

ENV H 590B
Occupational Disease
Spring 2016

Course Times: Tuesday, Thursday 8:30-10:20 am

Course Location: Health Sciences Building (HSB) T635

Instructor: June Spector, MD, MPH
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Office Hours: by appointment

Course Website: <https://canvas.uw.edu/courses/1040387>

Course Description:

This course serves as an introduction to occupational diseases. Classes are organized around nine common and classic occupational diseases, framed using public health scenarios and clinical cases. To promote integration of concepts, lecture materials and other illustrative multimedia content are reviewed outside of class, and multi-disciplinary discussions involving both students and faculty occur during class time. This course is designed to ensure that, upon completion, students can effectively apply evidence-based occupational health principles to their work using the most current information available.

Course Logistics:

This course offers two different credit options: 1) a three-credit option, and 2) *a four-credit option*.¹ The three-credit option focuses on occupational disease epidemiology, pathophysiology, basics of diagnostic testing, and aspects of workplace/population management relevant to disease prevention and management such as hazard evaluation, disease surveillance, policy development, and health protection programs. The course will meet many of the objectives of students in exposure sciences, occupational health services, and toxicology with its focus on specific exposures, health outcomes, and disease management.

A four-credit option, intended for clinically-oriented students including but not limited to occupational and environmental health nursing students, medical fellows in occupational medicine and other medical subspecialties, residents in internal medicine, family medicine, emergency medicine, and rehabilitation medicine, and third and fourth year medical students, is also available. The four-credit option includes an additional clinical laboratory session each week that focuses in more detail on aspects of diagnostic testing and interpretation, differential

¹The content and format of this course were developed by reviewing existing requirements/guidelines/needs relevant to the target student audience and surveying faculty and student representatives from target student audience programs.

diagnosis, and clinical management. This additional clinical laboratory allows for emphasis on attaining the level of knowledge required for successful completion of the Occupational Medicine board examination and the Certified Occupational Health Nursing examination.

The course is open to other students with permission of the instructor.

E-mail is the standard medium used for communication regarding this course, and readings and other resources will be distributed via the course web site. Students are responsible for ensuring that their correct email address is on file, and for informing the instructor if unable to use electronic media.

Course Learning Objectives:*

At the end of this course, the student will be able to:

- Recognize and describe the epidemiology and pathophysiology of classic and common occupational diseases (PC8)
- Identify potential relationships between exposures and symptoms in workers and working populations (PC8, MK2)
- Select appropriate initial diagnostic tests to evaluate symptomatic workers (PC1)
- Work in multi-disciplinary teams to manage and prevent occupational diseases at the workplace/population level using such approaches as hazard evaluation, disease surveillance, policy development, and health protection programs (PC8)
- Evaluate regulatory occupational exposure limits with respect to disease prevention (PC9)
- Recommend appropriate medical surveillance activities, integrating information about regulatory requirements, to employers when appropriate (PC12)
- Critically review the scientific literature to address specific occupational disease questions, and determine the validity of the work (PC1, MK4)

Additional learning objectives for clinical (four-credit course option) students are:

- *Formulate a differential diagnosis for symptomatic workers (PC8)*
- *Select and interpret appropriate diagnostic tests (including imaging studies, audiograms, nerve conduction/electromyography studies, pulmonary function tests, and allergy tests) and workplace evaluations that can best distinguish between specific occupational illnesses, and evaluations that can help separate work-related conditions from non-work-related conditions (PC1)*
- *Manage workers with occupational diseases, including by selecting appropriate treatments and referrals, while incorporating best practices from medical guidelines (PC1, PC6, PC8)*

** Objectives are mapped to relevant Accreditation Council for Graduate Medical Education (ACGME) milestones (<https://www.acgme.org/acgmeweb/Portals/0/PDFs/Milestones/PreventiveMedicineMilestones-OccupationalMedicine.pdf>), shown in parentheses after each objective.*

Course Format:

The course consists of nine units, with each unit focusing on a different occupational disease. Diseases will be introduced using public health scenarios and clinical cases. The course will be delivered using a “flipped-classroom” approach,² in which lecture and other materials will be reviewed outside of class, and interactive, multidisciplinary activities will be conducted during class time. Guest experts supplement lectures and class sessions led by the instructor. There will often be several student-led discussions per week (see details below).

