Course Syllabus
Winter Quarter 2016

This course explores zoonotic and vector-borne diseases of current importance in Public Health, and the role that animals play as reservoirs, hosts and vectors -- both locally and globally. We also will explore the general approaches and methods used to control common Public Health vectors of disease.

Meeting Times and Locations:

10:30 - 11:20 a.m., Monday, Wednesday & Friday
Room T-359, Health Sciences Center

Instructor:

Charles D. (Chuck) Treser, MPH, DAAS
        Principal Lecturer
        Dept. of Env. & Occ. Health Sciences
Office: F-561A Health Sciences Center
Office Hours: 9:00-10:00 a.m. MWF; 9:00 - 11:00 Tue. & Thurs.; and
                1:30 - 3:30 p.m., Monday - Friday
Email: ctreser@u.washington.edu
Telephone: 206-616-2097

Course Description:

From the dawn of human history until the present day humans and animals around the world have been sharing their pathogens and diseases. Typhus, Yellow Fever, Malaria, Bubonic Plague, Dengue, etc. have all affected the course of history and their causative agents continue to be present in our environment, along with new "plagues" like Hantavirus, Lyme Disease and West Nile Virus.

This course takes a global perspective as once local diseases or newly emerging diseases can be rapidly spread around the world thanks to our increasingly mobile population and the swift movement of goods and services around the globe.

Zoonotic diseases are diseases affecting human populations in which one or more animals play a significant role in their causation or transmission. Many diseases involve an intermediary living organism or vector which plays an important role in the transmission cycle between the pathogenic organism and the human victim. This course examines zoonotic and vector-borne disease of historic and current importance in the United States and around the world. We will study the impact of rodent and arthropod vectors of disease — including those of historical importance as well as endemic and emerging diseases.

Identification, surveillance and control methods will be examined with attention paid to pesticide use, regulation and safety measures.

Course Objectives:

It is intended that at the completion of this course, each student should be able to:

1. describe, in general terms, the cause(s), signs, symptoms, and importance of the zoonotic or vector borne diseases of public health significance -- regionally, nationally and internationally;

2. identify the major species of rodents (rats and mice) that are important from a public health perspective and describe the geographic range and distribution patterns for each;

3. describe the behavioral characteristics of rodents related to the identification and control of rodent problems;

4. identify rodent signs, indicating the species and extent of a rodent infestation;

5. describe the characteristics of a community rodent control program and the steps in planning and implementing a program and conducting a rat survey;

6. conduct an urban rodent survey and analyze the results;

7. describe the life cycle, anatomy, role in disease transmission, and control measures for: mosquitoes and other flies, cockroaches, ticks, lice and fleas;

8. describe the typical habitats preferred by important arthropod disease vectors and relate this information to arthropod identification and control;

9. define Integrated Pest Management (IPM) and use IPM principles to design and carry out an appropriate surveillance, monitoring and control program for at least one zoonotic or vector-borne disease problem;

10. describe the physical form, mode of entry, application, and the mode of action for major pesticides used in public health vector control;

11. describe the role of state and federal agencies in regulating pesticides and the legislation regulating pesticides; and, and,

12. describe and follow the safety measures necessary in the use of particular pesticides in order protect non-target organism (including humans) and the environment.

Course Requirements & Polices:

1. Grades: Your course grade will be based on the total number of points you accumulate during the quarter: points accumulated divided by the total number of points possible. See the Faculty Resource on Grading (Links to an external site.) for guidance on interpreting your grade.

> a. **Examinations.** There will be two examinations -- both will be administered using the Canvas quiz function. As such they are to be completed outside of the classroom and are open book, open note tests.

> b. **Class Project/Term Paper.** The class will be divided into several teams that will conduct an actual rodent survey of a Seattle neighborhood. Each group will prepare a final report in which you present the results of your survey, characterizing the nature and extent of the rodent problems found and presenting detailed recommendations for corrective action(s). Your recommendations need to be supported by appropriate literature documenting the appropriateness of your methods to the problems which you have identified. Each paper should be typed with appropriate end notes, bibliography including all references used. Copies of your block record sheets and summary sheets should be appended to your report. The information you present and your bibliography should reflect your ability to

search the library and obtain relevant information from many sources, including scientific/professional journals, trade journals, and government reports. Use of only one or two references (or only references from internet sites) is not considered adequate or acceptable. This is an exercise in report writing typical of the type of reports which a environmental health practitioner is expected to be able to routinely produce.

