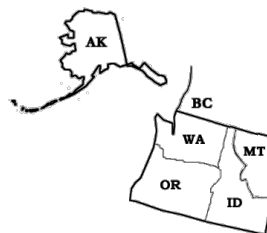




**PACIFIC NORTHWEST**  
Association of Toxicologists

# **Precision Pharmacology and Toxicology**

Regional Chapter Meeting  
October 2-3<sup>rd</sup>, 2022





# PACIFIC NORTHWEST Association of Toxicologists

## 2022 Regional Meeting Agenda Precision Pharmacology and Toxicology

### Monday, October 3<sup>rd</sup>

8:00 - 9:00 AM	<b>Presenters upload slides to conference computer and poster setup</b>
8:30 - 9:00 AM	<b>Coffee and Breakfast Pastries</b>
9:00 - 9:10 AM	<b>Welcome Remarks and Conference Overview</b> <i>Dr. John Clarke, PANWAT Vice President, Washington State University</i>
9:10 - 10:00 AM	<b>Keynote Presentation by Dr. Gary Miller</b> The exposome and toxicology: populations to molecules <i>Moderator: Dr. Chris Carosino, PANWAT President, Seagen</i>
10:00 - 10:50 AM	<b>Keynote Presentation by Dr. Nathan Cherrington</b> Piggybacking the Mechanisms for Adverse Drug Reactions to Diagnose Patients with NASH <i>Moderator: Dr. John Clarke, PANWAT Vice President, Washington State University</i>
10:50 - 11:00 AM	<b>Break</b>
11:00 - 11:50 AM	<b>Graduate Student Presentations: Session 1</b> <i>Moderator: Dr. Kari Gather, PANWAT Outreach Coordinator, PNNL</i> <i>Victoria Colvin</i> Metabolic Competency of an Airway Organotypic Culture Model <i>James Nguyen</i> Elucidating mechanisms underlying a pharmacokinetic natural product-drug interaction using a modeling and simulation approach <i>Joe Lim</i> Single cell hepatic transcriptomics revealed the role of the gut microbiome in regulating the immune-metabolic capacity of mouse liver <i>Aarzo Thakur</i> Rat as a model for predicting human renal organic anion transporter-mediated drug-drug interactions
11:50—12:15 PM	<b>Undergraduate Student Presentations</b> <i>Moderator: Christian Rude, PANWAT Graduate Student Representative, Oregon State University</i> <i>Madeleine Koegler</i> Implementation of Bionomous EggSorter with AI Directed Fluidic Sorting Zebrafish Embryos for High Throughput Screening <i>Francesca Rossi</i> Validation of an LC-MS/MS method for quantification of fumonisins in garlic

12:15—12:45 PM	<b>Lunch provided</b>
12:45 – 2:00	Poster viewing
2:00 - 2:40 PM	<b>Graduate Student Presentations: Session 2</b> <i>Moderator: Dr. Lisa Truong, PANWAT Vice President elect, Oregon State University</i> <i>Victoria Oyanna</i> Green tea-raloxifene pharmacokinetic interaction: Decrease in raloxifene solubility and systemic exposure <i>Anish Mahadeo</i> Mechanistic Analysis of Ochratoxin-A Induced Nephrotoxicity <i>Rakshit Tanna</i> Clinical assessment of the drug interaction potential of the psychotropic natural product kratom
2:40 – 3:30 PM	<b>Postdoctoral Presentations</b> <i>Moderator: Dr. John Clarke, PANWAT Vice President, Washington State University</i> <i>Jessica Ray</i> Estrogen and cholesterol efflux regulate macrophage phenotype development <i>Hao Wang</i> Cadmium induced gut dysbiosis preceding the onset of memory deficits in mice <i>Lindsey St. Mary</i> Comparative Analysis Between Zebrafish and an Automated Live-Cell Assay to Assess 87 Developmental Neurotoxicants
3:30 - 3:40 PM	<b>Break</b>
3:40 - 4:40 PM	<b>2022 PANWAT Achievement Award Lecture – Dr. Brian Thrall</b> Key Events in Nano-Bio Interactions <i>Moderator: Dr. Haley Neff-LaFord, previous PANWAT President, Seagen</i>
4:40 – 4:55 PM	<b>Award winners and PANWAT Endowment Awards</b> <i>Dr. Lisa Truong, PANWAT Vice President elect, Oregon State University</i>
4:55 – 5:00 PM	<b>Closing remarks</b> <i>Dr. Chris Carosino, PANWAT President, Seagen</i>



**Scan QR code for a full program with presentation abstracts**  
[https://www.toxicology.org/groups/rc/panwat/docs/PANWAT2022\\_full\\_program\\_9-26-22.pdf](https://www.toxicology.org/groups/rc/panwat/docs/PANWAT2022_full_program_9-26-22.pdf)