In general, each disease-unit will be covered over the course of one week. The general scheme includes:

- 1) Basic descriptive epidemiology and evidence of exposure/disease association:
 - Student preparation (*outside of class*):
 - Review workplace scenario and illustrative YouTube video clips, other media sources, and/or readings
 - View pre-recorded video mini-lecture (background, basic descriptive epidemiology of disease)
 - Read journal article or report addressing exposure/disease relationship (if applicable)
 - In-class:
 - Review of scenario
 - Q&A/discussion of descriptive epidemiology using student response approach
 - Brief review of journal article/report addressing exposure/disease relationship (student-led, if applicable)

- 2) Basic pathophysiology and diagnostic considerations (individual patient-level):
 - Student preparation (*outside of class*):
 - Review clinical case and illustrative YouTube video clips, other media sources, and/or readings covering clinical disease presentation and/or diagnostic considerations
 - View pre-recorded video mini-lecture (basic pathophysiology)
 - In-class:
 - Review of case
 - Discussion of classic diagnostic tests and disease findings using actual examples (clinical student-led)

- 3) Selected aspects of management (workplace/population-level):
 - Student preparation:
 - Review/read resources, including occupational safety and health standards, if applicable, covering disease prevention and management at the workplace/population level
 - In-class:
 - Interactive discussion of population-level disease management/prevention topic (e.g. hazard evaluation, disease surveillance, policy development, health protection program) (student-led)

² <http://www.washington.edu/teaching/teaching-resources/flipping-the-classroom/>

For clinical students/students enrolled in the four-credit course option, there will be an additional clinical laboratory each week focusing on diagnosis and clinical management:

4) Clinical Laboratory – differential diagnosis, clinical management

- *Student preparation:*
 - *Review/read resources covering differential diagnosis and management*
 - *View pre-recorded video mini-lecture (diagnosis and management)*
- *In-class:*
 - *Student collaboratively work through clinical cases, including to interpret key diagnostic tests for each disease and distinguish findings from other related diseases*

Course Requirements:

High-yield readings and review of multimedia resources combined with instructor- and student-led discussions and activities in class, and a final examination (clinical students only), will test students' ability to demonstrate application of knowledge.

Evaluation methods

Student-led discussions: Groups of 1-2 students will be formed. Each group will:

#1) *non-clinical students:* lead an approximately 20-30 minute discussion of an illustrative journal article focusing on exposure-disease relationships corresponding to the weekly occupational disease. The discussion should emphasize a critical review of the article and focus on any evidence of an exposure-disease association and, if relevant, dose-response relationship

or

lead an approximately 30 minute discussion of the workplace/population management topic corresponding to the weekly occupational disease. Discussions should be interactive and participatory, evidence-based, and build on the scenario for each disease. Students are required to communicate with the instructor at least one week prior to the presentation for feedback on the plan for the discussion.

#2) *clinical students:* lead two approximately 30 minute discussion of the clinical evaluation topic corresponding to the weekly occupational disease. Discussions should be interactive and participatory, evidence-based, and build on the case for each disease. Students are required to communicate with the instructor at least one week prior to the presentation for feedback on the plan for the discussion.

Final presentation: Multidisciplinary groups of 4-5 students will be formed. Each group will choose an emerging and/or global occupational disease of interest. Groups will present a 40-minute overview of the chosen disease covering information about what is known about the exposure, disease/case epidemiology, diagnosis/case definition, population management, and clinical management (if relevant). Non-clinical students will present on clinical subtopics with guidance from clinically-oriented group members, and clinically-oriented students will present on non-clinical (e.g. exposure) subtopics with guidance from non-clinically-oriented students.

Final examination (clinical students only): There will be a written final examination at the end of the course. The examination format will be multiple-choice and short answer. The examination will be open-book, open-note.

Readings and Other Preparatory Materials:

All readings, videos, and other materials will be posted on the class website. All students are expected to be able to access class materials via the course website. If this presents a problem, students are expected to let the instructor know immediately.