Format: You do not need to use a cover but must have a title page. Make sure all of your names, the class, the date and the title of your report are included on the title page and follow this with the text, bibliography, and appendices. Include page numbers after the first page. Staple the report in the upper left hand corner. You should not use type larger than 12 point (or smaller than 10), triple space, or wide margins.

Evaluation of Papers: Your paper will be evaluated on the following points:

1) Data collection, organization, analysis and synthesis;

2) Appropriateness of your recommendation;

3) Organization, general composition, spelling, and use of citations, bibliography and end notes; and,

4) Appropriate use and citation of evidence.

Documentation of sources: All information presented in any written assignment must include the correct and proper attribution of the source of that evidence or information. You may use any standard style manual but it must be used consistently and correctly throughout the paper. See the UW Health Sciences Writer's Guide (Links to an external site.) for information and style guides.

c. Class participation: This class will be conducted as a seminar in which student will need to read the assigned materials before coming to class in order to be able participate in the discussions and exercises. The class will work together in teams to examine a particular aspect of the course content, solve a problem or conduct an activity.

Up to 100 points will be awarded to each group for correctly responding to the class discussion questions. Points will be accumulated during class session at a rate of up to five points per day to each group that correctly answers the question(s) and participating in the discussion. However, students who are not in class are not able to contribute to the discussion and hence will receive zero (0) points for the day unless their absence is excused in advance.

2. 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. Assignments may be evaluated using Turnitin (Links to an external site.), which is a tool to help evaluate the integrity of written assignments.

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.

3.   **Access and Accommodation:** (http://depts.washington.edu/uwdrs/faculty-resources/syllabus-statement/)

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.

> Disability Resources for Students
> 448 Schmitz Hall, Box 355839
> Seattle, WA 98195-5839
> uwdss@u.washington.edu
> http://www.washington.edu/students/drs/
> Phone: 206-543-8924 (Voice)
> 206-543-8925 (TTY)

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.

Course Materials:

1. **Textbooks:**

a. Rozendall JA. *Vector Control: Methods for use by individuals and communities,* Geneva, World Health Organization, 1997. ISBN 92 4 154494 5 (Full PDF Version 38.8 MB) (WHO online link: http://www.who.int/whopes/resources/vector_rozendaałen/ in smaller chunks)

b. Bennett GW, Owens JM, Corrigan RM. *Truman's Scientific Guide to Pest Management Operations*, 7th Edition, Purdue University/Questext Media, Cleveland, Ohio, 2010.

c. Pratt H, et al. *Biological Factors in Domestic Rodent Control* and *Control of Commensal Rats & Mice*, US Centers for Disease Control and Prevention, Atlanta GA, 1976.

d. Pratt HD, Moore CG. *Mosquitoes of Public Health Importance and Their Control*, CDC, 1993.

2. **Handouts:** In addition, selected handout materials will be made available on the course website or reproduced and handed out in class.

3. **Reading Assignments:** Most of the assignment for the course are listed on the Class Schedule. Additional assignments will be made in class.

Other Reading Materials:

1. **Books and Manuals:**

a. Zinsser H. *Rats, Lice and History*, Little, Brown, and Company, 1935.

b. Garrett L., T*he Coming Plague: Newly Emerging Diseases in a World Out of Balance*. Penguin Books, New York, 1995.

c. Burgess NRH. *Public Health Pests*, Chapman and Hall, London, 1990.

d. Ware GW. *Complete Guide to Pest Control With and Without Chemicals*, 2nd Ed., Thompson Publications, Fresno CA, 1988.

e. Ware GW. *The Pesticide Book*, 4th Ed., Thompson Publications, Fresno CA, 1994.

f. Pedigo LP, Rice ER. Entomology and Pest Management [5th Ed.], Pearson/Prentice Hall, Columbus OH, 2006.

g. Diamond J, *Guns, Germs and Steel: The Fates of Human Societies*, W.W. Norton & Co., New York, NY 1997.

h. Van Emden HF, Service MW. *Pest and Vector Control*, Cambridge University Press, Cambridge UK, 2004.

i. Gratz NG. *Vector- and Rodent-borne Diseases of Europe and North America*, Cambridge University Press, Cambridge UK, 2006.

