

Course Syllabus

[Jump to Today](#)

 [Edit](#)

ENV H 439 and 539: One Health: Human and Animal Health in a Changing Environment

Spring Quarter 2021

Day/time: MW 11:30-1:00 PM

By zoom meeting. <https://uw-phi.zoom.us/j/99787322633> (<https://uw-phi.zoom.us/j/99787322633>)

INSTRUCTOR:

Peter M. Rabinowitz MD MPH

Professor; Environmental and Occupational Health Sciences, Global Health, Family Medicine, Epidemiology (adjunct), Allergy and Infectious Diseases (adjunct)

Pronouns He, Him, His

Email: peterr7@uw.edu (<mailto:peterr7@uw.edu>)

<mailto:peterr7@uw.edu> Office Hours: By appointment. Contact Vickie Ramirez (ramirezv@uw.edu <mailto:kconery@uw.edu>) to schedule appointments by zoom.

TA:

Erin Tabor

Pronouns: She/her/hers

Email: ertabor@uw.edu (<mailto:ertabor@uw.edu>)

Office Hours: Tuesdays 12:30pm-1:30pm or by appointment

GUEST SPEAKERS:

- **Marguerite Pappaioanou DVM, MPVM, PhD**, Affiliate Professor, DEOHS
- **Darin Collins**, DVM, Director, Animal Health Programs, Seattle Woodland Park Zoo
- **Gemina Garland-Lewis**, MS in Conservation Medicine, Research Coordinator, Center for One Health Research, UW
- **Robert M. Liddell**, MD, Medical Director & Musculoskeletal/Body Radiologist, Center for Diagnostic Imaging, Inc.
- **Sally Thomson-Iritani**, DVM, PhD, CPIA, UW Department of Comparative Medicine
- **Lisa Dabek**, PhD, Program Director and Senior Conservation Scientist, Woodland Park Zoo
- **Mary Margaret Callahan**, Senior National Director of Program Development at Pet Partners, where she oversees the Therapy Animal Program which registers nine different species
- **Yona Sipos**, PhD, Department of Nutrition
- **Kevin Bardosh**, PhD, Department of Environmental and Occupational Sciences (affiliate)
- **Daniel Promislow** PhD, UW Department of Genetics

- **Casey MacClean**, Director, Sealife Rescue, Rehabilitation, Research (SR3)

COURSE DESCRIPTION: One Health is a field that employs a multi-disciplinary approach to address the inextricable links between human health, animal health, and ecosystem health in order to achieve optimal health for all. One Health incorporates multiple perspectives to assess the underlying causes of complex "wicked" health challenges in order to develop effective "win-win" solutions. Using a case-based approach, the course will follow the ECOHAB acronym for human-animal-ecosystem health connections: (EXPOSURES to zoonotic infectious diseases and other biological, chemical, and physical hazards, COMPARATIVE clinical similarities between humans and animals, OCCUPATIONAL aspects of working with animals, the HUMAN-ANIMAL-NATURE BOND, AGRICULTURE and food systems, and BIODIVERSITY).

LEARNING OBJECTIVES (Joint 439 and 539)

Upon completion of this course, students will be able to:

1. Explain from an ecological perspective at least six types of connections between human, animal, and ecosystem health, following the acronym ECOHAB (Exposures, Comparative, Occupational, Human Animal-Nature Bond, Agriculture/food, Biodiversity).
2. Be able to explain these connections at different levels of system complexity ranging from a micro level to a macro (Planetary) level, and create concept maps of these system interactions using digital concept mapping tools.
3. Exposure connections:
 1. Identify at least three zoonotic diseases and explain the human, animal, and environmental aspects of their disease impact, prevention and control.
 2. Identify at least 3 reasons why animals can be sentinels for human environmental health hazards.
4. For Comparative connections:
 1. Be able to compare the natural history of a chronic disease in at least three species
 2. Explain the value of a species-spanning approach as opposed to only focusing on human health.
5. For Occupational connections:
 1. Describe the major types of animal work globally.
 2. Describe at least 3 unique aspects of work involving animals.
6. Human-Animal-Nature Bond:
 1. Identify 4 health effects associated with the human-animal-nature bond.
 2. Describe how this bond can be leveraged when addressing disease or other health conditions in clinical or public health settings.
7. Agriculture/Food systems