Please be advised that to use the electronic material on the course website, you must agree to the following statement:

The copyright law of the United States (Title 17, United States Code) governs the making of photocopies or other reproductions of copyrighted materials. Under certain conditions specified in the law, libraries and archives are authorized to furnish a photocopy or other reproduction. One of these specified conditions is that the photocopy or reproduction is not to be used for any purpose other than private study, scholarship, or research. If a user makes a request for, or later uses, a photocopy or reproduction for purposes in excess of fair use that user may be liable for copyright infringement.

Course Textbook: Rosenstock, L. Textbook of Clinical Occupational and Environmental Medicine, 2nd edition (2005).

Student Evaluation:

Course grades will be determined on the basis of:

| | Three-credit option | Four-credit option (clinically-oriented students) |
|----------------------------------|----------------------------|--|
| Individual products (70%) | | |
| Student-led discussion 1 | 30% | 15% |
| Student-led discussion 2 | -- | 15% |
| Final presentation | 40% | 30% |
| Final examination | -- | 10% |
| Other (30%) | | |
| Participation & professionalism | 30% | 30% |

Assignment of numeric grades will use UW Department of Health Services grading guidelines for graduate students. More details are available at the course website. <http://depts.washington.edu/hserv/grading>

- 3.9-4.0 Excellent and exceptional work ...for a graduate student
- 3.7-3.8 Strong work
- 3.4-3.6 Competent and sound work (*default category*)
- 3.2-3.3 Adequate work, although some weaknesses are evident
- 2.9-3.1 Borderline work
- 2.7-2.8 Deficient but acceptable work
- <2.7 Unacceptable work

Access and Accommodations:

Your experience in this class is important to us, and it is the policy and practice of the University of Washington to create inclusive and accessible learning environments consistent with federal and state law. If you experience barriers based on a disability or temporary health condition, please seek a meeting with Disability Resources for Students (DRS) to discuss and address them. If you have already established accommodations with DRS, please communicate your approved accommodations to your instructor at your earliest convenience so we can discuss your needs in this course.

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. If you have not yet established services through DRS, but have a temporary health condition 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

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.

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.

Course Schedule: ENV H 590B
Spring 2016

| Date/ Session* | Disease/Topic | Instructor/Guest Expert | Preparation/Readings |
|---|--|------------------------------------|---|
| Intro 3/29 | Course introduction | Spector | --- |
| Chronic solvent-induced encephalopathy (CSE) | | | |
| 3/31a | Background & epidemiology <ul style="list-style-type: none"> • Review scenario • Epi Q&A • Review case | | <ul style="list-style-type: none"> • Read scenario: Solvent use in spray painting • Read case • View CSE epidemiology & pathophysiology mini-lecture • Read Rosenstock Chapter 28.1, p. 645-653, 655 (optional) |
| 3/31b/ Clinical lab | Pathophysiology & diagnosis: Neuropsychological testing in occupational medicine | Vaishali Phatak, PhD | <ul style="list-style-type: none"> • <i>Complete reading Rosenstock Chapter 28.1 (optional)</i> • <i>View clinical diagnosis and management mini-lecture</i> |
| Carpal tunnel syndrome (CTS) | | | |
| 4/5a | Background & epidemiology <ul style="list-style-type: none"> • Review scenario • Epi Q&A ❖ Student-led discussion: Harris-Adamson article (exposure/disease relationship) • Scenario wrap-up | Spector/ Students | <ul style="list-style-type: none"> • Read scenario: Meat packing • View Tyson video: https://www.youtube.com/watch?v=xOD1QJR3I7Y • Read Rosenstock Chapter 28.2, p. 679 & 23.3 p. 515 (optional) • View CTS epidemiology mini-lecture • Read Harris-Adamson 2015³ |
| 4/5b | Pathophysiology & diagnosis <ul style="list-style-type: none"> • Review case ❖ Student presentation: Clinical exam provocative maneuvers for carpal tunnel syndrome | Spector/ Students | <ul style="list-style-type: none"> • Read CTS case • View NCS/EMG video: https://www.youtube.com/watch?v=UzbcH16AUzE • Read Rosenstock Chapter 28.2, p. 680 & 23.3 p. 515-517 (optional) • View CTS pathophysiology mini-lecture |
| 4/7a | Population management <ul style="list-style-type: none"> ❖ Student-led discussion: CTS case identification for population-based research | Students | <ul style="list-style-type: none"> • Read Rempel 1998⁴ |

³ Harris-Adamson et al. (2015). Biomechanical risk factors for carpal tunnel syndrome: A pooled study of 2474 workers. *Occup Environ Med*, 72(1), 33–41.

