

*Wednesday, February 7, 1:30PM-3:30PM
Closing Plenary Session*

Are amphibians canaries? What frogs may be telling us about pesticides and birth defects.

Moderator: Lowell Sever, Battelle Centers for Public Health Research and Evaluation, Seattle, WA

Tyrone Hayes, Department of Integrative Biology, University of California, Berkeley, CA

The herbicide, atrazine is a potent endocrine disrupter that chemically castrates and feminizes exposed male amphibians. Further, when combined with other pesticides, exposure results in a hormonal stress response that leads to retarded growth and development, and immuno-suppression. The immuno-suppression results in increased disease rates and mortality. Though many factors likely contribute to amphibian declines, pesticides likely play an important role even in populations that appear to decline for other reasons, such as disease. Pesticides like atrazine are ubiquitous, persistent contaminants. Effects of exposure have been shown in every vertebrate class examined (fish, amphibians, reptiles, and mammals) via common mechanisms. These observations demonstrate the critical impact that pesticides have on environmental health. Furthermore, reproductive cancers and birth defects associated with exposure to many of these same chemicals (e.g. atrazine) via identical mechanisms demonstrate that the impact on environmental health is an indicator of a negative impact on public health. Many of these mechanisms are being revealed only now in the scientific literature and agencies (such as the Environmental Protection Agency) are ill-equipped to deal with this emergent science and translate it efficiently into health-protective policies. Given the importance of this science and relevance to public health, there is a strong need to translate this information and provide public access to this knowledge. In particular, minority populations, more likely to be exposed to these chemicals, more likely to suffer health effects associated with exposure, less likely to have access to adequate health care and less likely to have access to this information, need to be informed. It is especially incumbent upon research scientists to make accurate accounts of these data available when industry and agency representatives (e.g. the EPA) provide inaccurate information to the public.