1. Describe key aspects of global food production systems from a One Health / Planetary Health perspective.
 2. Be able to propose a One Health approach to a problem faced in urban farming.
8. Biodiversity:
1. Describe the importance of biodiversity to global and planetary health, including the role of pollinators and disease dynamics.
 2. Describe the relationship between ecosystem biodiversity and the human microbiome. how the One Health approach can promote biodiversity
9. Describe how to work in "interprofessional" teams including human, animal, and environmental health specialists and identify the health issues relevant to that specialty but also how to work with other specialists in an interprofessional model using skills such as systems thinking, conflict resolution, inter-professional communication, and ethics, .
10. For at least 3 different One Health scenarios, outline the relative roles of human health, animal health , and environmental health professionals/officials.
11. Define a a"wicked" health problem and describe at least three benefits of using a One Health approach (as opposed to conventional single sector approaches) to address today's "wicked" health challenges.
12. Describe at least three barriers to employing a One Health approach to address today's "wicked" health challenges, and options for overcoming these barriers.

GRADUATE LEVEL LEARNING OBJECTIVES (539 only)

Upon completion of the course, graduate students will be able to:

1. Prepare and give a presentation on an application of a particular One Health connection. Lead and facilitate the discussion about this problem, describing the human, animal, and environmental health aspects of the proposed activity, including specific and practical recommendations for an integrated One-Health strategy to address the issue.

TEXTS and REFERENCES

There is no required textbook. **The primary recommended text for this course will be: *Human-Animal Medicine: Clinical Approaches to Zoonoses, Toxicants and Other Shared Health Risks* by Peter M. Rabinowitz and Lisa A. Conti. Saunders: Elsevier Press, New York.** This text book will be on reserve at the Health Sciences Library and at the COHR suite. It is available for purchase online. An electronic version will also be available through the Health Sciences Library.

Additional reading assignments and course materials, such as videos, websites, pdfs of lecture presentations, will be posted as assignments on the Canvas site. Students are responsible to complete assigned readings before class time.

In addition, the following books, reports, and journals are additional recommended references for the material presented in this course. The books are available for reading in the Center for One Health

(COHR) lab office (there is no option for checking them out—all reading must be done in the COHR lab. The Reports listed below can be readily accessed for free online.

Books

- *One Health: People, Animals, and the Environment*. 2014. Ron Atlas and Stanley Maloy, Eds. ASM Press
- *Confronting Emerging Zoonoses: The One Health Paradigm*. 2014. Yamada, A., et al. (Eds) Springer, New York, NY
- *Zoobiquity: The Astonishing Connection Between Human and Animal Health*. 2013. Barbara Natterson-Horowitz, B, Bowers K. Vintage Press.
- *One Health: The Human-Animal-Environment Interfaces in Emerging Infectious Diseases*. 2013. Mackenzie, J.S., et al (Eds.) Springer, New York, NY
- *Spillover: Animal Infections and the Next Pandemic*. 2012. David Quammen. WW Norton and Company. New York.
- *One Health: Science, Politics, and Zoonotic Disease in Africa*. 2016. Bardosh K (ed.). Routledge: New York.

Reports (available for free online)

- WHO/FAO/OIE: A Tripartite Guide to Addressing Zoonoses in Countries 2019. Available at : <https://extranet.who.int/sph/sites/default/files/document-library/document/Tripartite-Guidance-EN-web%20single%20page.pdf> (<https://extranet.who.int/sph/sites/default/files/document-library/document/Tripartite-Guidance-EN-web%20single%20page.pdf>)
- National Research Council (US) Committee on Achieving Sustainable Global Capacity for Surveillance and Response to Emerging Diseases of Zoonotic Origin; Editors: Gerald T. Keusch, Marguerite Pappaioanou, Mila C. Gonzalez, et al. 2009. National Academies Press (US): Washington DC. (Available online at NAS, can be downloaded)
- Safeguarding human health in the Anthropocene epoch: report of The Rockefeller Foundation–Lancet Commission on planetary health. The Lancet, Vol. 386, No. 10007 (Available online)