⁴ Rempel, D., Evanoff, B., Amadio, P. C., de Krom, M., Franklin, G., Franzblau, A., ... Pransky, G. (1998). Consensus criteria for the classification of carpal tunnel syndrome in epidemiologic studies. *American Journal of Public Health*, 88(10), 1447–51.

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| 4/7b/ <i>Clinical lab</i> | --- | --- | <ul style="list-style-type: none"> • Read L&I CTS medical treatment guidelines:http://www.lni.wa.gov/ClaimsIns/Files/OMD/MedTreat/CarpalTunnel.pdf • Complete reading Rosenstock Chapters 23.1-23.3 (optional) • View clinical diagnosis and management mini-lecture |
| Occupational asthma | | | |
| 4/12a | Background & epidemiology <ul style="list-style-type: none"> • Review scenario • Epi Q&A | Spector | <ul style="list-style-type: none"> • Read scenario: Spray-on truck bed lining • Read Bonauto 2006, p. 1-2: http://www.lni.wa.gov/Safety/Research/Files/AsthmaCme.pdf • View asthma epidemiology mini-lecture |
| 4/12b | Pathophysiology & diagnosis <ul style="list-style-type: none"> • Review case ❖ Student presentation: serial peak flow testing • Revisit case | Spector | <ul style="list-style-type: none"> • Read asthma case • View spirometry/PEF video: https://www.youtube.com/watch?v=M4C8EInOMOI • View spirometry video: https://www.youtube.com/watch?v=yNDKD_xl684 • Read Bonauto 2006, p. 2-14: http://www.lni.wa.gov/Safety/Research/Files/AsthmaCme.pdf • View asthma pathophysiology mini-lecture |
| 4/14a | Population management <ul style="list-style-type: none"> • Occupational asthma surveillance | Carolyn Whitaker, MS CIH, WA L&I SHARP, Occupational asthma surveillance program | <ul style="list-style-type: none"> • Read Bauer 2013 (optional) • Read Baker 1989 (optional) • Read SHARP work-related asthma report: http://www.lni.wa.gov/Safety/Research/Files/AsthmaTechSumm.pdf • Complete reading Bonauto 2006: http://www.lni.wa.gov/Safety/Research/Files/AsthmaCme.pdf |
| 4/14b/ <i>Clinical lab</i> | <i>Case studies in occupational asthma & the differential diagnosis</i> | <i>Cora Sack, MD</i> | <ul style="list-style-type: none"> • View clinical diagnosis and management mini-lecture • Review PFT summary/clinical cases (optional): https://www.youtube.com/watch?v=6mZmpHycSuQ • Read Tarlo 2008 (optional)⁵ • Read Shusterman 2003 (optional)⁶ |

⁵ Tarlo, S. M., Balmes, J., Balkissoon, R., Beach, J., Beckett, W., Bernstein, D., ... Heitzer, J. (2008). Diagnosis and management of work-related asthma: American College Of Chest Physicians Consensus Statement. *Chest*, 134(3 Suppl), 1S–41S.

⁶ Shusterman D. Review of the Upper Airway, Including Olfaction, as Mediator of Symptoms. *Environ Health Perspect* 110(suppl 4):649–653 (2002).