2. **Journals and Other Publications:**

a. Vector-borne and Zoonotic Diseases

b. Journal of Economic Entomology

c. Pest Control (Available in EH Library)

d. Journal of Environmental Health

e. American Journal of Public Health

f. World Health Organization Reports and Monographs

Tentative Course Schedule:

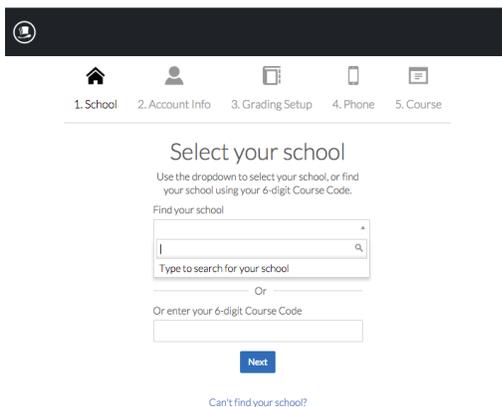| No.	Day	Date	Session/Topics	Lecturer	Assignment
1	Mon.	4 Jan.	Course Introduction Definition & Context	C. Treser	
2	Wed.	6 Jan.	Zoonoses & Human History: Lice, Rats and History	C. Treser	Rozendaal: Introduction
3	Fri.	8 Jan.	Zoonoses & Human History: Factors of Emergence	C. Easterberg	Reading #1 (Murphy)
4	Mon.	11 Jan.	Rodents: Biology, Habitats, Characteristics & Habits	C. Treser	CDC Manual 10
5	Wed.	13 Jan.	Rodent-borne Diseases I: Plague	C. Treser	Reading #2 (Plague)
6	Fri.	15 Jan.	Rodent-borne Diseases II Hantavirus	C. Treser	Reading #3 (Hantavirus)
	Mon.	18 Jan.	MLKing Jr. Day No Class		
7	Wed.	20 Jan.	Course Project I: Urban Rat Surveys	C. Treser	Reading #4 (CDC)
8	Fri.	22 Jan.	Course Project II: Project Area Selection & Planning	C. Treser	Project Guidelines
9	Mon.	25 Jan.	Urban Rat Survey Sample Survey	C. Treser C. Easterberg	Meet at the Burke Museum
10	Wed.	27 Jan.	Arthropods: Introduction General Physiology	C. Treser	Truman: Ch. 2 & 3 Rozendaal: Intro.
11	Fri.	29 Jan.	Arthropods: Diptera I Flies & Their Diseases	C. Treser	Truman: Ch. 14 Rozendaal: Ch. 2&6
12	Mon.	1 Feb.	Arthropods: Diptera II Mosquitoes & Their Diseases	C. Treser	Truman: Chapter 14 Rozendaal: Ch. 1
13	Wed.	3 Feb.	Arthropods: Diptera III Mosquitoes - *Continued*	C. Treser	Truman: Chapter 14 Rozendaal: Ch. 1
14	Fri.	5 Feb.	Arthropods: Diptera IV Mosquitoes - *Continued*	C. Treser	Truman: Chapter 14 Rozendaal: Ch. 1
15	Mon.	8 Feb.	Arthropods: Siphonaptera Fleas and their Diseases	C. Treser	Midterm Exam Due
16	Wed.	10 Feb.	Arthropods: Arachnida I Ticks and their Diseases	C. Treser	Rozendaal: Chapter 4 Truman: Chapter 12
17	Fri.	12 Feb.	Arthropods: Arachnida II Mites and their Diseases	C. Treser	Rozendaal: Chapter 5 Truman: Chapter 7
	Mon.	15 Feb.	Presidents' Day No Class		
18	Wed.	17 Feb.	Arthropods: Anoplura Lice and their Disease	C. Treser	Rozendaal: Chapter 4 Truman: Chapter 12

