ENV H 593 A Sp 18: Current Topics In Risk Assessment

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ENV H 593 A: Current Topics in Risk Assessment

SYLLABUS:

Systematic Review: What do we need to know for risk assessment and TSCA Reform?

Spring Quarter 2018

ENVH 593 (Journal Club)

Credits: 1

Current Quarter Topic: Systematic Review: What do we need to know for risk assessment and TSCA Reform?

Instructor:

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Office hours: By appointment

Course Times and Locations:

Time: Wednesdays from 4:00-5:30pm

Dates: Sessions will be held on: April 4, 11, 25, May 2, 9, 16

Location: 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:

In this course we will discuss key questions related to systematic review for risk assessment and TSCA reform. How do we tackle the wealth of literature available to find reproducible and valid studies to incorporate into risk assessment? What criteria do we need to determine the utility of peer reviewed publications and public ontologies for risk assessment? How does the criteria change under TSCA reform and how might this influence our review? Although well established for epidemiology, fewer experiences are available for toxicology studies. Incorporations of mechanistic studies and in vitro data is even less clear. What is a PICO statement? What case studies are available and what lessons have been learned?

Course Learning Objectives:

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

- Define systematic review
- Discuss meta-analysis methods (Cochrane, Navigation, PRISMA, ect.) and how they are being applied for toxicology and risk assessment
- Determine what common vocabularies are needed to conduct systematic reviews and how example ontologies can contribute to this discussion
- Understand how new information requirements in TSCA reform can be addressed using systematic review
- Identify informative approaches for incorporation of non-traditional outcomes, such as in vitro and mechanistic research

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 (Links to an external site.) (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 at206-543-8924 or **uwdrs@uw.edu** (mailto:uwdrs@uw.edu) or **disability.uw.edu** (http://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 Systematic Review

- Introductions- All

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

Session 2: Guidelines for Systematic Review

- Introduction- Elaine Faustman

-Presentation of Key Points from Readings- Students

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

Session 2 and 3 Readings:

1. Hoffmann, S., et al., *A primer on systematic reviews in toxicology.* Archives of Toxicology, 2017. **91**(7): p. 2551-2575.

2. **http://handbook.cochrane.org/ (http://handbook.cochrane.org/)** , *Cochrane Handbook.* 2011.

3. **http://www.effectivehealthcare.ahrq.gov/index.cfm/search-for-guides-reviews-and-reports/?pageaction=displayproduct&mp=1&productID=318 (http://www.effectivehealthcare.ahrq.gov/index.cfm/search-for-guides-reviews-and-reports/?pageaction=displayproduct&mp=1&productID=318)** , *AHRQ Methods Guide for Effectiveness and Comparative Effectiveness Reviews* 2014.

4. **http://www.prisma-statement.org/Extensions/Protocols.aspx (http://www.prisma-statement.org/Extensions/Protocols.aspx)** , *PRISMA operationalized checklist.*

5. http://www.york.ac.uk/crd/SysRev/!SSL!/WebHelp/SysRev3.htm (http://www.york.ac.uk/crd/SysRev/!SSL!/WebHelp/SysRev3.htm) , *Systematic Reviews CRD's Guidance for undertaking reviews in health care.* 2009: p. 294.

6. https://ntp.niehs.nih.gov/pubhealth/hat/review/index-2.html, *OHAT procedures NTP.*

7. https://www.covidence.org/ (http://www.covidence.org/) , *Covidence Tool*

8. https://www.nap.edu/read/13059/chapter/1 (http://www.nap.edu/read/13059/chapter/1) , *Institutes of Medicine Standards for Systematic Reviews (Finding What Works in Health Care).*

9. https://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0077761/#cerguideobserve.rl1 (http://www.ncbi.nlm.nih.gov/pubmedhealth/PMH0077761/#cerguideobserve.rl1) , *Selecting Observational Studies for Comparing Medical Interventions.* 2010.

10. Liberati, A., et al., *The PRISMA Statement for Reporting Systematic Reviews and Meta-Analyses of Studies That Evaluate Health Care Interventions: Explanation and Elaboration.* PLoS Medicine, 2009. **6**(7): p. e1000100.

11. Lynch, H.N., et al., *Systematic comparison of study quality criteria.* Regulatory Toxicology and Pharmacology, 2016. **76**: p. 187-198.