## Keynote Speaker

### **Gary W. Miller, PhD**

*Vice Dean for Research Strategy and Innovation  
Professor of Environmental Health Sciences  
Mailman School of Public Health  
Columbia University*



Dr. Miller serves as Vice Dean for Research Strategy and Innovation and Professor of Environmental Health Sciences in the Mailman School of Public Health, and Professor of Molecular Pharmacology and Therapeutics in the Vagelos College of Physicians and Surgeons at Columbia University in New York. He completed his PhD in Pharmacology and Toxicology at the University of Georgia and postdoctoral training in Molecular Neuroscience at Emory University and Duke University. His laboratory studies the role of environmental factors in neurodegenerative diseases, including Parkinson's disease and Alzheimer's disease. His research utilizes *C. elegans*, transgenic mouse models, and human studies using a variety of techniques. He is an international leader in the field of exposomics. Dr. Miller founded the first exposome center in the U.S. and wrote the first book on the topic, *The Exposome: A Primer*. In 2020 he published an updated and expanded version of the book, *The Exposome: a New Paradigm for the Environment and Health* published by Elsevier Academic Press. He has helped develop high-resolution mass spectrometry methods to provide an omic-scale analysis of the human exposome. Dr. Miller directs the Exposomics Laboratory at Columbia University, which supports the integration of environmental measures into clinical and translational research projects. He is a member of the National Institutes of Health All of Us Research Program Advisory Panel and the National Institute of Environmental Health Sciences Advisory Council, and served on the External Advisory Panel of the Human Biomonitoring for the European Union (HBM4EU) project. Dr. Miller served as Editor-in-Chief of *Toxicological Sciences*, the flagship journal of the Society of Toxicology from 2013-2019. He is the founding editor of the new journal *Exposome*, published by Oxford University Press.

## Keynote Speaker

### **Nathan J. Cherrington, PhD**

*Professor of Pharmacology and Toxicology*

*Associate Dean for Research*

*Director of the Southwest Environmental Health Sciences Center*

*Director of the Center of Toxicology*

*1885 Society Distinguished Scholar*

*University of Arizona*



Dr. Cherrington is a Professor and 1885 Society Distinguished Scholar in the Department of Pharmacology and Toxicology at the University of Arizona. He is the Associate Dean for Research in the R. Ken Coit College of Pharmacy, Director of the Southwest Environmental Health Sciences Center, and Interim Director of the Arizona Board of Regents Center for Toxicology. He received a B.S. in Zoology from Brigham Young University and a Ph.D. in Toxicology from North Carolina State University with an emphasis on xenobiotic metabolism. He then moved to the University of Kansas Medical Center to pursue postdoctoral training in drug metabolism and disposition. He has taught Drug Metabolism and Disposition, Systems Toxicology, Environmental Health Science, and Advanced Toxicology courses since joining the faculty at the University of Arizona in 2002. Nathan has published over 120 original research papers on the sources of inter-individual variability in drug response. He serves as an associate editor for *Toxicological Sciences*, and on the editorial board of *Drug Metabolism and Disposition*. He has served on numerous NIH study sections including chair of the NIEHS Environmental Health Sciences Review Committee and Severe Adverse Drug Reactions panel, as well as several committees for the Society of Toxicology and the International Society for the Study of Xenobiotics. He was awarded the Alumni Achievement Award from Brigham Young University and the Achievement Award by the Society of Toxicology. His current research is on the effect of underlying disease states on an individual's ability to metabolize and eliminate drugs.

## 2022 Toxicology Achievement Award

### **Brian Thrall, PhD**

*Scientist Emeritus*

*Pacific Northwest National Laboratory*



Dr. Brian Thrall has more than 30 years of experience in toxicology and has decades of contribution in leadership, scholarship, mentoring, and service to the field and the region. He received his BS and MS in Biology from the University of South Dakota and his PhD in Pharmacology and Toxicology from Washington State University. He joined the Pacific Northwest National Laboratory (PNNL) as a research scientist three years after earning his PhD and remained there throughout his career. He became an integral part of the PNNL leadership by serving in multiple leadership capacities, including Director of the Center for Nanotoxicology and Manager of the Biology Research Sectors where he managed a \$38 million research portfolio from NIH and DOE. Brian has published a number of outstanding manuscripts in the area of mass spectrometry, gene expression, proteomics, multi-omics, and nanotoxicology. He has authored more than 100 peer-reviewed abstract and publications. Over the past 20 years he emerged as a thought leader in the global effort to understand the toxicity and risk posed by engineered nanomaterials. His leadership at the National Institutes of Environmental Health Sciences was instrumental to drive this field forward. He organized and participated in dozens of symposia and workshops at local, regional, national and international venues advancing numerous disciplines. Dr. Thrall is a past President of PANWAT (2000-2001) and has a long list of awards for his scholarship and leadership accomplishments. Although he was not at an academic institution, he has an impressive list of trainees who have gone onto successful careers of their own. Congratulations to Dr. Thrall for earning the 2022 PANWAT Toxicology Achievement Award for his substantial contributions to toxicology in the Pacific Northwest and throughout the world.

