

Scientific Symposium on Exposures to
Environmental Contaminants Affecting Children

“Community-based Research and Outreach in Environmental Health Research”
Plenary Session 2

LCRA - McKinney Roughs
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Federal Perspective Panel
Samuel Wilson, M.D.

PROCEEDINGS

DR. GOLDMAN: We now have with us Dr. Wilson. It is my pleasure to introduce him. Samuel Wilson is Deputy Director of the National Institute of Environmental Health Sciences at the National Institutes of Health.

Sam formerly served as director of the Sealy Center for Molecular Science at the University of Texas Medical Branch in Galveston.

He has an M.D. from Harvard Medical School, and ought to have a number of honorary Ph.D's, as well, given the kind of research that he has done. He has authored and co-authored numerous articles in areas of environmental toxicology and particularly cellular biology and effects of the environment on DNA. He also had a very distinguished career at the National Cancer Institute in the past. So welcome, Sam.

DR. WILSON: Well, thank you very much, Lynn. Let me say at the very outset how excited I am to see the emergence of the Children's Environmental Health Institute and certainly to congratulate everyone involved. We are looking forward to

working with the Institute in the future, for many years to come, and toward improving environmental health and especially improving children's health.

In these brief remarks I will make this morning, I want to first of all outline who we are at the National Institute of Environmental Health Sciences.

The acronym is “NIEHS.” In the federal government we always, first and foremost, seek an acronym that works. Yet, I do not know what they were thinking about when they picked out the acronym NIEHS, because it seems that nobody can get it right. People think the S, instead of sciences, means services, and they cannot figure out what the H stands for and so on. But nevertheless, NIEHS is one of the 18 institutes at the National Institutes of Health. Our campus, laboratories and home offices are located in the Research Triangle Park area of North Carolina.

We are not the only NIH institute centered substantially outside of Bethesda, yet we probably have more real estate and more nice, wonderful buildings, outside of Bethesda, than any of the other institutes.

So, we do our business from this campus ([Slide 1](#)) in Research Triangle Park, NC. The business is focusing on the health burden in this country, and internationally, secondary to environmental exposures. Thus, the very focus and topic of The Children’s Environmental Health Institute is the business of our institute at the NIH. We do this work by a variety of mechanisms, including the “standard” NIH RO-1 grants and program project grants, the center core grants, the training grants and so on. But also, we are emphasizing another theme that I want to talk about here this morning. This theme is to reach out to local communities and involve local communities as much as possible in the actual research and practice of environmental health sciences. This is a very significant new way of thinking about

how to conduct biomedical research. I will come back to this point in a moment because it is the single theme I want to focus on here this morning. This theme, of course, has to do with a method of approach on how we conduct research and on how we leverage and enhance the impact of the research we do.

But, first “what about the research topics NIEHS is working on in environmental health?” The topics are mainly the same ones that we work on in the general arena of children's health. The topic of cancer, of course, is a long-standing research area at our Institute and at the National Cancer Institute and in other federal agencies. Cancer in children is a major health burden and one that we know has a large environmental contribution. The opportunity for improving public health in the area of childhood cancer is enormous. Another disease category, or area, we work in is respiratory diseases. You have already heard here that childhood respiratory diseases are on the rise. This is a major public health burden and an area where NIEHS has a substantial research portfolio. In the areas of metabolic diseases, such as endocrine dysfunction, diabetes, and other diseases of metabolism, we are actively involved and have a large research portfolio. In the areas of various types of environmental exposures, the initiatives on exposure assessment and understanding the effects of chemicals in the environment on the child, on the human organism during different stages of development, are major research priorities for our Institute. And, there are other areas you have already heard about here at this meeting or have seen on the NIEHS web pages or in the various communications we have put out. Certainly, birth defects and reproductive disorders is a major area of interest for us and an area where there are substantial well-documented environmental linkage.

