Arsenic and the human genome: susceptibility and response to exposure

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1131 Bioinformatics Building

Description:
Arsenic is a human carcinogen, and consumption of arsenic-contaminated water and food is a global health issue. My group studies susceptibility to arsenic toxicity using epidemiological approaches, with a major focus on understanding how inherited genetic variation impacts arsenic metabolism efficiency. We also study the effects of arsenic exposure on the human genome, including chromosomal alterations and modification of DNA methylation. In this talk, I will describe recent progress in these areas and discuss the implications of this research for identifying high-risk individuals and understanding the mechanisms by which exposure to arsenic impacts risk for cancer and other chronic diseases.

Dr. Pierce is a genetic and molecular epidemiologist focused on understanding gene-environment relationships and their role in the etiology of cancer. His research has a strong emphasis on identifying biomarkers that are related to susceptibility to environmental exposure, particularly arsenic, a toxicant that is carcinogenic to humans. His group leverages high-dimensional genomic data, biomarker data, and causal inference methods to identify cancer risk factors and elucidate cancer-related biological mechanisms.

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