12. Moher, D., et al., *Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement.* Systematic Reviews, 2015. **4**(1): p. 1.

13. Morgan, R.L., et al., *GRADE: Assessing the quality of evidence in environmental and occupational health.* Environment international, 2016. **92-93**: p. 611-616.

14. Ouzzani, M., et al., *Rayyan—a web and mobile app for systematic reviews.* Systematic Reviews, 2016. **5**: p. 210.

15. Rooney, A., et al., *Systematic Review and Evidence Integration for Literature-Based Environmental Health Science Assessments*. Vol. 122. 2014.

16. Rooney, A.A., et al., *How credible are the study results? Evaluating and applying internal validity tools to literature-based assessments of environmental health hazards.* Environment international, 2016. **92-93**: p. 617-629.

17. Schneider, K., et al., *“ToxRTool”, a new tool to assess the reliability of toxicological data.* Toxicology Letters, 2009. **189**(2): p. 138-144.

18. Shamseer, L., et al., *Preferred reporting items for systematic review and*

meta-analysis protocols (PRISMA-P) 2015: elaboration and explanation. BMJ : British Medical Journal, 2015. **349**.

19. Sheehan, M.C. and J. Lam, *Use of Systematic Review and Meta-Analysis in Environmental Health Epidemiology: a Systematic Review and Comparison with Guidelines.* Current Environmental Health Reports, 2015. **2**(3): p. 272-283.

20. Stroup, D.F., et al., *Meta-analysis of observational studies in epidemiology: A proposal for reporting.* JAMA, 2000. **283**(15): p. 2008-2012.

21. Vandenberg, L.N., et al., *A proposed framework for the systematic review and integrated assessment (SYRINA) of endocrine disrupting chemicals.* Environmental Health, 2016. **15**: p. 74.

22. Whaley, P., et al., *Implementing systematic review techniques in chemical risk assessment: challenges, opportunities and recommendations.* Environment international, 2016. **92-93**: p. 556-564.

Session 3: Continued Discussion of Guidelines for Systematic Review

- Introduction- Elaine Faustman

- Presentation of Key Points from Readings- Students

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

Session 2 and 3 Readings: See above

Session 4: Examples of Systematic Review

*Please read **one document** or sections of longer reports and **one example article** and be prepared to share the key points. Please also apply one of the guidelines discussed in the previous two classes to your article and assess what the authors did well and what should have been done differently.*

Session 4 Readings:

1. Beronius, A. and L.N. Vandenberg, *Using systematic reviews for hazard and risk assessment of endocrine disrupting chemicals.* Reviews in endocrine & metabolic disorders, 2015. **16**(4): p. 273-287.

2. Council, N.R., *Review of EPA's Integrated Risk Information System (IRIS) Process*. 2014, Washington, DC: The National Academies Press.

170.

3. https://ntp.niehs.nih.gov/pubhealth/hat/noms/pfoa/index.html, *Immunotoxicity Associated with Exposure to Perfluorooctanoic Acid (PFOA) or Perfluorooctane Sulfonate (PFOS).*

4. https://srdr.ahrq.gov/, *Systematic Review Data repository*

5. https://srdr.ahrq.gov/projects/published?page=1, *To see a list of Systematic Reviews.*

6. Pim Nicolaas Huberatus Wassenaar, L.T., and Juliette Legler, *Systematic Review and Meta-Analysis of Early-Life Exposure to Bisphenol A and Obesity-Related Outcomes in Rodents.*

7. Translation, O.o.H.A.a., *Draft Protocol for Systematic Review to Evaluate the Evidence for an Association between Bisphenol A (BPA) Exposure and Obesity.* 2013: p. 76.

8. Walker, V.R., et al., *Human and animal evidence of potential transgenerational inheritance of health effects: An evidence map and state-of-the-science evaluation.* Environ Int, 2018. **115**: p. 48-69.

Session 5: Applications to your own research

Please read one systematic review relevant to your research or find an article relevant for your research or interests and assess whether it includes the necessary information to be used in a systematic review. Please be prepared to share your findings in class. **Articles MUST be posted to the canvas site by MONDAY at 12PM!**

Course Summary:

Date	Details