

ENV H 593 A Sp 22: Current Topics In Risk Assessment



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Conceptual Models for Risk Framing

Spring Quarter 2022

2 Credits

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Dr. Elaine M. Faustman (pronouns: she/her/hers), 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 (ISC) 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 ISC CODATA Citizen Sciences Task group. 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.

Course Times and Locations:

- **Day/Time: Tuesday's from 1:30 pm - 3:20 pm**
- **Location: HST T635 and Zoom**
- [Course Syllabus](#)

Course Description:

Risk Assessment is used in many situations and each application requires an understanding of the conceptual models that support these specific applications. To better understand how these conceptual models are developed we will explore various applications in this course. Success of such models can be evaluated by determining how closely aligned the models are to the risk questions they are designed to answer. We will explore such models across international agencies such as WHO and FAO as well as country and regional specific constructs. Both qualitative and quantitative models will be presented, investigated and evaluated. In particular, evaluation will focus on how they are used in the field by using a set of case studies to experience input and output examples. Based on student interests declared on the first day of class, we may modify the course sequence to maximize participant interest. Note that both readings, class room demonstrations and case studies will provide enrolled students the opportunity to explore their interest areas as well as to gain experience in their functional application. We look forward to these interactions!

Spring 2022 Learning Objectives:

1. Learning how risk assessments are framed across application.
2. Understanding conceptual models used to identify mechanisms of Environmental Impacts.
3. Accessing tools and resources for developing new conceptual models.
4. Examine risk assessments using Ecological Conceptual Models.
5. Accessing tools and resources incorporating zoonotic disease models into JRA based One Health risk models.
6. Thinking critically about equity, diversity and inclusion and how our conceptual models can set the stage for these discussions and evaluations.
7. Learn how value chain models can incorporate economic drivers to support Social Behavior Change.

Additional Learning Objectives:

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.

Course Requirements

Reminder this class is a journal club so please come to each session prepared to share your reading reports with your colleagues. Please use the “Article/ White paper Report Form Template” to structure your review. Please share a few slides that highlight your points. Remember that others in the class room will not have necessarily read the same papers so include enough information to allow them to have context for your report. We will always be able to pull up the original article but sometimes your tailored slides facilitate the discussion.

You will be requested to review one of the readings/ articles for each class and to complete 5 of the article report forms. If you will be missing class, please send your review by email.

You will also, by the end of the class, be requested to complete one Case Study report. Total page limits for this assignment is 3 pages double spaced. We will discuss further in class the purpose and intent of this report.

Grading:

- **50% Weekly Discussion Participation and Related Assignments:** Weekly summations and presentation of key points from readings and respectful engagement in substantive in-class discussions. At the end of the weekly discussion please send through a few sentences that summarize your comments during class on other student or instructor presented materials.
- **25% FIVE Article Reports** - See the template at the end of the syllabus and limit your responses to 2 pages double spaced. Reports will be graded for completeness and thoughtfulness. Reports should be submitted on Canvas each week one day before class starts. Please post the article you selected on the Canvas Discussions Page. You will need to submit five Article Reports throughout the quarter.
- **25% In-Class Presentation and case report** – Choose one of the conceptual frameworks and discuss how it relates to your research or interest area. It is anticipated that you will integrate the discussion of the conceptual frameworks across papers that are discussed in class or that you may

have found in addition to class discussion. In some cases, maybe your research doesn't fit into any of the frameworks so in that case present comments on why it doesn't fit and if you could suggest an alternative or new framing. Please use the outline provided to facilitate/ order your comments. Please limit your response to 3 pages double spaced. You will be required to submit ONE case study report on Canvas for the quarter. In addition to the report, please prepare a brief presentation (about 10 minutes) with 2-3 figures/tables to support your observations and to share with the class.

