



Testimony
Before the Subcommittee on Domestic Policy
Committee on Oversight and Government
Reform
United States House of Representatives

**The Research Focus of the National
Institute of Environmental Health Sciences**

Statement of
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Good afternoon, I am Dr. Samuel Wilson, currently the Acting Director of the National Institute of Environmental Health Sciences (NIEHS) and of the National Toxicology Program (NTP). NIEHS and NTP are part of the National Institutes of Health (NIH), an agency of the Department of Health and Human Services (HHS). I have long served the interests of environmental health sciences first as a laboratory researcher, then as Director of a Center in the extramural community, and now as the Deputy Director of NIEHS and the National Toxicology Program since 1996.

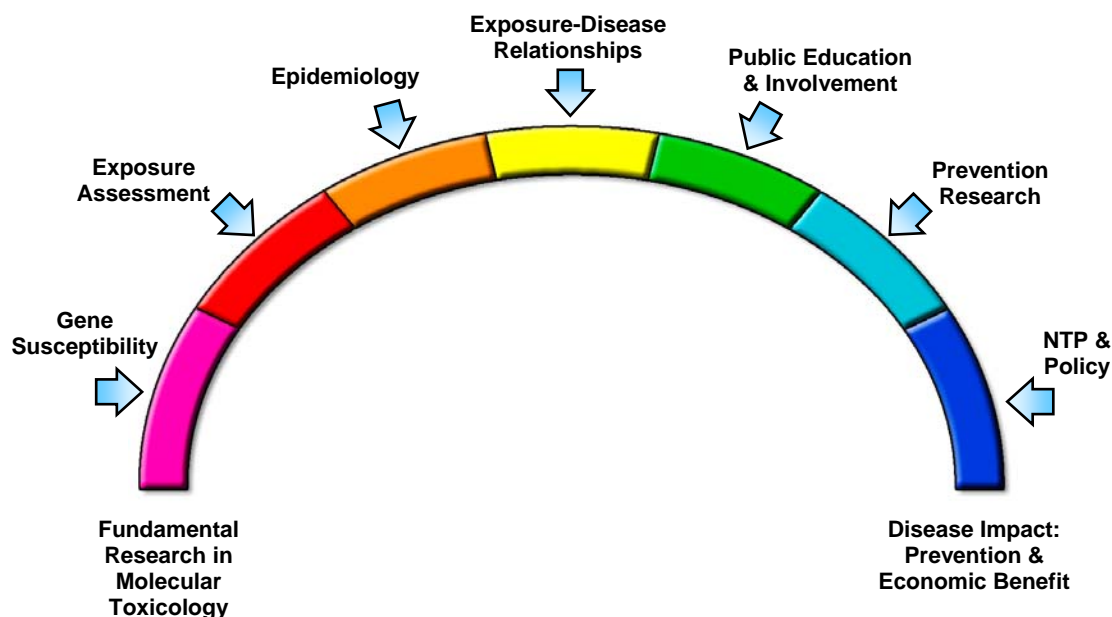
The Director of NIH, Dr. Elias Zerhouni, asked me to represent NIH and respond to your concerns because Congress has provided direct appropriations to each Institute and Center comprising NIH. As Acting Director, I have the primary responsibility for determining how NIEHS makes decisions on the use of its appropriated funds and conducts its strategic planning, working in conjunction with its public advisory council and with the rest of the NIH administration. I have the responsibility for determining how NIEHS's resources are employed both within the Institute and in collaboration with the other NIH Institutes and Centers, as well as other Federal agencies.

Mr. Chairman, you have expressed concerns that NIEHS is shifting research away from prevention and toward clinical approaches to research. I want to state categorically that prevention is a priority of mine and, indeed, all of NIH. Prevention is a cornerstone of NIH's research strategy. All NIH Institutes and Centers support medical research that helps to prevent disease rather than solely how to treat disease once it begins.

The mission of NIEHS is to support research to define the role of environmental agents in the initiation and progression of human disease. The goal is to use knowledge from this research to reduce adverse exposures and thus greatly reduce preventable diseases and conditions. Our understanding of how the environment operates at the molecular level can also provide insights on intervention or early markers of disease. Thus, the research at NIEHS is targeted to the “front-end” of disease, disease etiology, and prevention.

The final impact of our research efforts – reduction in human disease and suffering – relies on the efforts of many entities, including scientists from a variety of disciplines, community groups, policy makers within Congress and the Administration, and regulatory agencies throughout the world. The chart below illustrates this fact, and it shows the progression of NIEHS research, from insights developed through Fundamental Research in Molecular Toxicology to Disease Impact: Prevention & Economic Benefit. All components of the continuum presented in this chart are necessary to the efficient transfer of knowledge at each stage of the spectrum. Our success is highly dependent on public education and involvement and on public policy formulations.