## Posters

**#1 Effect of cimetidine mediated inhibition on the levels of exogenous and endogenous substrates of organic cation transporters in rats**

Anoud Sameer Ailabouni, Vijay Mettu, Aarzo Thakur, Dilip Singh, and Bhagwat Prasad

**#2 Identifying Novel Endogenous Substrates of the CYP1B1 Enzyme in Exosomes: Implications for Ocular Disease and Wound Repair**

Anna DePaepe, Abdulaziz Alshehri, Nader Sheibani, Patrick L. Iversen, Craig B. Marcus, Manuel Garcia-Jaramillo, and Andrew J. Annalora

**#3 Transcriptomic Responses Underlying Site-Specific Toxicity in Developing Zebrafish Exposed to Whole Mixtures from Portland Harbor Superfund Site Passive Sampling Extracts**

Christian I. Rude, Sarah E. Allan, Susan C. Tilton, Kim A. Anderson, Katrina M. Waters, Robyn L. Tanguay

**#4 A review of the electronic cigarettes' withdrawal severity symptoms among young adult users and non-users**

Daryl Kwan and Ayesha Ahmed PhD

**#5 Knocking Out the Zebrafish CYP1B1 Gene Alters Metabolomic Profiles and Neurobehavioral Functions**

Dante Perone, Andrew Annalora, Jed Goldstone, Manuel Garcia-Jaramillo, Craig Marcus, Robyn L. Tanguay

**#6 Polybrominated diphenyl ether (PBDE) and its effects on specific gut microbes and their associated metabolic networks relating to cellular growth and function**

Kyle Joohyung Kim<sup>1</sup>, Yan Jin<sup>2</sup>, Kris Weigel<sup>1</sup>, Julia Cui<sup>1</sup>, and Haiwei Gu<sup>2</sup>

**#7 Phenotypically-anchored RNA sequencing reveals gene profiles associated with increasing retene concentration in zebrafish**

Lindsay B. Wilson, Ryan S. McClure, Katrina M. Waters, Robyn L. Tanguay

**#8 Comparative hazard potential of environmentally relevant alkylated PAHs**

Mackenzie Morshead, Lisa Truong, Michael Simonich, Robyn L. Tanguay

**#9 Silymarin reduced microcystin-LR-elicited hepatotoxicity**

M. Ridge Call and John D. Clarke

**#10 Cell type specific effects of MCLR: hepatocytes and stellate cells in co-culture**

Namrata Bachhav, Katherine D. Lynch, and John D. Clarke

**#11 Maternal PBDE exposure disrupts gut microbiome and liver expressions in humanized PXR-transgenic mouse offspring over a time course**

Sarah Kim<sup>1</sup>, Hao Li<sup>2</sup>, Haiwei Gu<sup>3</sup>, Sridhar Mani<sup>2</sup>, and Julia Y. Cui<sup>1</sup>

**#12 Understanding combined effects of PAH exposure and inflammation contributing to toxicity in an in vitro 3D respiratory model**

Teresa Valdez, Brianna N. Rivera, Yvonne Chang, Jamie M. Pennington, Susan C. Tilton

**#13 Characterizations of Fatty Acids from *Desmodium* sp. and *Sechium edule***

Abigail Lawrence, Gonzalo Diaz, Yandy Paez, Jennifer Durringer

**#14 Developing a high throughput optomotor behavior assay in zebrafish larvae**

Austin Nichols, Michael Simonich, Lisa Truong, Robyn Tanguay

**#15 Improving an Antibiotic Resistance Database: Application of new visualization and Assembly Software**

Immanuel Anoka-Ayembe, Jim Wallace and Elaine M. Faustman

**#16 Comparative Toxicity of Alkylated and Parent Polycyclic Aromatic Hydrocarbons in Primary Human Bronchial Epithelial Cells**

Mackenzie Allison, Jamie Pennington, Brianna Rivera, Susan C. Tilton

**#17 Size- and Shape Dependent Toxicity of Oxidation-Resistant Silver Nanoparticles**

Paul Nguyen, Bryan Harper, Stacey Harper

**#18 Assessing competitive metabolism of polycyclic aromatic hydrocarbons (PAHs) via in vitro metabolism**

Kari A. Gaither<sup>1</sup>, Paritosh Pande<sup>1</sup>, Jordan N. Smith<sup>1,2</sup>



## PANWAT Meeting Sponsors

PANWAT greatly appreciates the generous contributors who made this meeting possible:

### Gold



### Silver