| Low back musculoskeletal disorders | | | |
|---|---|---|--|
| 4/19a | Background & epidemiology <ul style="list-style-type: none"> • Review scenario • Epi Q&A • Revisit scenario | Spector/Students | <ul style="list-style-type: none"> • Read scenario: Warehouse work • Watch EWU warehouse video: https://www.youtube.com/watch?v=J3-5DPWQIj8 • Read Rosenstock Chapter 23.4, p. 527 (optional) • View back epidemiology mini-lecture • Read NIOSH MSK & workplace factors 1997 Report, Executive Summary (x-xii) & Ch. 6: http://www.cdc.gov/niosh/docs/97-141/pdfs/97-141.pdf |
| 4/19b | Pathophysiology & diagnosis <ul style="list-style-type: none"> • Review case ❖ Student presentation: lumbar spine MRI • Revisit case | Spector/Students | <ul style="list-style-type: none"> • Read back low back disorders case • View ABIM history/imaging video: https://www.youtube.com/watch?v=cJLuxDbBs1w • Read Rosenstock Chapter 23.4, p. 528-529 (optional) • Read Deyo 2002⁷ • View back pathophysiology mini-lecture |
| 4/21a | Population management: Medical guidelines & coverage policies (lumbar fusion example) | Nicholas Reul, MD MPH, WA L&I Associate Medical Director for Occupational Disease | <ul style="list-style-type: none"> • Read Juratli 2006⁸ & Martin 2014⁹ (optional) • Read HTCC lumbar fusion summary: http://www.hca.wa.gov/hta/Documents/lumbar_fusion-rr_final_findings_decision_012016.pdf • Browse L&I lumbar fusion medical guidelines: http://www.lni.wa.gov/ClaimsIns/Files/OMD/MedTreat/LumbarfusionUpdate020216.pdf |
| 4/21b/ Clinical lab | <i>Spine clinical cases</i> | <i>Chris Standaert, MD</i> | <ul style="list-style-type: none"> • Read Rosenstock Chapter 23.4, p. 529-531 (optional) • Browse FRQ/FRI tool • View clinical diagnosis and management mini-lecture • View spine exam video: https://www.youtube.com/watch?v=MsUmSdHxR8E |

⁷ Deyo, R. A. (2002). Diagnostic evaluation of LBP: reaching a specific diagnosis is often impossible. *Archives of Internal Medicine*, 162(13), 1444–7.

⁸ Juratli, M., Franklin, G. M., Mirza, S. K., Wickizer, T. M., & Fulton-Kehoe, D. (2006). Lumbar fusion outcomes in Washington State workers' compensation. *Spine*, 31(23), 2715–23.

⁹ Martin, B. I., Franklin, G. M., Deyo, R. A., Wickizer, T. M., Lurie, J. D., & Mirza, S. K. (2014). How do coverage policies influence practice patterns, safety, and cost of initial lumbar fusion surgery? A population-based comparison of workers' compensation systems. *The Spine Journal : Official Journal of the North American Spine Society*, 14(7), 1237–46.

| Asbestosis | | | |
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| 4/26a | Background & epidemiology <ul style="list-style-type: none"> • Review scenario • Epi Q&A ❖ Student-led discussion: Antao article (exposure/disease relationship) | Spector/Students | <ul style="list-style-type: none"> • Read scenario: Libby, MT • View EPA Libby Montana video: https://www.youtube.com/watch?v=N57nsLiAt1k • Read Rosenstock Chapter 19.8, p. 364-5 (optional) • View asbestosis epidemiology mini-lecture • Read Antao 2012¹⁰ |
| 4/26b | Pathophysiology & diagnosis <ul style="list-style-type: none"> • Review case ❖ Student presentation: chest X-ray • Revisit case | Spector/Students | <ul style="list-style-type: none"> • Read asbestosis case • View SFGH video: https://www.youtube.com/watch?v=TCQErT3G_Pc to 12:18 • Read Rosenstock Chapter 19.8, p. 366-71 (optional) • View asbestosis pathophysiology mini-lecture |
| 4/28a | Population management <ul style="list-style-type: none"> ❖ Student led-discussion: Asbestos medical surveillance program | Students | <ul style="list-style-type: none"> • Complete viewing SFGH video: https://www.youtube.com/watch?v=TCQErT3G_Pc • Read Rosenstock Chapter 19.8, p. 374-77 (optional) • Review OSHA asbestos standard, medical surveillance section (1910.1001(l)): https://www.osha.gov/pls/oshaweb/owadis.show_document?p_table=standards&p_id=9995 |
| 4/28b/ Clinical lab | <i>Pneumoconioses (radiology)</i> | <i>David Godwin, MD</i> | <ul style="list-style-type: none"> • Complete reading Rosenstock Chapter 19.8 • View clinical diagnosis and management mini-lecture |
| Allergic contact dermatitis | | | |
| 5/3a | Background & epidemiology <ul style="list-style-type: none"> • Review scenario • Epi Q&A ❖ Student-led discussion: Maier 2009 (exposure/disease relationship) | Spector/Students | <ul style="list-style-type: none"> • Read scenario: Healthcare gluteraldehyde use • View ACD video: https://www.youtube.com/watch?v=HNb7gETA9K0 • View ACD epidemiology mini-lecture • Read Maier 2009¹¹ |
| 5/3b | Pathophysiology & diagnosis <ul style="list-style-type: none"> • Review case ❖ Student presentation: rashes | Spector/Students | <ul style="list-style-type: none"> • Read dermatitis case • View patch testing video: https://www.youtube.com/watch?v=1G1-RC3W6pE&list=UUGgxNwa59cec |