Let me spend a few minutes now talking about this point or theme of “method of approach for conducting environmental health sciences research.” The idea we have at NIEHS of trying to reach out to local communities and involve local communities more and more. This started, I think, about ten years ago when Ken Olden came to the Institute as the Director. And, the idea has taken hold and become reinforced, especially recently in our award of a number of RO-1 (about 20) grants for research involving communities, where community members actually participate in the research projects.

Now, this RO-1 grants mechanism was developed after the success of a program that I want to share with you. The background for this discussion is illustrated on the next slide ([Slide 2](#)). The slide shows a map of the Centers of Excellence the NIEHS supports nationwide. Roughly, we support 55 Centers of Excellence. You can see the names of the different types of Center grant programs: there are Children's Environmental Health Centers; the Superfund Basic Research Program Centers; and the Center Core Grants, which are similar to the Center grants funded by many other institutes at NIH; and the ARCH program, which is a program to enhance research in minority institutions. The point I wish to make from this slide is that in all 55 of these centers across the country there is a community outreach and education component, as a required feature in each center. These community outreach components do just what the name indicates. They reach out to the community, educate the community and involve the community in environmental health sciences research, education, and training. So, in this way, we have been able to basically pilot-test the notion of working with the local communities and asking ourselves the question, “Can we achieve leveraging this way; can we achieve

enhanced impact by working with local communities?” The fact is, that this approach has worked remarkably well. We think there is a huge leveraging opportunity through this type of outreach effort. The cost of the community outreach effort in each center is roughly \$100,000 per year direct costs, perhaps as much as \$150,000 a year in some of the Centers. So, this success is not without significant cost. But nevertheless, the opportunity to expand and incorporate communities, local physicians and local health entities, in environmental health science has been working well through this Centers of Excellence grant mechanism.

Now, based on this success, we decided, along with the U.S. EPA a few years ago, to establish a new centers program. This is the Children's Environmental Health Centers Program, which was established about three years ago now. There are currently eight centers across the country. I will not take the time to tell you where they are located on this map, but they are on the East Coast and West Coast, and a couple of centers in the middle of the country. Part of the research design for these centers is to have a community-based research component, in each of the centers. Thus, each center has a total of three research components; one of the three components is a community-based research component. The idea was for university investigators to reach out to the communities and establish research partnerships with community groups, so that community groups could actually participate in the fundamental research ongoing in the academic center. This was the first NIH program, to my knowledge, using a formal mechanism for partnership with such community groups, for their participation in the research. So far, in the first three years of this program, we believe the approach is working quite well, especially in some of the centers, such that community groups are actually formulating questions, setting

priorities, and participating in the publication of the research results. This is quite a remarkable idea, to be able to reach out and leverage with large numbers of people in local communities to get more biomedical research accomplished.

Now, there is another feature about this map I will comment on. Just recently, in the past few months, and building on the success of the Children's Health Centers, we have awarded a number of new RO1 research grants where the principal investigators across the country are partnering with community groups to do environmental health science research.

So this strategy, if you will, of partnering with local groups -- and when I say groups, I mean a heterogeneous array of citizens' groups, local health professionals, health agencies, organizations like this Institute -- to conduct biomedical research in the environmental health area is effective.

In the case, of course, of the Children's Health Centers, they are working on childhood diseases such as asthma, developmental disorders, and others. We hope in the next year to expand the Children's Environmental Health Centers Program, along with EPA co-funding. Our hope is to be able to expand to raise the number of centers from eight to ten, or perhaps 12, by 2002. The types of disorders we hope to focus on in the expansion are the developmental and behavioral disorders. Many of these at the present time are considered to be potentially secondary to metal exposures and types of chemical exposures. The opportunity for enhancing public health is enormous in this area.

I will close by saying that the practice of government-academia partnerships reaching out and involving communities, is in an early stage across the country in the field of medical research. This practice will expand so that in the future,

perhaps five, ten years from now, the cadre of environmental health researchers will be much larger, by virtue of this new strategy we are taking at the NIH. It is a strategy to address the fundamental problems of children's environmental health, and environmental health for all ages.

Thank you.