Land Acknowledgment:

Washington State is [home](https://www.washingtontribes.org/tribes-map) [_ \(https://www.washingtontribes.org/tribes-map\)](https://www.washingtontribes.org/tribes-map) to 29 federally recognized and five unrecognized tribes. We hope to demonstrate our collective humility and respect for the original caretakers of the land that the School of Public Health sits on. We encourage students to find out who the original settlers of the land they are on to encourage deeper understanding and solidarity with indigenous people.

The University of Washington acknowledges the Coast Salish people of this land, the land which touches the shared waters of all tribes and bands within the Duwamish, Suquamish, Tulalip, and Muckleshoot nations.

Academic Integrity:

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](https://sph.washington.edu/students/academic-integrity-policy) [_ \(https://sph.washington.edu/students/academic-integrity-policy\)](https://sph.washington.edu/students/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.

Statement on Inclusion and Diversity:

Diverse backgrounds, embodiments and experiences are essential to the critical thinking endeavor at the heart of University education. In SPH, we are expected:

1. To respect individual differences, which may include, but are not limited to, age, cultural background, disability, ethnicity, family status, gender identity and expression, citizenship and immigration status, national origin, race, religion, sex, sexual orientation, socioeconomic status and veteran status.
2. To engage respectfully in the discussion of diverse worldviews and ideologies embedded in course readings, presentations, and artifacts, including those course materials that are at odds with personal beliefs and values.

On our first day of class we will create ground rules together to follow in promoting a productive learning environment for all members of the class. I am committed to making this class an equitable learning

environment. Please talk with me right away if you experience disrespect in this class from other students and/or from me, and I will work to address it in an educational manner.

UW School of Public Health Equity Diversity and Inclusion Statement:

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 Soul Catcher 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](http://sph.washington.edu/about/soulcatcher.asp) [_\(http://sph.washington.edu/about/soulcatcher.asp\)_](http://sph.washington.edu/about/soulcatcher.asp).

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.

Statement on Classroom Climate [_\(https://www.washington.edu/teaching/topics/engaging-students-in-learning/responding-to-disruptions-in-the-classroom/\)_](https://www.washington.edu/teaching/topics/engaging-students-in-learning/responding-to-disruptions-in-the-classroom/):

We are co-creators of our learning environment. It is our collective responsibility to develop a supportive learning environment for everyone. Listening with respect and an open mind, striving to understand others' views, and articulating your own point of view will help foster the creation of this environment. We engage our differences with the intent to build community, not to put down the other and distance our self from the other. Being mindful to not monopolize discussion and/or interrupt others will also help foster a dialogic environment.

The following guidelines can add to the richness of our discussion:

- We assume that persons are always doing the best that they can, including the persons in this learning environment.
 - We acknowledge that systematic oppression exists based on privileged positions and specific to race, gender, class, religion, sexual orientation, and other social variables and identities.
 - We posit that assigning blame to persons in socially marginal positions is counter-productive to our practice. We can learn much about the dominant culture by looking at how it constructs the lives of those on its social margins.
 - While we may question or take issue with another class member's ideology, we will not demean, devalue, or attempt to humiliate another person based on her/his experiences, value system, or construction of meaning.
 - We have a professional obligation to actively challenge myths and stereotypes about our own groups and other groups so we can break down the walls that prohibit group cooperation and growth.
- [Adapted from Lynn Weber Cannon (1990). Fostering positive race, class, and gender dynamics in the classroom. *Women Studies Quarterly*, 1 & 2, 126-134.]

We are a learning community. As such, we are expected to engage with difference. Part of functioning as a learning community is to engage in dialogue in respectful ways that supports learning for all of us and that holds us accountable to each other. Our learning community asks us to trust and take risks in being vulnerable.

Here are some guidelines that we try to use in our learning process:

- LISTEN WELL and be present to each member of our group and class.
- Assume that I might miss things others see and see things others 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.
- Extend the same listening to others I would wish them to extend to me.
- Surface my feelings in such a way that I make it easier for others to surface theirs.
- Regard my views as a perspective onto the world, not the world itself.
- Beware of either-or thinking.
- Beware of my assumptions of others and their motivations.
- Test my assumptions about how and why people say or do things.
- Be authentic in my engagement with all members of our class.