Recommended Journals (available online through UW libraries)

- One Health Journal
- International Journal of One Health
- Emerging Infectious Diseases
- Lancet
- Lancet Planetary Health
- Environmental Health Perspectives
- EcoHealth
- PLoS One

CLASS PARTICIPATION: Class sessions will include lectures and group discussions focused around case-studies focused on illustrative One Health challenges. Successful participation in this course will

require completion of required readings ahead of class, class participation that includes sharing experiences, asking and or answering questions in class, and taking exams in class.

Although attendance in lectures is not expressly required, students are encouraged and expected to participate in classroom discussions during lecture sessions and group problem solving sessions, having fully prepared for class by completing assigned readings before class.

Policy on Use of Computers and smart phones in course: This course will use interactive technology, and allow the use of computers and smart phones during the case discussions.

Lucid chart software provides a resource for concept mapping that will be helpful for the students who are preparing presentations. This software is available free of charge through UW student Google drive, and this will be explained on the first day of class.

Students are expected not to abuse these privileges by using technology for personal activities such as email and social media during class sessions. Failure to abide by these guidelines will affect the participation grade for a particular student and make the instructor reconsider this policy in the future. All students are expected to come to class having read the assigned readings and prepared to actively contribute to the discussion.

CLASSROOM CLIMATE, DIVERSITY, INCLUSION, AND RESPECT

Diverse backgrounds, embodiments, and experiences are essential to the critical thinking endeavor at the heart of university education, including at the heart of One Health. Therefore, we expect you to follow the UW Student Conduct Code in your interactions with your colleagues and me in this course by respecting the many social and cultural differences among us, which may include, but are not limited to: age, cultural background, disability, ethnicity, family status, gender identity and presentation, citizenship and immigration status, national origin, race, religious and political beliefs, sex, sexual orientation, socioeconomic status, and veteran status.

We acknowledge from the beginning that all of us, including your instructor, TA and guest lecturers, have a lot to learn about combatting racism, sexism, classism, and other forms of discrimination and bias, and that this learning process will continue throughout our careers. We are committed to supporting and ensuring a respectful, open, positive, inclusive classroom climate. Please reach out to talk with the instructor immediately if you experience disrespect in this class, and I will work to promptly address it in a constructive, educational manner, while assuring privacy. Please note that DCinfo@uw.edu is a resource for students with classroom climate concerns. UW students can also report incidents of bias or violations of UW policies for non-discrimination using the Bias Reporting Tool available at:

<http://www.washington.edu/bias/> (<http://www.washington.edu/bias/>). Another option for communicating concerns would be to contact the Graduate Program Coordinator (Dr.Scott Meschke, jmeschke@uw.edu (<mailto:jmeschke@uw.edu>)) or Trina Sterry, the Graduate Program Advisor (tsterry@uw.edu (<mailto:tsterry@uw.edu>)).

COURSE FORMAT: The course is divided into the following 6 modules: 1) Introduction to One Health Systems (micro to planetary); 2) Exposure Connections between systems; 3) Comparative health connections between systems 4) Occupational connections 5) Human-Animal-Nature Bond Connections; 6) Agriculture/Food connections, and 7) Biodiversity connections.

Following the introductory module, we will plan to cover these modules consecutively.

1. Lectures: Given the need to shift to online learning, the lectures will be a cornerstone of the course. Each connection module will include lecture sessions that provides an overview of the topic and adds information and perspective to that provided by the required readings. The modules will include in-class group discussion focused on thought-provoking questions that reinforce the material presented in readings and lecture. Technology allowing, the lectures will be recorded and saved.

CLASS SCHEDULE: See [the Modules Page](#) for a session-by-session schedule of lectures and assignments.

