## Nutrition 545/446/Environmental Health 540
### Food Safety and Health
**Monday and Wednesday 12-1:20 PM**
**T733 Health Sciences Building**

<table>
<thead>
<tr>
<th>Date</th>
<th>Topic</th>
<th>Instructor</th>
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<tr>
<td>January 4.</td>
<td>Introduction: Concepts of food safety, establishing the problems and susceptibilities within the food chain.</td>
<td>Rosenfeld</td>
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<td>January 9.</td>
<td>Food borne pathogens and outbreaks</td>
<td>Meschke</td>
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<td>January 11.</td>
<td>Investigating a food outbreak</td>
<td>Melius</td>
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<td>January 16.</td>
<td>Martin Luther King Day Holiday</td>
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<td>January 18.</td>
<td>Food borne pathogens and outbreaks continued: seafood and shell fish, mercury and toxins</td>
<td>Meschke</td>
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<td>January 23.</td>
<td>Food safety regulations: the roles of federal and state agencies.</td>
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<td>January 25.</td>
<td>Organic food, chemical contamination</td>
<td>Rosenfeld</td>
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<td>January 30.</td>
<td>Risk Perception</td>
<td>Faustman</td>
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<td>February 1.</td>
<td>One health, zoonotic infections and food safety</td>
<td>Rabinowitz</td>
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<td>February 6.</td>
<td>Antibiotic resistance</td>
<td>Roberts</td>
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<td>February 8</td>
<td>Dietary supplements</td>
<td>Averill</td>
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<td>February 13</td>
<td>Midterm Exam</td>
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<td>February 15</td>
<td>CDC and FDA.</td>
<td>Pappaioanou</td>
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<td>February 20</td>
<td>President’s Day Holiday</td>
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<td>February 22</td>
<td>Restaurant and food service inspections,</td>
<td>Easterberg</td>
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<td>food safety in the home</td>
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<td>February 27</td>
<td>Genetically modified foods</td>
<td>Rosenfeld</td>
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<td>March 1</td>
<td>Over-nutrition:obesity</td>
<td>Rosenfeld</td>
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<td>March 6</td>
<td>Legal consequences of food outbreaks</td>
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<td>March 8</td>
<td>Class Debate and Discussion</td>
<td>Rosenfeld</td>
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<td>Are we safer now than ever before?</td>
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<td>March 15</td>
<td>Research papers due</td>
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Course Objectives:

At the conclusion of this course the student will be able to:

- Identify the problem areas and susceptibilities within the food chain.
- Demonstrate an application of basic knowledge and skills regarding food safety, globalization of the food supply, sustainable agriculture, and biotechnology.
- Identify policy issues related to the food supply.
- Identify the major risk factors and health related consequences for food borne illness in the United States.
- Discuss the processes and investigations used for ensuring a safe food supply.
- Identify and discuss recent food borne illness outbreaks.
- Describe the responsibilities, interactions, and limitations of international, federal and local agencies responsible for food safety.
- Describe the criteria used for approval as USDA Organic.
- Identify the chemical contaminants of food.
- Discuss the issues of food safety from the perspective of the food industry.
- Discuss the legal consequences of the distribution and sale of unsafe food.
- Describe the causes of antibiotic resistance associated with the food supply.
- Discuss the concept of “One Health”.
- Analyze the issues surrounding biodiversity and biotechnology.
- Review the scientific foundation and safety of genetically modified organisms.
- Analyze issues in the use of locally grown foods.
- Discuss the issues related to over-nutrition, food marketing, and obesity.
- Discuss the perception and analysis of risk of unsafe food.
- Discuss the issues related to the safety of dietary supplements.
- Describe preparedness activities related to biosecurity.
- Describe the food safety requirements for restaurants and food services.
- Identify the issues related to optimum food safety in the home.

Course Grading:

Grades for undergraduates will be based on 5 assignments. 1. Students will submit to Canvas prior to each lecture, a 1 paragraph summary of the assigned reading for that class (10%). 2. Students will submit to Canvas by February 13, their review of fact sheets on food safety issues composed by the graduate students (10%). 3. Students will complete an in-class multiple choice midterm exam on February 13 (45%). 4. Students will write a paper (max 15 pages double spaced, due at the end of classes) that researches any current issue related to
food safety (30%). 5. Following the final class debate/discussion, on whether we’re safer now than at any time in the past, students will submit within 1 week a summary of the debate/discussion (max 5 pages, 5% of grade).

Grades for **graduate students** will be based on 5 assignments. 1. Graduate students will submit to Canvas prior to each lecture, a 1 paragraph summary of the assigned reading for that class (10%). 2. Graduate students will submit to Canvas on February 8, a 1-2 page fact sheet on a food safety related topic chosen from a list provided at the beginning of the course (15%). Graduate students can work in pairs if they choose to complete the fact sheets. The undergraduate students will review and comment on the fact sheets. 3. Graduate students will complete an in-class multiple choice midterm exam on February 13 (40%). 4. Graduate students will write a paper (max 20 pages double spaced due at the end of classes) focused on any issue related to food safety (20%). 5. Graduate students will also participate as team members in a class debate on the last day of classes. Teams (randomly assigned at the beginning of class) will work together to research all of the issues pertaining to the question “are we safer now than ever before”, and will present a 20 minute powerpoint presentation in support of their side of the issue (15%). After each side has presented, there will be a full class discussion of the issues.

