ENV H 593 A Wi 18: Current Topics in Risk Assessment

SYLLABUS:

Life Cycle Analysis in Nanoparticle Risk Assessment

Winter Quarter 2018

ENVH 593 (Journal Club)

Credits: 1

Current Quarter Topic: Life Cycle Analysis in Nanoparticle Risk Assessment

Instructor:

Elaine M. Faustman, PhD, DABT
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Office hours: By appointment

Course Times and Locations:

Tuesdays from 4:00-5:30pm

Sessions will be held on: 1/9, 1/30, 2/13, 2/20, 2/27

Class will be held in 4225 Roosevelt Way NE, Suite 100 in Roosevelt 2228/212

Course Website: https://canvas.uw.edu/courses/1128941

- The Syllabus is posted on the website
- Within the files tab you will find folders containing the readings for each session.
- Please post your selection in the discussion section of canvas by 12pm the Monday before class.

Course Description:

New and emerging technologies, such as engineered nanoparticles, are rapidly being incorporated into
consumer products, medical supplies, pharmaceuticals and the food supply. In risk assessment, we are concerned with exposures from directly using or consuming these products as well as exposures that occur throughout the life cycle of the product. Life cycle analysis can assess the environmental and public health impacts associated with a product beginning with the raw materials all the way through disposal or recycling. Understanding these factors is critical to a complete risk assessment.

Course Learning Objectives:

Upon completion of this journal club, students shall be able to:

- Understand the rationale and need for life cycle analysis in risk assessment
- Review reports and procedures from life cycle analysis from State, Federal and International agencies
- Discuss how nanomaterials from consumer products can be released in the environment and the implications for exposure and risk assessment

In general:

1. Think critically about risk assessment by completing reading assignments and participating in class discussions.
2. Communicate the concept of integrated risk assessment and risk communication.
3. Explain the risk assessment framework as it relates specifically to the current quarter topic.
4. Analyze assigned readings and interpret their relevance to not only the quarter topic but also their applicability and generalizability to risk assessment topics at large.
5. Summarize key points from assigned journal articles or other required readings.
6. Prepare and deliver an oral presentation(s) discussing the required reading.
7. Critique risk assessment applications as they relate to the current quarter topic.
8. Identify risk assessment strengths and challenges, as well as the role of uncertainty.
9. Develop skills to think critically about the methods and tools used for assessment, management, and communication of risk.

Academic Integrity Statement:

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.

Multi-cultural Inclusion Commitment from Environmental Health

The UW School of Public Health seeks to ensure all students are fully included in each course. We strive to create an environment that reflects community and mutual caring. We encourage students with concerns about classroom climate to talk to your instructor, your advisor, a member of the departmental or SPH Diversity Committee and/or the program director. DCinfo@uw.edu is a resource for students with classroom climate concerns.

We have the privilege of learning together and we have a responsibility to engage in dialogue in a way that supports learning for all of us. Many of the issues we will discuss in this course may concern issues of disproportionate risks, sensitivities, and impacts due to age, gender, race, and/or social inequalities. This is what public health hopes to address, however we know that these can be difficult topics to address, hence we thus feel it is even more important to be sensitive to our colleagues’ experiences and ideas. Here are some practices we as learning community members can strive to use in our learning process:

- My own viewpoint is important—share it. It will enrich others.
- My students’ and colleagues’ viewpoints are important—listen to them. Do not judge them.
- Extend the same listening respect to others I would wish them to extend to me. We all have room to grow to become better listeners in non-judgmental ways.
- Recognize that I might miss things others see and see things others might miss.
- Raise my views in such a way that I encourage others to raise theirs.
- Inquire into others’ views while inviting them to inquire into mine.
- Ask questions when I don’t understand something.
- Surface my feelings in such a way that we make it easier for others to surface theirs.
- Test my assumptions about how and why people say or do things.
- Challenge what was said or done, rather than make assumptions about the individual.
- Beware of either-or thinking.
• Be willing to take risks in moving outside my comfort zones.
• Affirm others

Course Session Schedule and Readings:

Session 1: Introduction to Lifecycle Analysis and Engineered Nanoparticles

- Introductions- All
- Overall goals of the course and introduction to the topic- Elaine Faustman

Session 2: Existing frameworks for risk assessment and prioritization of EMNs (January 30th)

- Introduction- Elaine Faustman
- Presentation of Key Points from Readings- Students

Please read one review article or sections of longer reports and one example article and be prepared to share the key points

Session 2 Readings:

Review articles of frameworks for risk assessment and prioritization


Example frameworks for risk assessment and prioritization of ENMs


Session 3: Background on Lifecycle Assessment

- Introduction- Elaine Faustman
- Presentation of Key Points from Readings- Students

Please read two articles or sections of longer reports and be prepared to share the key points

Session 3 Readings:


Session 4: Application of Lifecycle Assessment for ENMs

Session 4 Readings:


Session 5: Lifecycle Assessment Activity


Session 6: LCA Case Studies


- refer to chapter 3 (scope of the LCA), whole report on canvas files


Life-cycle assessment of energy and environmental impacts of LED lighting products Part 1: Review of the Life-Cycle Energy Consumption of Incandescent, Compact Fluorescent, and LED Lamps. 2012 February


Course Summary:

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