19	Fri.	19 Feb.	Arthropods: Blattaria Cockroaches and their Diseases	C. Treser	Rozendaal: Chapter 4 Truman: Chapter 12
20	Mon.	22 Feb.	Arthropods: Hemiptera Bedbugs	C. Treser	Rozendaal: Chapter 4 Truman: Chapter 12
21	Wed.	24 Feb.	Arthropods: Miscellaneous Pests - Spiders, wasps, etc	C. Treser	Rozendaal: Chapters 3, 7 & 8
22	Fri.	26 Feb.	Pest Control I: Integrated Pest Management	C. Treser	Truman: Chapters 1, 4 Rozendaal: Chs. 9-10
23	Mon.	29 Feb.	Pest Control II: Rodent Control	C. Treser	CDC Manual 11, Truman: Ch. 17
24	Wed.	2 Mar.	Pest Control III: Arthropod Control	C. Treser	Truman: Chapters 5-6 Rozendaal: Chs. 9-10
25	Fri.	4 Mar.	Pest Control IV: Community Control	C. Treser	
26	Mon.	7 Mar.	Class Presentations I: Rodent Surveys	Groups A-C	
27	Wed.	9 Mar.	Class Presentations II: Rodent Surveys	Groups D-F	
28	Fri.	11 Mar.	Class Presentations III: Rodent Surveys	Groups G-H?	Project Papers Due
29	Mon.	15 Mar	Final Exam Day 8:30 - 10:20 AM		Final Exam Due

Student Quick Start Guide

Welcome to Top Hat! This guide will help you register a student account and understand how to use Top Hat for your class.

Creating an Account

1. If you don't already have a previous Top Hat account or a temporary account, open a web browser and navigate to tophat.com/register/student/

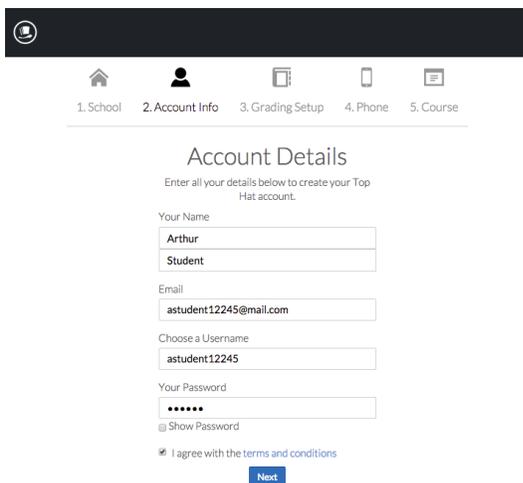2. If you have the 6-digit course code, enter it in. Otherwise, enter and select your school's name in the drop-down box.

Course Name: ENV H 442: Zoonotic & Vector-borne Disease (Winter 2016)

Direct URL: https://app.tophat.com/e/798205

6-digit join code: 798205

3. Enter your name and email address, as well as the username and password you'd like to use. If it's already in use, verify you don't already have a Top Hat account. (**Note:** Your instructor likely uses your school-issued email address as a method of identification so you should likely considering using that email address in Top Hat!)

4. Enter your school-issued student ID number. This will assist your instructor when it comes time to upload any of your grade data and ensures you are properly credited.

Setup Grading

Please enter your student ID or other identifier used for grading purposes.
If you're unsure of what you should enter here, you can skip this page for now and enter this information later.

Student ID

004682851

[Next]   Skip, I will add it later

5. Enter your mobile phone number. This will link your phone to your account, should you opt to ever submit an answer to Top Hat via SMS/text message. Top Hat will send you a verification text message as confirmation. If you don't own a mobile phone and will be participating with a laptop or tablet device, don't sweat it! Simply click "Skip, I don't want to use my phone" (**Note:** If you don't link your phone to your account and you end up using it in class, Top Hat will not record the grades to your account.)

Add My Phone

Answer questions in class using (SMS) text messaging.

You will be sent a verification code to your mobile phone so that your submissions will be recorded accurately.
Your number will be kept private. No one will have access to your phone number.

Mobile Phone Number

🇺🇸▾ 1 780-555-1234

[Send Verification Code]   Skip, I don't want to use my phone

6. Find your course from the available list of classes. You can also search by the last name of your instructor, or by the name of the course. Once you find your course in the list, simply click the "Enroll" button next to it.

Find Your Course

To begin your search, enter the name of your course or professor.

