(Above) Reynaldo Balmes reflects on the experience of working toward consensus with fellow panelists, including, from left to right, Garry Faradjian, Zara Zsido, Martha Manning, and Edward Shaddock.
Vox Populi and the Promise of Biomonitoring

Consensus conference asks community: *What would you say?*

From the earliest days of the modern environmental health movement, scientists and laypeople have been concerned about human exposure to chemicals in the environment. The well-documented health risks of lead, asbestos, benzene, and carbon monoxide, for example, have generated a wide range of public policy to ensure that our exposure to these substances is limited and monitored, thereby protecting health and lives.

Yet there are thousands of chemicals in the environment and modern science’s ability to detect them in the human body is steadily advancing and becoming cheaper, easier, and more precise. Today, we can measure some chemicals in dizzyingly small units of parts-per-trillion and even parts-per-quadrillion. Often, though, our ability to detect chemicals outstrips our understanding of their overall medical significance. Scientists can tell you how much polychlorinated biphenyls (PCBs) is present in your fat tissue, but they can’t say for sure what health problems—if any—will result.

So, there’s the rub. Biomonitoring—the measurement of chemicals in the body—promises to provide increasingly precise information about the pollution we carry around in our bodies; our so-called body burden. Without a clear understanding of what body burden means to our health, should we bother to routinely monitor the population? If we do, what should we do with the results? Who should have access to the information? Who should pay for the testing? What ethical concerns does testing present? How should results be communicated to participants and the public? Moreover, who should have the final say in all this?

These are among the many questions considered by a 14-member panel of Boston-area citizens who last fall participated in the first-ever Boston Consensus Conference on Biomonitoring—cosponsored by the Toxic Action Center and Boston University School of Public Health’s Department of Environmental Health—in order to educate and gather informed public opinion on this complicated scientific topic. Because of the technical nature of biomonitoring, the public has had very little opportunity thus far to be involved in the discussion about how and why it should be done, despite profound public policy implications.

Participants of the Boston conference said they were intellectually stretched and emotionally engaged by working toward agreement with one another on the issues and saw the process as a best-practice model for improving decision-making in a democracy.

“There are a lot of problems in this world that do not have a clear answer,” says Judy Baker, a human resources consultant from Dorchester and a member of the lay panel who volunteered because she was interested in seeing how the consensus process would work. “Reaching a consensus was an exercise in dialogue, which we learned was different from having a discussion. Having gone through the effort to come to a consensus with a group of people I didn’t know, I highly recommend it.”
Conference panelists were widely recruited in newspaper ads, flyers, and on the Internet bulletin board Craig’s List with the simple question, “Measuring Chemicals in People—What Would You Say?” They were selected to create a demographically diverse group from Boston neighborhoods and surrounding communities and paid $1,000 to participate in the complete process. Those who took part included a school teacher, a truck driver, an actor, a great-grandmother, a lawyer, and a youth detention center worker.

Novices to begin, each member of the panel spent six days over three weekends reading and learning about the complex issues involved in biomonitoring. With the help of 10 national experts to answer their questions and facilitators to guide their work, the group produced a 10-page consensus statement with recommendations they hope will guide policy making on the subject. The report has already been sent to 200 public health agencies, researchers, advocacy organizations, industry trade groups, and legislative policy makers in New England, across the country, and around the world. It is also posted on the conference Web site at www.biomonitoring06.org.

Released on December 11, the consensus statement identifies five priority areas of concern. It calls for educating the general public on biomonitoring issues, establishing responsible biomonitoring surveillance programs, increased attention on ensuring that an individual’s biomonitoring results will remain private, and better use of biomonitoring data to influence corporate and government behavior. And while the panel quickly recognized the risk that both individuals and neighborhoods could be stigmatized by the results of biomonitoring, they concluded that “knowing more about chemical exposure … will allow better public health decisions to be made.” Furthermore, they hoped that biomonitoring would stimulate and encourage the growth of more “green companies,” which would create new markets and jobs that will promote a healthier environment.