GRADING OPPORTUNITIES: This course is offered on a standard graded basis. The instructor will provide evaluation-grading rubrics (based on the course learning objectives) in advance for all major assignments.

The overall grade in the course is comprised of the following components:

1. Quizzes:5@6% each (30% total)
2. Midterm exam -- 25%
3. individual project/presentation: 15%
4. Final exam-- 30%

Quizzes (5 @6%: total 30%): There will be a quiz on five of the six connection modules (module 6 will be covered in the midterm). These quizzes will be administered in class during a class period. Questions may include short answer/essay, true/false, and multiple choice. There will be a Quizlet to assist in studying. Except for documented emergencies that are excused, students will expected to take the quiz during class time (unless approved asynchronously).

Midterm (25%): The midterm quiz will be administered in class during a class period. Questions may include short answer/essay, true/false, and multiple choice.

Final Exam (30%): The final exam will administered during finals week at the designated time during exam week. Questions may include short answer/essay, true/false, and multiple choice.

Individual project/presentation (15%):

439 Students will work as a team to research a "Connection in Practice" for one of the six One Health connection modules. They will provide this research in the form of a writeup to the 539 student coordinating the presentation so that it can be an integrated One Health approach. 539 students will also give the class presentation about the Connection and lead a discussion. 439 students will turn in

their write-up a week before the presentation (to allow for 539 presentation preparation). Late assignments will be marked down.

ADDITIONAL COURSE GUIDELINES

1. Get on line during the scheduled class time, and please notify the instructor ahead of time if you cannot make it.
2. Come to lectures having completed assigned readings, and prepared to ask questions about the topic/reading material.
3. Be courteous, refrain from unnecessary talking, mute microphone if not talking etc. .
4. Share relevant experiences, perspectives, ASK QUESTIONS!
5. Let the instructor and/or TA know if you feel the class is moving too fast, too slow, or not being clear.
6. Let the instructor know if you are having difficulties with your group in terms of technology, or other course logistics.

ACADEMIC INTEGRITY

Students at the University of Washington 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](http://sph.washington.edu/students/academicintegrity/) (<http://sph.washington.edu/students/academicintegrity/>). 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.

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/>). 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/>).

ACCESS AND ACCOMMODATIONS

The student experience in this class is important to the instructors. An important policy and practice of the University of Washington is to create inclusive and accessible learning environments consistent with federal and state law.

Students are asked and expected to establish accommodations with the Disability Resources for Students (DRS--at 206-543-8924 or uwdrs@uw.edu (<mailto:uwdrs@uw.edu>)) or disability.uw.edu

(<http://depts.washington.edu/uwdrs/>), and then communicate all approved accommodations to the instructor at the earliest opportunity. 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 the student, instructor and DRS. Qualifying conditions could include but are not limited to mental health, attention-related disabilities, learning disabilities, vision, hearing, physical or health impacts.

Upon learning of approved accommodations by DRS, we can discuss student needs in this course. If students have not yet established services through DRS, but have a temporary health condition or permanent disability that requires accommodations, students are encouraged to contact DRS at 206-543-8924 or uwdrs@uw.edu (<mailto:uwdrs@uw.edu>) or [disability.uw.edu](http://depts.washington.edu/disability.uw.edu) (<http://depts.washington.edu/uwdrs/>), as soon as possible.

Course Summary:

Date	Details	Due
Mon Mar 29, 2021	 Preparation for Session 1 https://canvas.uw.edu/courses/1449278/assignments/6184296	due by 11:59pm
Wed Mar 31, 2021	 Preparation for Session 2 https://canvas.uw.edu/courses/1449278/assignments/6086701	due by 8:30am
Mon Apr 5, 2021	 Preparation for Session 3 https://canvas.uw.edu/courses/1449278/assignments/6086702	due by 8:30am
	 Quiz 1 - 4/5/21 https://canvas.uw.edu/courses/1449278/assignments/6260828	due by 12:55pm
Wed Apr 7, 2021	 Preparation for Session 4 https://canvas.uw.edu/courses/1449278/assignments/6086703	due by 8:30am
	 Quiz 1 - 4/5/21 https://canvas.uw.edu/courses/1449278/assignments/6260828 (2 students)	due by 11:30am
Mon Apr 12, 2021	 Preparation for Session 5 https://canvas.uw.edu/courses/1449278/assignments/6086704	due by 8:30am
Wed Apr 14, 2021	 Quiz 2 - 4/14/21 https://canvas.uw.edu/courses/1449278/assignments/6277494	due by 12:55pm

