



DESIGN OF SAFER
CHEMICALS AND PRODUCTS

The Nexus of Toxicology and Chemistry

APRIL 23–24, 2015

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LOCATION

McMenamins

2126 SW Halsey Street, Troutdale, OR

www.mcmenamins.com

This 2-day course is for professionals who design new chemicals, formulations, and commercial products, as well as those interested in supporting safer products and processes within public, private, and non-profit organizations. Recognized leaders in chemistry, toxicology, ecotoxicology, nanotoxicology, and other disciplines will guide participants in the use of the most prominent tools used in chemical design and predictive toxicology. Participants will have the opportunity to discuss cutting-edge science and practical strategies for the design of safer chemicals and products.

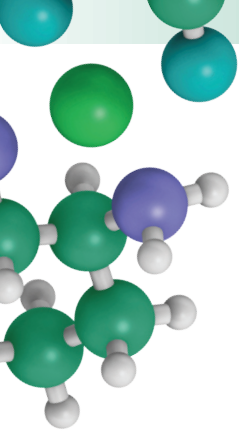
Registration

<http://www.ngcworkshop.eventbrite.com>

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The Nexus of Toxicology and Chemistry

DAY 1

This forum will provide participants the opportunity to discuss cutting edge-science and new decision-making frameworks for the design of safer products and processes. Chemists, toxicologists, environmental scientists, public health professionals, government regulators, and others are joining together to identify practical approaches for the rational design of safer industrial chemicals.

Learning Objectives

At the conclusion of the course, participants will be able to:

- Describe advances in toxicology and new tools that are available to design chemicals with minimal intrinsic health and environmental hazards.
- Explain how data from different models can be used for chemical hazard assessment and to drive development of decision-making frameworks that translate scientific progress into action for the user or the regulator.
- Describe an overview of chemical hazard and alternative chemical assessment tools.
- List three approaches used by industry or academia that contributed to the design of a safer chemical.

Agenda

8:00 am	Registration
8:30	Welcome/Introduction Roger McFadden, Vice President, Senior Scientist, Staples, Inc., Northwest Green Chemistry Advisory Council member
8:45	<i>Building The Case: Why Toxicology Matters</i> Pamela J. Spencer, PhD, DABT, TERC, Science Director, The Dow Chemical Company
9:30	<i>Why Are Chemistry and Toxicology Interlinked?</i> Nick Anastas, Senior Advisor for Green Chemistry, Office of Research and Development, National Risk Management Research Laboratory
10:00	Break
10:15	<i>Introduction to Toxicology for Chemists—Part 1 (in vivo)</i> Terry Kavanagh, PhD, DABT, Professor, University of Washington DEOHS <i>Introduction to Toxicology for Chemists—Part 2 (in vitro)</i> Bryan Brooks, PhD, Professor, Baylor University
12:00	Lunch (provided)
1:00 pm	<i>Chemical Hazard and Alternative Assessments of Existing Chemicals</i> Lauren Heine, PhD, Co-Director, Clean Production Action
1:45	<i>Business Case Study: Agricultural Chemical Formulations, Redesign, and New Product Development</i> Pamela J. Spencer, PhD, DABT, TERC, Science Director, The Dow Chemical Company
2:30	Break
2:45	<i>Research Case Study: A Strategy for the Design of Safer Nanomaterials</i> Robert Tanguay, PhD, Distinguished Professor, Oregon State University
4:00	<i>Policy Case Study: Advantages of Safer Products in the Supply Chain</i> Nick Anastas, Senior Advisor for Green Chemistry, Office of Research and Development, National Risk Management Research Laboratory
4:45	Closing Remarks

DAY 2

This hands-on workshop will introduce participants to systematic decision-making for the design and selection of safer commercial chemicals. Participants will learn how to use some of the most prominent tools available in predictive toxicology for chemical design. They will explore the strengths and limitations of the different predictive models and approaches for safer chemical design. This workshop is provided by the Molecular Design Research Network, a multidisciplinary effort led by scientists at Yale University, Baylor University, George Washington, and UW DEOHS.

Learning Objectives

At the conclusion of the workshop, participants will be able to:

- Describe property-based design guidelines that increase the probability that chemicals will not exert acute or chronic toxicity to aquatic species and mammals.
- Describe how in silico tools can be used to fill data gaps.
- Explain the basics of computational theory relevant to practitioners, and how computations can be paired with experimental findings to design chemicals with minimal biological activity.
- List sources of experimental data, which can be used to train computational models, as well as future strategies for secure data-sharing.

Agenda

8:00 am	Registration
8:30	Welcome/Introduction Nancy Simcox, MS, UW DEOHS Continuing Education Programs
8:45	Introduction to Rational Chemical Design for Safety Bryan Brooks, PhD, Professor, Baylor University
8:30	Current Practices in Predictive Toxicology Adelina Voutchkova-Kostal, PhD, Assistant Professor, George Washington University
10:15	Break
10:30	Applying Computational Chemistry to the Design of Safer Chemicals Jakub Kostal, PhD, DOT Consulting, LLC
11:30	Discussion
12:00 pm	Lunch (provided)
1:00 pm	Case Studies: Next Generation of Predictive and Design Tools in Practice Bryan Brooks, PhD Adelina Voutchkova-Kostal, PhD Terry Kavanagh, PhD, DABT Jakub Kostal, PhD
4:00 pm	Closing Remarks

Intended Audience for the 2-Day Course

Toxicologists, environmental scientists, chemical and product designers in industry, chemists, chemical engineers, formulators of chemical intensive products, manufacturers of articles and products (electronics, apparel, biotechnology, aerospace, etc.), academicians and graduate students, procurers of chemical products (purchasing organizations, retailers), sustainability coordinators, supply chain managers, and other professionals engaged in the decision-making process of using existing chemicals or creating new ones.

Registration

Northwest Green Chemistry

<http://www.ngcworkshop.eventbrite.com>

For more information, contact Saskia van Bergen at sava461@ECY.WA.GOV.

Early Bird Student	\$40
Early Bird Day 1 only	\$100
Early Bird Day 1 & Day 2	\$125

Early Bird Registration ends March 15, 2015.

Location & Lodging

McMenamins
Edgefield, Oregon

<http://www.mcmenamins.com/Edgefield>

Historic Edgefield, built in 1911 as the county poor farm, is a destination resort in the Pacific Northwest that blends Oregon's natural beauty with McMenamins' signature whimsy: original buildings carefully restored with cozy interiors, gardens grown using organic methods, great food and drink, live entertainment and more.

Lodging is available onsite at McMenamins Edgefield. Make reservations online or by calling: 800-669-8610. A room block has been reserved for workshop participants under the code 1504NORTH through March 23, 2015. Be sure to mention the group code, or you may be told that no rooms are available.

Support

U.S. Environmental Protection Agency, Region 1, Region 10 and Puget Sound National Estuary Program
Northwest Green Chemistry

University of Washington- Department of Environmental and Occupational Health Sciences (UW DEOHS),
DEOHS Sustainable Technologies, Alternate Chemistry-Training and Education Center, Northwest Center
for Occupational Health and Safety

Molecular Design Research Network, Yale University

Department of Environmental and Molecular Toxicology and the Environmental Health Sciences Center
at Oregon State University

Oregon Institute of Occupational Health Sciences, Oregon Health and Science University

Oregon Environmental Council

Green Chemistry and Commerce Council

Washington State Department of Ecology

Northwest Green Chemistry is a project of Social and Environmental Entrepreneurs (SEE)



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NORTHWEST CENTER FOR OCCUPATIONAL HEALTH AND SAFETY