



**Genetic and Environmental  
Toxicology Association  
of Northern California**

# **GETA 2021**

**Fall Symposium**

## **21st Century Mouse Models - Predicting Chemically-Induced Genotoxicity and the Genes that Contribute to Human Disease**

**November 4th, 2021; 10 am -12 pm PT**

**Registration Link:**

[https://us02web.zoom.us/webinar/register/WN\\_VdiX26-ERv6V-3vx7ggNUg](https://us02web.zoom.us/webinar/register/WN_VdiX26-ERv6V-3vx7ggNUg)

### **SPEAKERS:**

**Paul A. White, Ph.D.**

University of Ottawa and Health Canada

**Antonie Snijders, Ph.D.**

Lawrence Berkeley National Laboratory

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## Genetic and Environmental Toxicology Association of Northern California

### “Quantitative Interpretation of In Vivo Mutagenicity Dose-Response Data for Regulatory Decision-making: Recent Progress and Persistent Challenges”



**Dr. Paul A. White** obtained his BSc in microbiology and immunology, and Ph.D. in environmental toxicology, from McGill University in Montreal. His Ph.D. research investigated the sources and fate of mutagens and carcinogens in the St. Lawrence river system. He conducted post-doctoral research at USEPA facilities in Rhode Island and North Carolina; investigating the mutagenic hazards of municipal wastewaters. He joined Health Canada in 1999, and is currently a senior research scientist and leader of the genetic toxicology lab group in the Environmental Health Science and Research Bureau. In 2002 he was appointed Professor of Chemical and Environmental Toxicology in the Department of Biology at the University of Ottawa. His current work investigates the mutagenic

and carcinogenic hazards of complex mixtures, the design and validation of *in vitro* and *in vivo* tools for genetic toxicity assessment, the use of molecular biomarkers for mutagen exposure assessment, and the development of quantitative methods for interpretation of genetic toxicity dose-response data. He has published over 100 peer-reviewed scientific papers, and his work has been cited over 5000 times. From 2007 to 2011 he served as the editor-in-chief of *Environmental and Molecular Mutagenesis*; he currently serves on the editorial boards of *Environmental and Molecular Mutagenesis*, *Mutation Research* and *Food and Chemical Toxicology*. His work has been recognized by scientific leadership and research excellence awards from the Environmental Mutagenesis and Genomics Society, the Deputy Minister of Health of the Government of Canada, and the Governor General of Canada. He is the current president of the International Association of Environmental Mutagenesis and Genomics Societies (IAEMGS), and program co-chair for the 13<sup>th</sup> International Conference on Environmental Mutagens (ICEM), which will be held in Ottawa, Canada in September 2022.

His presentation will provide an overview of ongoing work that is dedicated to the development and implementation of a framework for quantitative interpretation of *in vivo* mutagenicity dose-response data for risk assessment and regulatory decision-making



## Genetic and Environmental Toxicology Association of Northern California

### “The Power of Mouse Genetics using Collaborative Cross (CC) Mice, Together with OMICS Analyses to Determine the Influence of Individual Variations in Disease Susceptibility”



**Dr. Antonie Snijders** received a master's degree in medical biology from VU University in Amsterdam (Netherlands) in 1999 and a doctorate degree from Utrecht University in the Netherlands in 2004. He completed a postdoctoral research fellowship at the University of California, San Francisco Cancer Research Institute in 2005-08. He is currently a Staff Scientist in the Biological Systems and Engineering Division at Lawrence Berkeley National Laboratory where he is the chair of the Department of Bioengineering and Biomedical Sciences. He is

currently the chair of the Animal Welfare and Research Committee and the Human Subjects Committee. Dr. Snijders is a visiting professor of the School of Biomedical Engineering and Information, Nanjing Medical University. He has presided over a number of NIH and Department of Energy projects, and published >80 papers in peer-reviewed journals and academic conferences. Dr Snijders's research goals are to understand the complex interactions among genetic background, environmental exposures and the microbiome in determining disease risk. He pursues studies to gain insight into these interactions using mouse population-based cohorts and human epidemiologic studies.

Precision medicine is an emerging approach for disease treatment and prevention that takes into account individual variability in environment, lifestyle and genes for each person. Genetic susceptibility is a major component that contributes to the variability in disease susceptibility. Thus, identifying the genes involved in susceptibility to disease risk may have potential utility in developing novel personalized medicines, lead to greater understanding of the biological pathways involved in disease development, and elucidate how environmental factors exert their effects in combination with genetic variants and the gut microbiome. This comprehensive systems biology approach will likely identify specific genes or pathways and microbial clades that are differentially controlled between individuals, and contribute to human variation in susceptibility to environment factor-induced disease. His lab exploits the power of mouse genetics using Collaborative Cross (CC) mice, together with human cohort studies to determine the influence of individual variations in disease susceptibility.