Find a course				Search
Name	**Code**	**Subject**	**Professor**	**Enroll**
Advanced Research Design and Analysis (Swartout)	PSYC 3530	Psychology	Kevin Swartout	[Enroll]
Animal Biology	Biol 3840		Amy Reber	[Enroll]
Basic Federal Taxation (7095) Spring 2015			Cassady Brewer	[Enroll]
Biol4828 CTW		biology	Charlie Benson	[Enroll]

7. If your course requires a Top Hat subscription you will automatically be taken to the subscription selection screen. Top Hat offers 3 options: 1 term (4-months), 1 year (a full academic year) or a student lifetime (5-years). Select the option that best suits your needs, keeping in mind that you may find that you'll need Top Hat again in the next school term. As long as you have an active subscription, you can use Top Hat in as many concurrent courses as you need!

Congratulations! You've just created your Top Hat student account!

You will receive a confirmation email with your receipt shortly.

Accessing Top Hat

Once you have an account, you can log in by visiting tophat.com/login from your web browser and typing in your username and password. This will take you to the Top Hat lobby where you will have access to all your course information.

Answering Questions

Now that you're enrolled in your course, it's time to answer a few questions! You can use any of the following methods:

Laptop, tablet, or web-enabled smartphone

You can submit answers by accessing the Top Hat web interface using a web browser. There are known compatibility issues with Internet Explorer, so we highly recommend using Google Chrome or Mozilla Firefox instead. All active items should appear on the left hand side of your screen depending on how your instructor decides to use the system. **Note:** If you can't see anything, your instructor likely hasn't activated questions for your course yet!

Android and iOS devices

If you're using a compatible iOS or Android device, please visit the Apple App store or the Google Play market to download the latest version of the Top Hat app.

SMS submissions

You can submit answers in class using any mobile phone by sending a message to your course's texting number. The number is displayed on the right side of your screen as well as your instructor's screen. Each question your instructor activates will be assigned a unique 4-digit ID; this will be displayed on your instructor's projected screen.

For example: The Top Hat number in the USA is **+1 (315) 636-0906** and if you'd like to send "A" as an answer to a question with **1234** as the assigned 4-digit ID, all you'd have to do is send a message to the phone number with the text "**1234   a**"

You should always receive a confirmation message that the submission has been received. If you don't, please confirm that you have sent your text to the correct phone number and that you have typed the 4-digit ID correctly. You should also check that your phone has good reception. **We highly recommend that you retain a record of your SMS submissions and do not delete the history of your messages from your phone.**

Common error messages

The 4-digit ID is not in use. Please verify that the identification code is correct.

This happens when you submit an answer to a question that has already been closed by your instructor. This sometimes happens due to a weak signal, let us know if this seems to be a persistent issue.

You must be enrolled in this course to submit answers. Please enroll from a computer.

This message most likely means that you haven't completed the enrollment process. Please access Top Hat from a computer and make sure that you're enrolled in the correct course. This can also happen if you've entered the wrong SMS ID, please check to see if the 4-digit ID number is correct.

Checking your grades

If you'd like to see how you're doing in a course, access Top Hat from a computer or web-enabled device and click the **Gradebook** link towards the left side of the screen. **We highly recommend that you keep track of your grades and check the gradebook often.** The gradebook will show you a list of all active, answered and unanswered items in the course. The bottom row also has some important statistics:

Percent Average (% avg.): This is the overall graded average reflected by the total number of points received (correctness & participation) divided by the total number of possible points available.

Correctness Points: The correctness points that you received in comparison to the course total.

Participation Points: The participation points that you received in comparison to the course total.

Percent Answered (% answered): This average reflects the total number of graded items (i.e. Questions and Graded Discussions) that you attempted in relation to those items that you missed. Please note that this doesn't reflect your participation grade since non-credit questions are also counted in this calculation.

Support

Your instructor is extremely busy and is simply a user of our system, just like you!

Please do not waste valuable class time by asking your instructor technical questions, we have a team dedicated to that. To reach us, click **Support** at the bottom left corner of your screen, email **support@tophat.com** or visit **support.tophat.com** to access the Top Hat Academy. You will be able to search the knowledge base, stay up to date with our news and even suggest features!