Reporting Learning Environment Concerns:

The Office of the Dean has a [student concern policy](https://sph.washington.edu/students/student-concern-policy) [_ \(https://sph.washington.edu/students/student-concern-policy\)](https://sph.washington.edu/students/student-concern-policy), a faculty concern policy and standard HR procedures for staff concerns. Students are encouraged to report any incidents of bias in any of the following ways:

- Report the incident to someone they feel comfortable with (including teaching staff, adviser or department staff) or directly inform the SPH Assistant Dean for Equity, Diversity & Inclusion Dr. Victoria Gardner at vg@uw.edu.

- Email [dcinfo@uw.edu \(mailto:dcinfo@uw.edu\)](mailto:dcinfo@uw.edu) to file a non-anonymous, confidential report (tracked by Director of Student and Academic Services and Assistant Dean of Equity, Diversity & Inclusion) or
- Send an anonymous and confidential report using the bias concern form [here \(https://catalyst.uw.edu/webq/survey/vg/375764\)](https://catalyst.uw.edu/webq/survey/vg/375764). Report is received by the Assistant Dean for EDI and the Director of Program Operations for Student and Academic Services and tracked for investigation and/or resolution. Reporter can remain completely anonymous but will not receive a response.

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 are 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 \(mailto:uwdrs@uw.edu\)](mailto:uwdrs@uw.edu) or [disability.uw.edu. \(http://depts.washington.edu/uwdrs/\)](http://depts.washington.edu/uwdrs/) 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.

Religious accommodations:

Washington state law requires that UW develop a policy for accommodation of student absences or significant hardship due to reasons of faith or conscience, or for organized religious activities. The UW's policy, including more information about how to request an accommodation, is available at [Religious Accommodations Policy \(https://registrar.washington.edu/staffandfaculty/religious-accommodations-policy/\)](https://registrar.washington.edu/staffandfaculty/religious-accommodations-policy/). [\(https://registrar.washington.edu/staffandfaculty/religious-accommodations-policy/\)](https://registrar.washington.edu/staffandfaculty/religious-accommodations-policy/). Accommodations must be requested within the first two weeks of this course using the [Religious Accommodations Request form \(https://registrar.washington.edu/students/religious-accommodations-request/\)](https://registrar.washington.edu/students/religious-accommodations-request/). [\(https://registrar.washington.edu/students/religious-accommodations-request/\)](https://registrar.washington.edu/students/religious-accommodations-request/).

Pronouns:

According to the UW First Year Programs, being an ally is not just about intention, it is also about behavior. We share our pronouns because we strive to cultivate an inclusive environment where people of all genders feel safe and respected. We cannot assume we know someone's gender just by looking at them. So we invite everyone to share their pronouns.

COVID-Related Expectations

Per UW policy, this class will be conducted in person. We will be providing both synchronous as well as asynchronous access to the course however; a large portion of this course is real time dialogue and discussion with our DOE colleagues. Please notify the instructor when you anticipate missing the synchronous dialogue available via Zoom and in class participation. We will arrange jointly with the course participants how to fulfill the course requirements if synchronous access cannot be achieved.

Please contact UW Disability Resources for Students (DRS) directly if you feel you may be eligible for an accommodation based on your status as an immunocompromised individual or based on other diagnosed physical or mental health conditions that might prevent you from being able to take classes in-person.

If you are a student enrolled in a program in SPH, and you are either living with an individual who is immunocompromised, OR you are unable to obtain a visa to travel to the US, you may be eligible for a “special arrangement” that will allow you to take this course remotely. Requests for special arrangements to take the class remotely should have been submitted to and approved by the Students and Academic Services team in the Office of the Dean before the beginning of the quarter. If you have questions about this type of arrangement, please reach out to Student and Academic Services by email at sphas@uw.edu.

