

and community-based advocacy. She is spearheading the development and uptake of PRHE's Navigation Guide, a systematic and transparent methodology to translate environmental health sciences into preventative action in clinical and policy arenas.

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## Evolution in Environmental Health: Incorporating the Infectious Disease Paradigm

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In this issue of *Environmental Health Perspectives*, Feingold et al. (2010) propose a unique step forward for toxicology: incorporating infectious disease agents and theory into the toxicological paradigm.

The fields of infectious disease and toxicology intersect on many different levels. First, they can act concurrently, as when global bands of various tropical diseases widen due to increased atmospheric temperatures. For example, in *A Human Health Perspective on Climate Change*, the Interagency Working Group on Climate Change and Health (2010) identified health effects from climate change, as well as the health benefits from mitigating climate change. These various health effects range from respiratory and cardiovascular disease, to developmental and neurological disorders, to food- and waterborne illness, and vectorborne and zoonotic disease. It is increasingly clear that climate change—a marquee issue in the field of environmental health—and infectious disease are linked.

Second, the two fields can also act antagonistically: For example, the newly renewed appeals for global use of DDT (dichlorodiphenyltrichloroethane) to combat malaria will pit the well-known hazardous effects of DDT against the scourge of malaria. In many countries DDT has been banned for agricultural use; it is considered a Class II or “moderately hazardous” pesticide by the World Health Organization (International Programme on Chemical Safety 2005), and its use is strictly limited by the 2001 Stockholm Convention. However, use of DDT is still permitted for vector control. This balance of risks and benefits is a conundrum for scientists and policy makers, but it reveals the serious issues raised when infectious disease and environmental health interests clash.

Third, these two disciplines can act synergistically, as in the interactions between hepatitis B and aflatoxin in hepatic cancer. Both hepatitis B and aflatoxin are independent factors in liver cancer. However, when combined, they act powerfully to raise the risk of



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hepatic cancer up to 60 times that of unexposed individuals (Groopman et al. 2005). This National Institute

of Environmental Health Sciences (NIEHS)-funded research is a primary example of the interaction between environmental health and infectious disease and can serve as a model for future research efforts.

Suppression of the immune response by polychlorinated biphenyls (PCBs) was first shown in mice and nonhuman primates. Recently, in another example of concurrent interaction, NIEHS-funded studies led by Philippe Grandjean have shown that perinatal and developmental exposure to PCBs adversely impact immune responses to childhood vaccinations (Heilmann et al. 2006, 2010).

We have an opportunity at the NIEHS to embrace this new paradigm. As we have shown with our investment in research into the aflatoxin–hepatitis B and PCB–vaccine interactions, the NIEHS has a track record that could promote a wider interest in this field of inquiry.

Ideas like these are supported not only at the institute level but also throughout the National Institutes of Health (NIH). Recently, NIH director Francis Collins (2010b) wrote, “NIH can play a major role in ramping up the discovery of novel targets in both pathogen and host and work to facilitate advances in prevention . . .” Collins (2010a) also wrote, “the best outcomes are generally when you don’t have walls between parts of the organization that prevent people from learning from each other.”

A recent presentation at the NIEHS outlined a vision for the institute that included the infectious disease and environmental health intersection within the context of the rapid evolution in the field of environmental health, specifically in epigenetics. As we

recognize that our old assumptions about toxicants and how they affect our bodies are being changed by modern science (e.g., exposure effects are not only dose dependent but are also affected by both time and context), the field of environmental health is moving fast and the NIEHS needs to be at the front with innovative, bold ideas so we can participate and lead with the best science possible. The idea of incorporating infectious disease into the toxicological paradigm is exactly the kind of pioneering concept that can take environmental health to the next level.

The NIEHS Office of the Director will be working with division leaders to develop an initiative on infectious disease and environmental health—to incorporate infectious disease into the toxicological paradigm. We look forward to the possibilities to strengthen the field of environmental health science.

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## Note from the Editor:

### Revised Instructions to Authors

Authors planning to submit manuscripts to *Environmental Health Perspectives (EHP)* should note that we have revised our Instructions to Authors. The revised Instructions to Authors are included at back of this issue and are available on the journal's website (<http://www.ehponline.org/>). Four points bear special attention.

First, over the last several months, it has become clear that the journal needed to provide more guidance concerning reviews. Please note that the journal now has three categories of review papers:

- **Substantive Reviews** provide an overview, integration of information, and critical analysis of a particular field, research, or theme related to environmental health sciences. The strengths and weaknesses of individual studies and weight of evidence should be discussed. In addition, we encourage authors to identify research gaps and make recommendations for future research.
- **Quantitative Reviews and Meta-Analyses** present and contrast—and when appropriate, combine—data across studies to address a specific question related to environmental health sciences. Authors should provide inclusion criteria and strategies used to search the literature, and discuss strengths and weaknesses of studies as well as potential causes of discordant findings. As in the case of Substantive Reviews, we encourage identification of research gaps and recommendations.
- **Emerging Issue Reviews** identify emerging ideas, concepts, or trends in the area of environmental health sciences. They should have a highly focused narrative and a limited set of references. Emerging Issue Reviews, limited to 5,000 words, undergo an expedited review process.

Second, authors should be aware that the journal is placing greater emphasis on word limits for submissions. Papers exceeding the word limits described in the Instructions to Authors will be returned to the authors before being considered for peer review. We suggest placing some types of materials, such as lengthy descriptions of previously published methods, into Supplemental Material. However, a brief description of methods in the main body of the manuscript is required. Because references contribute considerably to the length of most papers, authors should include only the most relevant citations.

Third, each manuscript is now routinely checked for possible plagiarism before peer review. Definitions of four common kinds of plagiarism are described in the *American Medical Association Manual of Style: A Guide for Authors and Editors*, 10th edition (New York:Oxford University Press, p. 158).

Finally, a number of readers have recommended that abstracts should contain a clear statement about the potential impact of the research findings on the area of environmental health. Authors are encouraged to include a statement about the impact of their research in the Conclusion or Relevance section of their abstract.