Contemporary Issues in Chemical Risk workshop (Hybrid)
Instructor: David C. Dorman, DVM, PhD, DABVT, DABT

Date: November 18-19, 2022

Onsite participation:
University of Eastern Finland (UEF)
Lecture hall: Tietoteknia auditorium, Street address: Savilahdentie 6, 70210 Kuopio, Finland

Online participation via Teams:
Access live-stream lectures and lecture recordings for 14 days.
(Link will be sent to registered participants)

Registration to the meeting: https://link.webropolsurveys.com/S/F91180766605EFF8
Registration fees:
The course (onsite/online) is free for students and personnel of UEF.
The course is free for all graduate and doctoral students. The course fee for other academic participants is 50 € and for people outside academia 100 €.
Participation to dinner is 50 €.
The deadline for registration is Nov 4, 2022

More information: jaana.rysa@uef.fi
Organizers: Master's Degree Programme in Toxicology and Doctoral Programme in Drug Research.

Workshop Description:

This a hybrid (in person and online options) continuing education course will provide participants with an overview of contemporary challenges in chemical risk assessment and risk management. Risk assessment consists of several key steps including hazard identification, exposure assessment, and dose-response assessment. Information from these steps is subsequently integrated to characterize the risk. Risk management considers the risk assessment and may lead to policy decisions including development or revisions of regulations. These decisions may impact chemical regulation, hazardous waste cleanup, and drug recalls.

This workshop targets scientists in pharmacy, drug discovery and development, clinical research, and toxicology. The design and content of the courses has considered input from the Nordic Action on Competence Provision for Risk Assessments of Chemicals Working Group. It will assist toxicologists in Nordic countries to develop and maintain competency in chemical risk assessment.

Development of this course has been supported by the Fulbright-Saastamoinen Foundation, the University of Eastern Finland-Kuopio School of Pharmacy, and North Carolina State University College of Veterinary Medicine.

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Schedule

Friday, November 18, 2022

0800-0845: Introduction to the workshop and overview of the risk assessment process
0900-0945: An introduction to systematic review
1000-1045: Systematic review of endocrine active chemicals
1100-1145: New alternative methods (NAMs) in hazard identification
1145-1300: Lunch break
1300-1345: New alternative methods (NAMs) in hazard identification (continued)
1400-1445: Adverse outcome pathways (AOPs)
1500-1545: Adverse outcome pathways (AOPs) (continued)
1600-1645: Benchmark dose models
1700-1900: Reception and dinner

Saturday, November 19, 2022

0900-0945: Introduction to physiologically-based pharmacokinetic (PBPK) models
1000-1045: Inhalation dosimetry modeling
1100-1145: Nose-to-brain transport: is this a concern?
1145-1300: Lunch break
1000-1045: Biomonitoring data in risk assessment
1300-1345: Cancer risk assessment: Use of key characteristics
1400-1445: Chemical alternative assessment
1500-1545: Class approaches
1600-1645: The future of chemical risk assessment and implications for policy makers
1700-1730: Closing comments

Overall Learning Objectives

• Be able to define hazard and risk.
• Describe how scoping and problem formulation can help guide a risk assessment.
• Explain the steps involved in the risk assessment process.
• Describe best practices used to identify and evaluate scientific literature needed for hazard assessment.
• Describe the steps involved in a systematic review of the literature.
• Explain the use of physiologically-based pharmacokinetic (PBPK) models to support route-to-route extrapolations, species to species extrapolations, and dose extrapolations.
• Explain the use of computational fluid dynamic (CFD) and other inhalation dosimetry models to perform species extrapolations.
• Describe the use of a benchmark dose (BMD) to estimate the point of departure (POD).

• Describe the steps involved in a chemical alternative assessment (CAA).
• Describe the strengths and limitations of using new approach methodologies (NAMs) in chemical risk assessment.
• Describe the elements of an adverse outcome pathway (AOP).
• Explain how biomonitoring data can be used to inform risk assessment.
• Explain how rodent bioassay and human epidemiology data can be used to characterize a potential carcinogen.
• Compare and contrast the threshold versus the non-threshold models for risk following exposure to carcinogens and be able to discuss the public policy implications of both.
• Discuss the science and science policy decisions that may be needed as toxicology continues to evolve.

About the Instructor:

David C. Dorman is the current Fulbright-Saastamoinen Foundation Distinguished Chair in Health Sciences at the University of Eastern Finland. Dr. Dorman is a professor of toxicology in the Department of Molecular Biomedical Sciences at North Carolina State University. Dr. Dorman's research interests include neurotoxicology, nasal toxicology, pharmacokinetics, and chemical risk assessment. Dr. Dorman is an elected fellow of the Academy of Toxicological Sciences and a fellow of the American Association for the Advancement of Sciences. Dr. Dorman is also the recipient of the Society of Toxicology's Achievement Award, which is given to an early career individual for significant contributions to toxicology. Dr. Dorman is a diplomate of the American Board of Veterinary Toxicology and the American Board of Toxicology. He has chaired or served on multiple US National Academies committees and is a National Associate of the Academies. He currently chairs the US National Academies committee charged with review of the US Department of Defense's revised approach to deriving an occupational exposure level for trichloroethylene (TCE). Earlier this year he completed service as chair of the National Academies indoor chemistry committee. He has also served on multiple IARC monograph groups and has been a member of the US National Toxicology Program's Board of Scientific Counselors. He completed a combined PhD and veterinary toxicology residency program at the University of Illinois at Urbana-Champaign and holds a Doctor of Veterinary Medicine from Colorado State University.

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