RISK ASSESSMENT FOR ENVIRONMENTAL HEALTH HAZARDS

SYLLABUS
Autumn Quarter, 2018
ENVH 577, PUBPOL 589, CEWA 560
Elaine M. Faustman, PhD

Items to be discussed include:

1. Course Description
2. Class Schedule
3. Extra Credit Class Schedule
4. Description for Course Assignments
    A. Memo to the Governor
    B. Short Term Assays
    C. Group Project Topics: Case Studies
5. Readings Table of Contents
6. Assignment and Reading Schedule

Risk Assessment ENVH 577, PUBPOL 589, CEWA 560
Autumn Quarter 2018
Tuesday/Thursday from 8:30am-10:20 AM
Room: More Hall (MOR) 234

Date	Schedule	Session Leader
September 27th Thursday	Introduction to Risk Assessment Issues and Approaches Course Requirements – Review and Discussion	Faustman
October 2nd Tuesday	Perceptions of Risk **Due: Choose short-term assay to review** **Due: Choose Risk Assessment Group Project**	Faustman
October 4th Thursday	Identification of Hazard I: Chronic Bioassay	Faustman
October 9th Tuesday	Identification of Hazard II: Short Term and In Vitro Assays Assign Group Projects **DUE: Short-term assay assignment**	Faustman
October 11th Thursday	Exposure Assessment	Faustman
October 16th Tuesday	Identification of Hazard III: Epidemiological Principles Qualitative Risk Characterization I: Approaches for Evaluating Uncertainty and Variability for Public Health	Faustman
October 18th Thursday	Quantitative Risk Characterization II: Dose Response Assessment and Extrapolation to Low Dose Can Risk Assessment modeling be used for predicting public health impacts?	Faustman
October 23rd Tuesday	*Tentative*: BMD Modeling Program – Introduction to the Quantitative Worksheet Opportunities for Probabilistic Risk Assessment Modeling	Dhakal
October 25th Thursday	Risk Communication: Practical Approaches for Learning Who, What, Where, and When Context for Risk Communication and Case Examples **Due: Memo to the Governor**	Faustman (Remote) Smith
October 30th Tuesday	Ecological Risk Assessment: Practical Approaches to Ecosystems Assessment Lessons Learned from the U.S. EPA	Garry
November 1st Thursday	Hazard Ranking Approaches for Complex Decision Making Radiation Models/RESRAD Demonstration Sampling Design and Determining How Clean is Clean: Tackling the Issues of Levels of Detection and Brownfields	Faustman (Remote) Griffith

November 6th Tuesday	Approaches for Microbial Risk Assessment of Zoonoses and Vectorborne Disease **Due: Quantitative Worksheet**	Meschke
November 8th Thursday	Civil Action TCE Case Study: Clash of the Titans Science vs. Regulation in the Courtroom	Lewandowski
November 13th Tuesday	Where Research Meets Practice: Developing innovative environmental policies in King County Hazardous Waste Site Risk Assessments	Whittaker Davies Grimsted
November 15th Thursday	Pharmaceutical Risk Assessment Approaches: Balancing Risk and Benefits in Patients	Sprugel
November 20th Tuesday	Group Project Presentations	Faustman
November 22nd Thursday	**Thanksgiving Holiday**	
November 27th Tuesday	Group Project Presentations	Faustman
November 29th Thursday	Group Project Presentations	Faustman
December 4th Tuesday	Group Project Presentations	Faustman
December 6th Thursday	Putting Risk Assessment and Risk Management into Context: What have we learned? Need to learn? Thinking about Risk Management as Critical Infrastructure **Due: Student Group Risk Assessment Project Papers**	Faustman
December 11th Tuesday	**Final Exam 10:30am-12:20**	MORE Hall 234

Instructor: Dr. Elaine M. Faustman
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Dr. Elaine M. Faustman, Professor and Director of the Institute of Risk Analysis and Risk Communication, School of Public Health, University of Washington, Seattle. Dr. Faustman directs the Center for Children's Health Research and directed the Pacific Northwest Center for the National Children's Study and the Oceans and Human Health Center. She is an elected fellow of the American Association for the Advancement of Science and the Society for Risk Analysis. She has served on the USEPA Science Advisory Board and chaired the National Academy of Sciences Committee on Developmental Toxicology. She has also served on the National Advisory Environmental Health Sciences Council, NIEHS-NTP Board of Scientific Counselors and Committee on Alternative Toxicology Methods, National Academy of Sciences Committee on Toxicology and the Institute of Medicine Upper Reference Levels of Nutrient Subcommittee of the Food and Nutrition Board. She has served as the Secretary General for the International Union of Toxicology(IUTOX) and is currently a member of the International Science Council (ICSU) World Data Systems Advisory Board. For over 2 decades she has been involved and directed Stakeholder forums and Community Based Participatory Research for DOE, EPA and NIH. She currently serves on the ICSU CODATA Citizen Sciences Taskgroup. Her research expertise is on integrative scientific approaches including identifying molecular mechanisms of developmental, reproductive, and neuro toxicants, characterizing in vitro techniques for toxicology assessment, and developing biological and exposure based dose-response models. She has over 200 peer reviewed research publications and reports.