National Institute of Environmental Health Sciences



Every disease has an environmental component, thus NIEHS's responsibilities encompass all human diseases, rather than following the more common model of focus on a specific disease or organ system. This broad continuum presents challenges, since the public health message of NIEHS must be all-encompassing. Complicating matters further is that environmental problems are often local or regional, have complex causal patterns, and often involve involuntary exposures to the local community. Such problems engender passionate responses both from local communities and the private sector. This multiplicity of stakeholders, as well as the competing economic risks and benefits of our findings, present NIEHS with challenging pressures. NIEHS has addressed these competing demands by ensuring that all stakeholders are included in critical decisions, by providing quality peer review and opportunity for public comment, and by developing

innovative approaches by which our research can be relevant to local conditions and needs. A particular source of pride for me is the novel ways in which NIEHS has sought to include the insights of local communities in the conduct of research and in the dissemination of research findings. This early inclusion of groups outside of the academic medical research community has been a particular strength of NIEHS.

When I first came to NIEHS in 1996, we began to move the Institute's research in a more disease-oriented direction, as well as investigating new ways in which local communities could more directly benefit from and be involved in our research. At that time, we had included the activity of Community Outreach and Education Programs (COEP) in each NIEHS Center of Excellence. Working with the Environmental Protection Agency (EPA), I helped establish the first Children's Environmental Health Disease and Prevention Center programs. I also worked to create the Breast Cancer and Environmental Research Centers and the Collaborative Centers for Parkinson's Disease Environmental Research; both of these programs are designed to accelerate the discovery of environmental components in disease and to include community groups.

I was personally involved in strengthening the COEP program by identifying and communicating the "best practices" of individual Centers, insuring that Centers received extra support for their community outreach efforts, and instituting a system where these programs were evaluated and expected to include community involvement and education. Seeing the success of these local endeavors has convinced me that community-based approaches have an important role to play in the environmental health research

enterprise. I was a strong advocate for developing the NIEHS Community-Based Participatory Research in Environmental Health program, and I traveled and spoke extensively to develop the necessary consensus and support for this concept.

As you can imagine, managing an enterprise as diverse and as important as NIEHS requires balancing multiple needs and demands. Thus, we are constantly seeking advice from the research community and from a broad spectrum of community groups, and we are open to new approaches, not only in the laboratory, but also in managing the direction of environmental health research. Because science and technology have changed markedly in the years I have been at NIEHS, we want to be cognizant of new opportunities in science and incorporate them in our research enterprise. We are in particular looking at how emerging technologies can be used to enhance public health prevention strategies. For example, in our Exposure Biology Program, we are developing small exposure monitors that people can wear and that generate a personal profile of their environmental exposures.

As we develop new programs, evaluation must be an on-going process at NIEHS. We have recently evaluated our Children's Environmental Health and Disease Prevention Research Centers Program and concluded that it merits continued support. We also intend to support our Community-Based Research program. A similar program, the Environmental Justice Program, is still undergoing review, although it is my intent that NIEHS will continue to support environmental justice research.

NIEHS has a key role to play in improving the health of our Nation's citizens. Our research has particular importance because it typically addresses those areas where we can prevent disease or intervene very early in its development. Thus, we have the ability to provide the nation with strategies that not only improve health, but would greatly reduce health costs. We cannot, however, do it alone. We must be productively linked to our constituents and the regulatory community in order to fulfill the promise of our mission. When all of us work in partnership, the Nation benefits.

I use the example of environmental lead to illustrate the potential power of this strategy. Research studies supported by NIEHS and NIH's National Institute of Child Health and Human Development showed that even low levels of lead cause decreases in children's intelligence. Evidence such as this, combined with other epidemiological studies, including those conducted at NIH and HHS's Centers for Disease Control and Prevention, has helped to mobilize parents, environmental advocates, environmental health researchers, the EPA, and Congress to remove lead from gasoline, paints, and other sources. The result has been a sharp reduction in blood lead levels throughout the country. The benefit of lead reduction does not stop at childhood; like many environmental agents, lead can affect multiple systems over the lifespan. Recent NIEHS-supported research shows that in adults, higher levels of lead in bones (an indication of life-long lead exposure) are associated with increased risks of hypertension, cataracts, and kidney problems. Clearly, our partnerships to study the effect of lead in the environment represent a major public health success. Such is the power of environmental health research.

The full benefit, however, can only be realized when environmental health researchers are part of a research program that informs community groups and other federal and state agencies. We all have a stake in the NIEHS, and we all serve as partners in the environmental health research enterprise. It is this relevance of the NIEHS to our everyday lives that motivates me as an administrator and why I feel privileged to be here today.

Thank you for this opportunity to appear before you today to provide this statement. I shall be happy to answer any questions you have.