs to mean something. Growing up in Baltimore during the 1970s and 1980s, she experienced a city that, she says, “was very segregated, had huge problems with poverty and drug use, and these lines between neighborhoods where you just cross the street and everything completely shifts.” When she discovered she could apply science to the social problems that had been part of her world since childhood, she knew she had found her mission.

Ahern wants to understand how aspects of people’s communities shape their health and health behaviors. “As you might expect, places with lower income or higher poverty tend to have more health problems,” she says. “But what does that mean?” Through the New York Social Environment Study—using a general population sample with 4,000 adults from New York City—she is looking beyond community income at a wide variety of other community-level social factors, such as norms about particular health behaviors, and how they are related to health and health behavior. “For instance,” she says, “does the community think it’s acceptable to binge drink or smoke, or use certain drugs and not other drugs?” She is also looking at aspects of the built environment, such as the availability of parks and number of liquor stores.

The research is challenging, due in part to methodological problems. “It’s hard to determine if you’re seeing a causal association between the community environment and an individual’s health,” says Ahern. For example, sometimes when people become ill, they are forced to move to a poorer area because of financial setbacks caused by their illness. “If you just look at them at a point in time, you see people in poor health living in worse places, but it may not be because the place did anything to them,” she says. “So this is a big controversy: How do we tease out social selection from social causation?”

Ahern is interested in applying different novel methods to try to make it possible to identify causal

associations. An example of such a method is agent-based modeling. “It uses a completely different approach from anything we do in epidemiology now,” she explains. “It’s based on modeling interrelations among components in a system. Rather than taking the data and trying to see what it explains, you use the information you have, try to define the relationships among the components in a system, simulate it, and see what happens. And then with the simulation, you can say, ‘Well, what if I perturbed this piece of it? How would the whole system change?’”

She also wants to present the results in a way that is useful for those who design interventions. “If we want to intervene on populations ultimately, and we want our work to inform that,” she says, “what can we change about what we’re doing?” Ahern believes the results should provide new tools and make it clearer how to intervene, what might happen, and how much of a difference to expect.

Ahern, who was recognized as an Outstanding Graduate Student Instructor at Berkeley in 2006, will be co-teaching a course on methods in social epidemiology with Assistant Professor of Biostatistics **Alan Hubbard** in Spring 2008. Having earned both her graduate degrees at the School of Public Health, she appreciates the fact that the School is part of the broader Berkeley campus, giving her unique access to experts across disciplines. “As a social epidemiologist, those are my resources,” she says. 🍷

—Michael S. Broder

## Education

Ph.D., Epidemiology, UC Berkeley School of Public Health, 2007

M.P.H., Epidemiology and Biostatistics, UC Berkeley School of Public Health, 2000

B.A., Human Biology, Brown University, 1997

## Selected Experience

Senior Research Analyst, Department of Epidemiology, University of Michigan School of Public Health, Sept. 2005–2007

Senior Research Analyst, Center for Urban Epidemiologic Studies, New York Academy of Medicine, 2001–2005

## Selected Honors

Dowdle Fellowship, 2006

Outstanding Graduate Student Instructor Award, UC Berkeley, 2006

Society for Epidemiologic Research Poster Session; First Prize, 2005

Society for Epidemiologic Research Poster Session; First Prize, 2002



**Rachel Morello-Frosch, Ph.D., M.P.H.**  
 Associate Professor, Community Health & Human Development

At one point in her career, **Rachel Morello-Frosch** was considering becoming a civil rights attorney. As a research and policy associate at a civil rights organization, she worked with undocumented and immigrant workers who were trying to assert their civil rights in the workplace.

Many of these workers, she noticed, were dealing with environmental issues in their homes and workplaces. This realization led her to pursue training in epidemiology, biostatistics, and environmental health science, and ultimately she chose a career in environmental health.

Morello-Frosch is passionate about environmental justice, and she credits environmental justice advocates, in large part, for advancements in the scientific thinking on environmental health and equality. "They've encouraged us to really think about issues of cumulative impact," she says, "and they've compelled regulators and scientists to better understand the realities of people exposed to multiple chemicals and the diversity of microenvironments where they live, work, and play. They have also encouraged scientists to better think about the psychosocial stressors in terms of the neighborhood factors as well as the individual-level factors that might make people more susceptible to toxins."


She has focused her research on environmental health disparities—examining race and class determinants of environmental health among diverse communities in the United States. Her current work concentrates on the relationship between segregation and environmental health inequalities; children's environmental health; and the intersection between economic restructuring and community environmental health. Morello-Frosch conducted the first study to examine the relationship between racial residential segregation and the estimated cancer risks associated with ambient air toxics exposures in the United States.

She has also published articles on the theoretical and methodological issues for elucidating links

between community and individual level stressors and environmental health disparities.

Her scientific research is grounded in community-based participatory research methods, in which the communities that are affected by research are equal participants. "I think there's a real role for community partnership to help advance and improve scientific thinking in terms of how we understand these issues," she says, "and ultimately, how we better address them in the regulatory policy arena."

Before coming to Berkeley, Morello-Frosch was an associate professor at Brown University in the Department of Community Health and the Center for Environmental Studies. At Berkeley, she holds a joint appointment with the School of Public Health and the Department of Environmental Science, Policy, and Management. In Fall 2008, she will be teaching a course on environmental health and development, which will be a breadth course with an interdisciplinary orientation.

The opportunity for interdisciplinary work is one of the reasons that Morello-Frosch—who earned both her graduate degrees from the School of Public Health—enjoys being at Berkeley. "For those of us who are interested in environmental questions, this is probably one of the more exciting places to be, because there are so many people in diverse areas and in disciplines who are addressing the same issues," she says. "When you're able to establish good linkages with other departmental units, it encourages you to rethink how you approach your work, and think about how you approach your research questions in innovative ways." 

—Michael S. Broder

## Education

Ph.D., Environmental Health Sciences, UC Berkeley School of Public Health, 1998

M.P.H., Epidemiology/Biostatistics, UC Berkeley School of Public Health, 1993

B.A., Development Studies (Phi Beta Kappa), UC Berkeley, 1988

## Selected Experience

Associate Professor, UC Berkeley School of Public Health and Department of Environmental Science, Policy and Management, 2008–present

Associate Professor, Brown University, Department of Community Health, School of Medicine & Center for Environmental Studies, 2007–2008

Robert and Nancy Carney Assistant Professor, Brown University Department of Community Health, School of Medicine & Center for Environmental Studies, 2004–2007; Assistant Professor, 2002–2004

Assistant Professor, San Francisco State University, College of Health and Human Services, Department of Health Education, 2000–2002

National Science Foundation Postdoctoral Research Fellow, University of California, Berkeley, Energy and Resources Group, 1999–2000

## Selected Honors

William G. McLoughlin Award for Teaching Excellence in the Social Sciences, Brown University, 2006

Professional Research and Development Award, San Francisco State University, 2001

US EPA's Science and Technology Achievement (STAR) Award for the Cumulative Exposure Project, 2001

National Science Foundation Postdoctoral Fellowship, 1999–2000

California Public Health Association Award for Outstanding Student Contribution to Community-based Research, 1999

University of California President's Postdoctoral Fellowship, 1998–1999

Switzer Environmental Leadership Award, The San Francisco Foundation, 1997