

Where population health meets clean energy

Q&A with Jill Baumgartner, health researcher and associate professor at McGill University.

BY ALISON HOWIE

Jill Baumgartner is a health researcher and an associate professor at the Institute for Health and Social Policy and the Department of Epidemiology, Biostatistics, and Environmental Health at McGill University in Montreal, Quebec. In her early career, Baumgartner worked for non-governmental organizations focused on global health. Realizing that advancing her career would be challenging with a B.Sc., Baumgartner decided to pursue an M.Sc. in population and international health at the Harvard University School of Public Health. The thesis component of her M.Sc. stimulated her passion for research, leading her to complete a joint PhD in population health science, and environment and resources at the University of Wisconsin-Madison. Her research there focused on the health impacts, specifically the cardiovascular disease risks, associated with exposure to air pollution in homes that burn biomass fuel for cooking. Upon completing her PhD, Baumgartner moved to McGill University where she has worked for six years. Her work today is an extension of her PhD research on the health impacts of air pollution; she is interested in evaluating the health impacts of clean energy policies and programs. She also leads work to evaluate the environmental contributors to urban health inequalities in low- and middle-income countries.



Jill Baumgartner

What does your average day look like?

One of the huge advantages of being in academia is that your day varies quite a bit, and that's something I really like about the job. But it can also be intimidating, especially early in one's career. A colleague once remarked how there are very few jobs where you can be at risk for coming into work without a clear plan for the day, so it's important to provide structure and be organized. My average day usually involves meeting with students, grant writing or brainstorming, participating in research meetings, and reviewing science done by my group or other researchers. I also teach courses in environmental epidemiology and exposure science. Another important part of most researchers' jobs is sitting on advisory committees. For example, I've advised non-governmental organizations on the least polluting

household stoves and advised funding agencies on research directions to consider supporting.

What aspects of your research are unique compared to other research being done in environmental health?

Most of my work is on the health impacts of environmental risks in low- and middle-income countries. My team does a lot of primary data collection because, unfortunately, the environmental data that we need are often not available through secondary sources in low-income countries. For example, most countries in sub-Saharan Africa do not have a reference-quality air pollution monitor. One unique aspect of my research group is that we conduct large scale secondary data analyses and collate data sets that we've gathered from all over the world, but then we

also work on primary data collection projects where we travel to people's homes to collect measurements. I'm particularly interested in understanding the health and air pollution impacts of real-world environmental

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policies. For example, in Beijing, the government is banning coal and putting electric or gas-powered heat pumps into millions of homes. We were interested in evaluating the effect of this program on air pollution and health. What we've found is that, for the most part, villages want to make this transition from coal to electric heat pumps, but some of the poorest households may have trouble paying for the additional electricity costs.

Climate change has been a hot topic in the world recently. How is it affecting our health?

We do have increasingly strong evidence showing the impacts of climate change on health, both directly and indirectly. I am not a climate change researcher myself, but I do work closely with climate modelers who are looking at how air pollution from different sources, including household solid fuel burning and agricultural burning in rural areas, contribute to climate change. My role is to provide some of the input data for models generated by atmospheric scientists that look at the potential climate impacts of air pollution and the potential climate benefits associated with reducing these sources of pollution.

If you could offer a piece of advice to an emerging environmental health researcher, what would it be?

My advice to an emerging researcher in environmental health is the same advice I'd give to any researcher: always start with a really good question. Once you have a good question, then you can start thinking about the tools you want

to use to answer that question, including a creative study design, new data, and fancy statistical methods.

How do you envision the future of research as it pertains to environmental health?

INFECTIOUS DISEASE

From working with animals to humans

Q&A with Nicholas Ogden, an expert on vector-borne diseases and the Director of the Public Health Risk Sciences Division.

BY SUPRIYA HOTA

Dr. Nicholas Ogden is a senior research scientist and the Director of the Public Health Risk Sciences Division for the Public Health Agency of Canada (PHAC). His work focuses on assessing the risk and impact of climate change on vector-borne diseases – including Lyme disease, West Nile, and other zoonoses – and develops tools for community adaptation to these disease

Environmental health is a broad field and there are a lot of interesting directions that intersect with toxicology, exposure science, epidemiology, and policy. The intersection of environmental and urban health is an important area. In many cities, urban residents have, on average, better health than their rural counterparts, but the urban poor often have much worse health. In developing countries, the health of the urban poor is often impacted by environmental risks, including lack of access to safe water, poor sanitation, low-quality housing, polluting energy, and crowding. Understanding what health looks like for the urban poor and how environmental factors contribute to health inequalities is an important research area, particularly since cities are growing and inequalities are also growing.

risks. His team undertakes ecological and epidemiological studies, conducts systematic reviews and meta-analyses, and uses genome sequencing to understand pathogens and their ecology. Building on this knowledge, they then try to understand and predict when and where the disease risks might appear due to climate change.

Ogden received his veterinary degree from the University of Liver-