

Report 48: Invent new ways to incorporate NIEHS research expertise effectively into disease specific research.

Convener: Cheryl Marks

Brief History: All too often NIH disease-focused ICs fail to appreciate that the environment has a key role in disease etiology, and it is necessary to consider the extent of contributions of environmental factors to poly-morbidities of complex diseases. The expertise of NIEHS-funded investigators is often under-valued by disease-specific research teams, and the environmental perspective is urgently needed to balance the gene-centric view of medicine. Researchers who try to find support for the study of the role of one or a few environmental factors in several diseases are often frustrated by the difficulty of “selling” their project to more than one categorical IC; in other words, NIH does not facilitate the funding of research that crosses the boundaries of categorical diseases.

Discussion Highlights:

- Need to ensure that the leadership of all ICs appreciate the importance of the environment as a co-factor in disease.
- Even if the tools for interrogating the effects of the environment are imperfect, they need to be incorporated into a variety of population studies to ensure their validation for a broad collection of diseases.
- The extent of recent developments in sensors and biomarkers and other environmental measures are under-appreciated and under-utilized by investigators who study human populations for underlying causes of specific diseases.
- The potential that exposing environmental factors as components of disease etiologies has for prevention is under-realized.
- NIH does not utilize funding mechanisms that provide support for research in the collaborative ways that reflect current research practice, or support the long-term studies required to explore the role of the environment in disease manifestations that may take decades.

Recommendations:

- Implement inter-IC and inter-agency panels of outside experts to highlight the opportunities for integrating environmental research expertise and tools into specific disease research.
- Ensure that environmental issues that are pertinent to specific regions and of concern to the US population are rapidly addressed with research.
- Develop mechanisms for partnering among NIEHS-funded researchers and specific disease research communities to leverage their cross-disciplinary expertise.

- Invent facile support mechanisms that enable researchers from several disease research communities to aggregate their expertise and interests in effective collaborations to address the potential of environmental factors as causative for more than one disease.
- Address the limitations of current funding mechanisms that do not permit long-term assessment of environmental factors in disease etiology; incorporate realistic milestones for assessing progress for continued support of such long-term studies.
- Explore effective outreach mechanisms to inform all disease research communities of the environmental research methods, survey tools, and technologies that are available to incorporate into their research.
- Ensure that NIEHS augments its connections to other agencies and entities to incorporate technologies that may be useful to monitor environmental factors; i.e., leverage investments in nano-technologies, sensor technologies, and other novel techniques.
- Partner with disease-centric clinical programs to deploy and validate environmental research methods and survey tools.

Discussion Participants: Janice Allen, Gary Bird, Gwen Collman, Barry Dellinger, Thomas Gasiewicz, Michael Gould, Gina Goulding, James Kiley, Cheryl Marks, Patrick Mastin, Kimberly McAllister, Dale Sandler, Palmer Taylor.