

PROMOTION RECOMMENDATION  
The University of Michigan  
School of Public Health  
Department of Environmental Health Sciences  
Department of Epidemiology

Marie S. O'Neill, assistant professor of environmental health sciences, Department of Environmental Health Sciences, and assistant professor of epidemiology, Department of Epidemiology, School of Public Health, is recommended for promotion to associate professor of environmental health sciences, with tenure, Department of Environmental Health Sciences, and associate professor of epidemiology, with tenure, Department of Epidemiology, School of Public Health.

Academic Degrees:

B.A. 1990 Brown University, Environ Studies; Hispanic Lit & Culture, Providence, RI  
M.S. 1997 Harvard University, Environ Health Sciences, Boston, MA  
Ph.D. 2000 University North Carolina at Chapel Hill, Epidemiology, Chapel Hill, NC

Professional Record:

2006-present Assistant Professor, Departments of Epidemiology and Environmental Health Sciences  
University of Michigan School of Public Health  
2004-2006 Robert Wood Johnson Health & Society Scholar, University of Michigan School of  
Public Health-Department of Epidemiology-Ann Arbor, MI  
2001-2004 Research Fellow in Environmental Epidemiology, Harvard School of Public Health-  
Exposure, Epidemiology and Risk Program-Boston, MA  
2001 Investigator in Environmental Health, Instituto Nacional de Salud Publica (National  
Institute for Public Health)-Cuernavaca, Mexico  
1999-2000 Fulbright Scholar, Centro Nacional de Salud Ambiental (National Center for  
Environmental Health)/Colegio de Mexico (College of Mexico)-Metepc and Mexico  
City, Mexico  
1997-1998 Health Scientist, U.S. Environmental Protection Agency- Human Studies Division,  
Chapel Hill, NC  
1992-1995 Environmental Protection Specialist, U.S. Environmental Protection Agency Indoor  
Environments Division-Washington, DC

Summary of Evaluation:

Teaching: Professor O'Neill has been an active participant in the development of the occupational and environmental epidemiology curriculum in both departments, in developing the core competencies and courses, and in recruiting students to this program. Due to her extensive funding, she buys out of two courses per year. Therefore her teaching load has been lighter than most others. She developed a course on environmental epidemiology (EHS/EPID 608) and has taught that each year. Her reviews have been strong, with evaluations always greater than 4.0. She also taught occupational and environmental disease (EHS 501) once, also receiving strong student review scores.

Professor O'Neill is currently advising three Ph.D. students, all of whom are expected to finish in the next two years. She also supervises the work of several graduate students from both EHS and EPID, and she mentors three undergraduates interested in environmental health. She also advised or currently advises or co-mentors five other doctoral students.

Research: The overall unifying theme of Professor O'Neill's research is the use of environmental epidemiology to study impacts on health of air pollution and climate change (the latter emphasizing temperature exposures) with a focus on vulnerable populations. We are now seeing the widespread,

direct effects of accelerated climate change on human health, an obvious example being heat waves. Professor O'Neill's interest is to apply novel methods and approaches to fill gaps in this area of inquiry, and to seek to design research that informs preventive solutions to these important and enduring problems.

Since becoming an assistant professor in EHS and EPID, Professor O'Neill has concentrated her research in three major areas. (1) She uses vital statistics data (mortality and morbidity) and routinely-collected environmental data from the U.S. and from less industrialized countries to understand how temperature and air pollution may influence population health, and who might be most vulnerable. Through this research, she has assessed the sensitivity of results to the choice of statistical models and exposure metrics, providing insights that can inform other research on these widely available types of data. (2) Professor O'Neill has been engaged in research focused on understanding cardiovascular mechanisms that might provide biological understanding of how air pollution affects health, using population samples with carefully measured clinical outcome data. Although large, population-based epidemiology studies have shown associations between pollution exposure and cardiovascular events and mortality, establishing the biologic plausibility of these associations is critical for causal inference and support of health-based air quality standards. (3) Professor O'Neill has been active in initiating multi-disciplinary collaborations that utilize methods from social epidemiology, geography, meteorology, and qualitative research to better design research and apply these results to inform public health interventions.

Professor O'Neill has five active grants. Her long-term vision is to pursue multi-disciplinary collaborations to build understanding of the plausibility of observed epidemiological associations between air pollution and adverse health outcomes and to better understand how heat exposure, in the context of climate change, can affect health, with a particular focus on vulnerable populations.

