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
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
Building The Case: Why Toxicology Matters
Pamela J. Spencer, PhD, DABT, TERC, Science Director, The Dow Chemical Company

9:30
Why Are Chemistry and Toxicology Interlinked?
Nick Anastas, Senior Advisor for Green Chemistry, Office of Research and Development, National Risk Management Research Laboratory

10:00
Break

10:15
Introduction to Toxicology for Chemists—Part 1 (in vivo)
Terry Kavanagh, PhD, DABT, Professor, University of Washington DEOHS

Introduction to Toxicology for Chemists—Part 2 (in vitro)
Bryan Brooks, PhD, Professor, Baylor University

12:00
Lunch (provided)

1:00 pm
Chemical Hazard and Alternative Assessments of Existing Chemicals
Lauren Heine, PhD, Co-Director, Clean Production Action

1:45
Business Case Study: Agricultural Chemical Formulations, Redesign, and New Product Development
Pamela J. Spencer, PhD, DABT, TERC, Science Director, The Dow Chemical Company

2:30
Break

2:45
Research Case Study: A Strategy for the Design of Safer Nanomaterials
Robert Tanguay, PhD, Distinguished Professor, Oregon State University

4:00
Policy Case Study: Advantages of Safer Products in the Supply Chain
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
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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)