**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**. 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 Student Conduct Code (WAC 478-120)

SPH Academic Integrity policy
[http://sph.washington.edu/students/academicintegrity/](http://sph.washington.edu/students/academicintegrity/)

Community Standards and Student Conduct
Access and Accommodation
(http://depts.washington.edu/uwdrs/faculty-resources/syllabus-statement/):

"Disability Resources for Students (DRS) offers resources and coordinates reasonable accommodations for students with disabilities. Reasonable accommodations are established through an interactive process between you, your instructor(s) and DRS. If you have not yet established services through DRS, but have a temporary or permanent disability that requires accommodations (this can 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"

Classroom Climate:
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.

Required and Recommended Readings (weekly required readings are highlighted with an asterisk * and are available on the course website):

Concepts of food safety, establishing the problem(s), susceptibilities within the food chain

Institute of Medicine: Addressing Foodborne Threats to Health" Web Summary. 2006

* DeWaal, CS and Plunkett, DW. Building a Modern Food Safety System. CSPI White Paper 2009

Food borne pathogens and outbreaks, seafood and shell fish, mercury and toxins, investigating an outbreak.

Mead PS, et al.; Food-Related Illness and Death in the United States, Emerging Infectious Diseases Vol. 5; CDC, Atlanta, Georgia, USA, 1999


Preliminary FoodNet Data on the Incidence of Infection with Pathogens Transmitted Commonly Through Food --- 10 States, 2008. MMWR April 10, 2009 / 58(13);333-337


Germany’s E-Coli Nightmare. Food Quality Aug/Sept 2011


Jeffery, B. et al., Amnesic shellfish poison. Food and Chemical Toxicology 42 (2004) 545–557


FDA (1) What You Need to Know About Mercury in Fish and Shellfish 2004
FDA (2) Mercury Levels in Commercial Fish and Shellfish 2006


Food safety regulations: the roles of federal, state, and international agencies

http://www.fda.gov/Food/FoodSafety/FSMA/default.htm

S 510 Food Safety Modernization Act 2009 Summary
Organic food, chemical contamination of food


Food safety preparedness: Perspective from the food industry

Hormones and antibiotics: antibiotic resistance, contamination of foods


*MARK BITTMAN. The F.D.A.’s Not-Really-Such-Good-News
New York Times Published: December 17, 2013

Marilyn C. Roberts. The Evolution of Antibiotic-Resistant Microbes in Foods and Host Ecosystems In: From Food-Borne Microbes: Shaping the Host Ecosystem, Editors: Lee-Ann Jaykus, Hua H. Wang, Larry S. Schlesinger, ASMPress:

David G. White and Patrick F. McDermott. Antimicrobial Resistance in Food-Borne Pathogens In: From Food-Borne Microbes: Shaping the Host Ecosystem, Editors: Lee-Ann Jaykus, Hua H. Wang, Larry S. Schlesinger, ASMPress:

Dietary Supplements

*FDA May Have Opportunities to Expand Its Use of Reported Health Problems to Oversee Products: Report to Congressional Requesters March 2013 GAO-13-244 United States Government Accountability Office


Dietary Supplements Red Flags – What You Need to Know to Stay Safe and Avoid Fraud. Human Performance Resource Center

Risk perception and analysis


One health, globalization, sustainable agriculture, local food networks, slow foods


HEALTHY LAND, HEALTHY PEOPLE: BUILDING A BETTER UNDERSTANDING OF SUSTAINABLE FOOD SYSTEMS FOR FOOD AND NUTRITION PROFESSIONALS: A PRIMER ON SUSTAINABLE FOOD SYSTEMS AND EMERGING ROLES FOR FOOD AND NUTRITION PROFESSIONALS. American Dietetic Association Sustainable Food System Task Force. March 16, 2007


Bittman, M. Sustainable Farming, Can We Feed the World? NYT Editorial 2010

De Schutter, O. On the right to food. Report to the UN General Assembly submitted by the Special Rapporteur. Dec. 20, 2010
Pollan M. “No Bar Code”, Excerpt from: The Omnivore’s Dilemma. 2006


Organic Agriculture: USDA Economic Research Service Briefing Room

Mayo Clinic: Organic foods: are they safer? more nutritious?


WHO: Understanding The Codex Alimentarius, 3rd Ed. 2006 WHO/FAO


GAO: Agencies need to address gaps in enforcement and collaboration to enhance safety of imported food. Sep 2009. GAO-09-873.

Restaurant and food service inspections, food safety in the home

Public Health Seattle & King County (PHSKC) Food Inspection Program: Restaurant Inspections on Line.

PHSKC Restaurant Inspection Form


http://www.foodsafety.gov/
Safe Minimum Cooking Temperatures
Meat and Poultry Roasting Chart
Storage Times for the Refrigerator and Freezer
Fresh Eggs: Playing It Safe
Egg Storage Chart
The Dangers of Raw Milk
Fresh Produce Safety
Two Simple Steps to Juice Safety
Sprouts: What You Should Know


Bioterrorism and food safety


FDA: AN OVERVIEW OF THE CARVER PLUS SHOCK METHOD FOR FOOD SECTOR VULNERABILITY ASSESSMENTS


Genetically modified foods.


FAO Focus: Weighing the GMO Argument: Against

The Hidden Health Hazards of Genetically Engineered Foods
Food Safety Review. THE CENTER FOR FOOD SAFETY

Smithson, S, "Eat, Drink, and Be Wary": Genetically modified animals could make it to your plate with minimal testing and no public input. Grist Magazine, July 30, 2003


Over-nutrition: food marketing, supersizing, obesity


Cynthia L. Ogden, Molly M. Lamb, Margaret D. Carroll, and Katherine M. Flegal, Obesity and Socioeconomic Status in Adults:United States, 2005–2008. NCHS Data Brief No. 50 December 2010


*Drewnowski, A. The cost of US foods as related to their nutritive value. Am J Clin Nutr 2010; 92(5):1181-8

**Legal consequences of food outbreaks**

http://www.marlerclark.com/