All UW students are expected to complete their vaccine attestation before arriving on campus and to follow the campus-wide face-covering policy at all times. You are expected to follow state, local, and UW COVID-19 policies and recommendations. If you feel ill or exhibit possible COVID symptoms, you should not come to class. If you need to temporarily quarantine or isolate per CDC guidance and/or campus policy, you are responsible for notifying your instructors as soon as possible by email. If you receive a positive COVID-19 test result, you must report to campus Environmental Health & Safety (EH&S) by emailing covidehc@uw.edu or calling 206-626-3344.

Food is not allowed in the classroom. Drinks may be sipped with lifting or removal of your facemask for a brief moment, and immediate re-masking after drinking.

Please check your email daily BEFORE coming to class. If we need to conduct class remotely because the instructor or a guest speaker is complying with UW policies and unable to attend in person, we will send all registered students an email with a Zoom link for remote instruction. Thank you for your patience and support as we all transition together back to in-person learning!

To help facilitate covid safety, we ask students to please return to the same seat each class period unless instructed to change by an instructor. This will aid in learning each other's names as well as safety for close-contacts in the classroom.

Weekly Discussion points:

Please share a few sentences that is taken from your comments during our class discussion. This assignment is to help track your insights on the articles and discussion that occur as a regular part of each session. You can miss two discussion posts per quarter. There is not a form for this assignment.

Please submit after each session and before the next session so your instructor can tack your input. You will note an assignment request in that section of the canvas interface.

Article/ White Paper Report Form Template:

**PLEASE LIMIT RESPONSES TO 2 PAGES DOUBLE SPACED PLUS SLIDES TO SHARE (Approx. 3 slides). Prepare 5 of these over the quarter.*

Date:

Reviewer Name:

Title, Author(s), and Date of Paper

- What was the purpose of this paper?
- What conceptual framing/methods did the author use?
- What were the key results?
- What key issues does the author(s) cite in the discussion?
- How does this article contribute to today's discussion topic?

Case Study Report:

**PLEASE LIMIT RESPONSES TO 3 PAGES DOUBLE SPACED PLUS SLIDES TO SHARE*

Date:

Reviewer Name:

Title, Authors, and Date of Paper:

- What was the purpose of your case study?
- What are your observations regarding using this framework or conceptual diagram for your research/ interest areas?
- Critic the conceptual framework, could you improve it for your use? Does it allow your research to be magnified, recognized?
- Make sure you identify critical data gaps.

Course Schedule:

<u>Session #</u>	<u>Date</u>	<u>Topic</u>	<u>Readings</u>
Session 1	03/29/22	Statement of Interests Demonstration of useful tools for diagraming	No Required Readings prior to first session.

Session 2	04/05/22	Understanding conceptual risk framing models used in identifying Mechanisms of Action (MOA) and Adverse Outcome Pathways (AOP) Introduction of course and class participants.	Materials will be posted immediately following the first session of the course
Session 3	04/12/22	Ecological Conceptual Models	Student to post chosen article on discussion board.
Session 4	04/19/22	Ecological Models for Decision Making; Examining Environmental Impacts on Species Diversity	Student to post chosen article on discussion board.
Session 5	04/26/22	Tripartite Joint Risk Assessment framing (JRA) integrating World Health Organization (WHO), Food and Agricultural Organization (FAO) and One Health (OIE) conceptual models into action for zoonotic spillover risks Case Studies	Student to post chosen article on discussion board.
Session 6	05/03/22	Continued case studies for JRA	Student to post chosen article on discussion board.
Session 7	05/10/22	Value Chain and Food Security Models	Student to post chosen article on discussion board.
Session 8	05/17/22	Using conceptual models to incorporate citizen and stakeholder impact to "make a difference". Case Studies with climate change and gender inequity	Student to post chosen article on discussion board.
Session 9	05/24/22	Case Studies 1 from Student work	

Session 10	05/31/22	Case Studies 2 from Student work	No Required Readings
Summary of Course			

Topics and References

No Readings required prior to the first session