Date	Details	Due
Fri Apr 16, 2021	 Quiz 2 - 4/14/21 https://canvas.uw.edu/courses/1449278/assignments/6277494 due by 11:59pm (2 students)	
Mon Apr 26, 2021	 Midterm https://canvas.uw.edu/courses/1449278/assignments/6086692	due by 9:50am
	 Quiz 3 - 4/26/21 https://canvas.uw.edu/courses/1449278/assignments/6296008	due by 12:55pm
Wed Apr 28, 2021	 Quiz 3 - 4/26/21 https://canvas.uw.edu/courses/1449278/assignments/6296008 due by 11:30am (1 student)	
Mon May 3, 2021	 Midterm - 5/3/21 https://canvas.uw.edu/courses/1449278/assignments/6304040	due by 12:50pm
Wed May 5, 2021	 Midterm - 5/3/21 https://canvas.uw.edu/courses/1449278/assignments/6304040 due by 1:20pm (1 student)	
	 Midterm https://canvas.uw.edu/courses/1449278/assignments/6314882	due by 1:25pm
Tue Jun 1, 2021	 Final Exam https://canvas.uw.edu/courses/1449278/assignments/6086687	due by 12:10pm
Wed Jun 2, 2021	 439 Connections in Practice Individual Assignment https://canvas.uw.edu/courses/1449278/assignments/6086691	due by 11:59pm
	 539 Connections in Practice Individual Assignment https://canvas.uw.edu/courses/1449278/assignments/6214991	due by 11:59pm
	 539 Connections in Practice Slides https://canvas.uw.edu/courses/1449278/assignments/6285659	due by 11:59pm
	 Final Exam https://canvas.uw.edu/courses/1449278/assignments/6086690	

Date	Details	Due
	 Midterm Review Sheet (https://canvas.uw.edu/courses/1449278/assignments/6086693)	
	 Preparation for Session 10 (https://canvas.uw.edu/courses/1449278/assignments/6086694)	
	 Preparation for Session 12 (https://canvas.uw.edu/courses/1449278/assignments/6086695)	
	 Preparation for Session 13 (https://canvas.uw.edu/courses/1449278/assignments/6086696)	
	 Preparation for Session 14 (https://canvas.uw.edu/courses/1449278/assignments/6086697)	
	 Preparation for Session 15 (https://canvas.uw.edu/courses/1449278/assignments/6086698)	
	 Preparation for Session 16 (https://canvas.uw.edu/courses/1449278/assignments/6086699)	
	 Preparation for Session 17 (https://canvas.uw.edu/courses/1449278/assignments/6086700)	
	 Preparation for Session 6 (https://canvas.uw.edu/courses/1449278/assignments/6086705)	
	 Preparation for Session 7 (https://canvas.uw.edu/courses/1449278/assignments/6086706)	
	 Preparation for Session 8 (https://canvas.uw.edu/courses/1449278/assignments/6086707)	
	 Preparation for Session 9 (https://canvas.uw.edu/courses/1449278/assignments/6086708)	
	 Quiz 2 May 20th (https://canvas.uw.edu/courses/1449278/assignments/6086688)	
	 Quiz One April 13 (https://canvas.uw.edu/courses/1449278/assignments/6086689)	

Date	Details	Due
	 Session 19 (Wednesday, June 2): Wrap-up, Other courses, Careers, Final Exam review (https://canvas.uw.edu/courses/1449278/assignments/6086709)	
	 test (https://canvas.uw.edu/courses/1449278/assignments/6086710)	
	 Vocab list for Quiz 1 (https://canvas.uw.edu/courses/1449278/assignments/6086711)	