#### Recent and Significant Publications:

- O'Neill MS, Veves A, Zanobetti A., Sarnat JA, Gold DR, Economides PA, Horton E, Schwartz J. (2005) Diabetes enhances vulnerability to particulate air pollution-associated impairment in vascular reactivity and endothelial function. *Circulation*; 111: 2913-2920.
- O'Neill MS, Veves A, Zanobetti A, Sarnat JA, Gold DR, Economides PA, Horton E, Schwartz J. (2007) Air pollution and inflammation in type 2 diabetes: A mechanism for susceptibility. *Occupational and Environmental Medicine*, 64(6): 373-379.
- O'Neill MS, Diez-Roux AV, Auchincloss AH, Franklin, TG, Jacobs Jr., D, Astor BC, Dvorchak JT, Kaufman J. (2008) Airborne particulate matter exposure and urinary albumin excretion: The Multi Ethnic Study of Atherosclerosis. *Occupational and Environmental Medicine*, 65(8): 534-540.
- O'Neill, MS, Kinney, PL, Cohen, AJ. (2008) Environmental equity in air quality management: Local and international implications for air quality and climate change. *Journal of Toxicology and Environmental Health*, 71(9-10): 570-577.
- O'Neill MS, Bell ML, Ranjit N, Cifuentes LA, Loomis D, Gouveia N, Borja-Aburto VH. (2008) Air pollution and mortality in Latin America: The role of education in three cities. *Epidemiology*, 19(6): 810-9.
- O'Neill, MS, Ebi, KL. (2009) Temperature extremes and health: Impacts of climate variability and change in the United States. *Journal of Occupational and Environmental Medicine*, 51(1): 13-25.

Service: Professor O'Neill has reviewed manuscripts for 18 different scientific journals. She served as one of the Councilors of the International Society for Environmental Epidemiology (ISEE), the main professional body in her field, for which she has participated in the governing activities of the society, the awards selection committee, abstract review, and in securing financial support for the 2009 meeting in Dublin, Ireland. At Michigan, in addition to regular committee service on the Admissions Committees of both of her departments (Environmental Health Sciences and Epidemiology), Professor O'Neill has served on the EPID Doctoral Committee and the EHS Student and Alumni Affairs. She was a member of the

organizing committee for the health sector portion of the Coping with Climate Change National Summit held at the University of Michigan in May 2007.

External Reviewers:

Reviewer (A): "She has the rare combination of sharp intellect, a sincere commitment to public health and generous, gracious nature."

Reviewer (B): "The quality of her work has reached the international stage as is evidenced by her invited presentations ...I recommend her for promotion without reservation and regret that we could not lure her to [my institution]."

Reviewer (C): "Dr. O'Neill has clearly established herself as an independent investigator in environmental epidemiology, giving emphasis to air pollution and climate change."

Reviewer (D): "She has an outstanding track record of collaboration both national and international that testifies to her collegiality and commitment to interdisciplinary research."

Reviewer (E): "Dr. O'Neill has consistently produced timely summaries of the literature and moved the field forward in original research reports by integrating interdisciplinary perspectives on the health impact of air pollution and climate change. She is at the very highest level with respect to her ability to attain outside funding and the strong scientific impact of her research."

Reviewer (F): "Dr. O'Neill has been extremely focused in her research interests since her early graduate student days. She has become a leader in this field, having helped to convince the rest of the community that this is an important area of research."

Reviewer (G): "Her work is socially as well as medically relevant - I am most impressed by her work and sensitivity to issues related to vulnerable and disenfranchised populations."

Reviewer (H): "Dr. O'Neill has made methodological and substantive contributions to each area, while also being a international leader in understanding their interactions. I am confident that Dr. O'Neill would receive promotion at [my institution] and other comparable universities."

Reviewer (I): "Marie is one of those unique individuals who has succeeded in accomplishing new and innovative primary research, while at the same time taking on leadership roles in the broader community of environmental epidemiology."

Summary of Recommendation:

Professor O'Neill is an outstanding researcher and a dedicated teacher. Her productivity has provided research and training opportunities to numerous students. I enthusiastically recommend Marie S. O'Neill for promotion to associate professor of environmental health sciences, with tenure, Department of Environmental Health Sciences, and associate professor of epidemiology, with tenure, Department of Epidemiology, School of Public Health.



---

Kenneth E. Warner, Ph.D.  
Dean, School of Public Health

May 2010