Holding a consensus conference on biomonitoring was the brainchild of two BUSPH doctoral students, Madeleine Kangsen Scammell and Jessica Nelson, MPH, who are working under the guidance of Environmental Health Professor David Ozonoff, MD, MPH, on the final year of a five-year, $900,000 public education grant from the National Institute of Environmental Health.
Sciences. They were assisted by two other Environmental Health students, Traci Bethea, MPA, and Raphael Adamek.

Tom Webster, DSc, associate professor in the Department of Environmental Health, was also on the BU team, which received guidance and input from a 7-person steering committee of national experts, including George Annas, chair of BUSPH’s Department of Health Law, Bioethics, and Human Rights. The steering committee met several times over the course of the project to review educational materials given to the lay panel and to ensure that the information was balanced and not biased toward a particular perspective on biomonitoring.

“There has been a lot of recent debate on this issue and many different groups have weighed in—academics, policymakers, environmental advocates, and industry representatives. But the voice of the public has not been heard and we felt it was important to add this perspective to the discussion,” Nelson says.

“Our intention was to educate the lay panel on the science and learn from their responses and opinions. In this sense, the process was mutually educational and incredibly rewarding. We were very inspired by their hard work and ability to grapple with many questions for which there are no right or wrong answers,” notes Scammell.

The consensus conference model was originally developed by the Danish government to stimulate broad and informed social debate on complex issues and to ensure public involvement, especially on science and technology policies. The entire process involves assembling a lay panel that reflects the demographics of the population, introducing the subject material through readings and a series of educational seminars conducted by experts in the field, and allowing members of the panel to come to an agreement or consensus based on what they have learned.

Jean Burrelle, a new great-grandmother, said she signed up to participate because she “would do anything” to leave the planet cleaner for her great-granddaughter, Charliz. Indeed, she said that she left the exercise with a new commitment to use fewer household chemicals and to be more conscious of chemical exposure in her own home.

Among the experts who helped panelists sort out their questions were Patricia Roche, PhD, professor of health law, bioethics, and human rights, BUSPH; Roy Petre, who has been involved with the lead surveillance program conducted by the Massachusetts Department of Public Health since its inception; Carol Henry, PhD, DABT, a representative of the American Chemistry Council; and Ted Schettler, MD, MPH, with the advocacy organization the Science and Environmental Health Network. Henry and Schettler were also on the project’s steering committee.

Recent landmark efforts on biomonitoring have put the topic in the news, making the BUSPH conference timely, says Ozonoff. In July, the National Academies of Science’s (NAS) Committee on Human Biomonitoring for Environmental Toxicants issued a report on current practices and recommendations for the future interpretation and uses of human biomonitoring data; California also recently passed legislation that established America’s first statewide biomonitoring program.

“The Boston consensus conference was intended to serve as a model for educating and for seeking public opinion on this very complicated topic. We hope it will lead to other efforts in this area,” says Ozonoff. “The process is especially useful in considering how to move forward with technical questions, particularly in instances where there are conflicting consequences to exposure.”

Thomas Burke, professor and codirector of the Risk Sciences and Public Policy Institute at the Johns Hopkins Bloomberg School of Public Health and a member of the steering committee, told the panel he was amazed at how much science the panel had grasped in just two and a half months. “I chaired a National Academy panel that didn’t do as much work in two years as you did in two months,” he said.

Involving the public speaks directly to the mission of the conference’s cosponsor, Toxic Action Center, which was established in 1987 to train and empower individuals and communities throughout New England in the skills and strategies needed to clean up pollution. The agency’s executive director, Alyssa Schuren, affirms that the center’s constituents are the people who participated on the lay panel. “The point is to help ordinary citizens get their voices heard,” she says. “The consensus model is a great example of democracy at work: it brings complicated issues to the level of lay people without watering down the objective. The Massachusetts Legislature should adopt this method precisely because it is effective for inspiring grassroots involvement.”

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