Teaching Assistant: Surakshya Dhakal
My office hours are: by appointment on Tuesdays and Thursdays after class
Email: sdhakal@uw.edu.

I am Surakshya [pronounced: Su-rak-shya, identify as: she], a PhD student in DEOHS. My academic background is in ecology, chemistry and environmental health. Within these disciplines, my research has focused on chemical analyses and toxicology reviews, field exposure assessments, chamber experiments, and qualitative analyses. For the first, I have reviewed toxicological literature of various chemicals, such as formaldehyde, antibiotics and flavoring compounds, and worked on chemistry of wines and geochemistry of large river systems in Hindu-Kush Himalayan region. I have conducted chamber experiments to better predict turbulent diffusion coefficients for use in indoor air modeling and human exposure studies. For the field exposure assessment, I have worked on indoor air pollution from biomass burning and its pulmonary health effects, and assisted in environmental sampling of outdoor air pollutants. As part of the qualitative research, I have lead a formative study on maternal and child health and nutrition in Nepal. If any of these sound interesting to you or you are already working on these, I would be happy to hear from you and guide you on your projects/research.

UW School of Public Health Equity Diversity and Inclusion Statement

The University of Washington School of Public Health acknowledges the land we sit and occupy today as the traditional home of the Tulalip, Muckleshoot, Duwamish, and Suquamish tribal nations. Without them we would not have access to this working, teaching, and learning environment. We humbly take the opportunity to thank the original caretakers of this land who are still here.

Our School of Public Health is committed to addressing the root causes of health inequities and promoting healthy and safe communities in our region and beyond. As the problem of racial and ethnic disparities in health outcomes continues to persist, policymakers and the general public increasingly look to health professional schools to address these urgent and unacceptable circumstances. As one of the few schools of public health in the Northwest, it is particularly important for us to be up to this challenge.

Underlying all public health research and training activities is an acknowledgement and deeper understanding of the effects that historical, cultural and socioeconomic factors have on the health of communities, especially those who are most underserved. Racism and race-based oppression is all too often a central driver of health disparities. We work to attract and retain students, faculty and staff from diverse backgrounds and perspectives, to build and sustain a positive climate for inclusion and community, and to engender multiple modes of approaching complex problems. We strive to create opportunities for education, research and collaboration that leverage our strengths, similarities and differences. We challenge ourselves to view problems and evaluate solutions through an equity lens. Through each of these efforts, we aim to foster a generation of public health professionals and academicians who are poised to transform health for the better in our communities.

Our historical logo, the SoulCatcher by Marvin Oliver, symbolizes the restoration of health and wellness and reminds us to align our work with the history, traditions, and practices while respecting and supporting the agency of individuals and communities to achieve their desired health outcomes. More information about our logo can be found here.

The work of equity, diversity and inclusion is the work of Public Health. We are committed to a future that is free of health inequities, that promotes the highest level of wellness that our communities aim for, and a diverse and inclusive public health workforce that embodies humility, respect, leadership and service on behalf of the diverse communities we are privileged to serve.

Academic Integrity (http://sph.washington.edu/students/academicintegrity)
Students at the University of Washington (UW) are expected to maintain the highest standards of academic conduct, professional honesty, and personal integrity. The UW School of Public Health (SPH) is committed to upholding standards of academic integrity consistent with the academic and professional communities of which it is a part. Plagiarism, cheating, and other misconduct are serious violations of the University of Washington Student Conduct Code (WAC 478-120). We expect you to know and follow the university's policies on cheating and plagiarism, and the SPH Academic Integrity Policy. Any suspected cases of academic misconduct will be handled according to University of Washington regulations. For more information, see the University of Washington Community Standards and Student Conduct website.

UW Disability Statement (http://depts.washington.edu/uwdrs/faculty-resources/syllabus-statement)
Access and Accommodations: Your experience in this class is important to me. If you have already established accommodations with Disability Resources for Students (DRS), please communicate your approved accommodations to me at your earliest convenience so we can discuss your needs in this course. If you have not yet established services through DRS, but have a temporary health condition or permanent disability that requires accommodations (conditions include but not limited to; mental health, attention-related, learning, vision, hearing, physical or health impacts), you are welcome to contact DRS at 206-543-8924 or uwdrs@uw.edu or disability.uw.edu. DRS offers resources and coordinates reasonable accommodations for students with disabilities and/or temporary health conditions. Reasonable accommodations are established through an interactive process

between you, your instructor(s) and DRS. It is the policy and practice of the University of Washington to create inclusive and accessible learning environments consistent with federal and state law.