¹⁰ Antao, V. C., Larson, T. C., & Horton, D. K. (2012). Libby vermiculite exposure and risk of developing asbestos-related lung and pleural diseases. *Current Opinion in Pulmonary Medicine*, 18(2), 161–7.

¹¹ Maier et al (2009). Hand dermatitis: A focus on allergic contact dermatitis to biocides, *Dermatol Clin.* 27(3), 251–64.

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| | | | gGIWbNfAr3g <ul style="list-style-type: none"> • Read Rosenstock Chapter 29, p. 695-699, 706-707 (optional) • View ACD pathophysiology mini-lecture |
| 5/5/ <i>Clinical lab</i> | <ul style="list-style-type: none"> • Occupational dermatitis | Marshall Welch, MD | <ul style="list-style-type: none"> • Complete reading Rosenstock Chapter 29.1-29.2 (optional) • View ACD diagnosis and management mini-lecture |
| Lead neuropathy | | | |
| 5/10a | Background & epidemiology <ul style="list-style-type: none"> • Review scenario • Review case • Epi Q&A | Spector/Students | <ul style="list-style-type: none"> • Read scenario: Firing range exposures • Read news article: http://www.seattletimes.com/seattle-news/gun-range-under-fire-over-lead-in-blood-of-workers/ • Read Rosenstock Chapter 28.2, p. 661 (optional) • View lead neuropathy epidemiology mini-lecture • Read lead neuropathy case • View neuro exam video: https://www.youtube.com/watch?v=yfBVYYd09cs |
| 5/12a | Pathophysiology & diagnosis <ul style="list-style-type: none"> ❖ Student-led discussion: Kosnett article (exposure/disease relationship) | Spector/Students | <ul style="list-style-type: none"> • Read Rosenstock Chapter 28.2, p. 661-665, 667-670 (optional) • View toxic neuropathy pathophysiology mini-lecture • Read Kosnett 2007¹² to p. 467 |
| 5/12b | Population management <ul style="list-style-type: none"> ❖ Student-led discussion: Health hazard evaluation | Students/Jenna Gibbs, PhD | <ul style="list-style-type: none"> • Read Rosenstock Chapter 28.2, p. 671 (optional) • Read about NIOSH HHEs: http://www.cdc.gov/niosh/hhe/default.html |
| 5/10b/ <i>Clinical lab</i> (clinical students only) | <i>Toxic and compressive neuropathy clinical cases</i> | Eric Kraus, MD | <ul style="list-style-type: none"> • Complete reading Rosenstock Chapter 28.2 (optional) • Complete reading Kosnett 2007 View clinical diagnosis and management mini-lecture |
| Silicosis | | | |
| 5/17a | Background & epidemiology <ul style="list-style-type: none"> • Review scenario • Epi Q&A ❖ Student-led discussion: Rice article (exposure/disease relationship) | Spector/Students | <ul style="list-style-type: none"> • Read scenario: Countertop manufacturing in Spain • View DOL “Stop Silicosis” video: https://www.youtube.com/watch?v=GtYErK9KjQ8&list=PLB2D73D558B4F85BC&index=4 • Read Rosenstock Chapter 19.9, p. |

¹² Kosnett, M. J., Wedeen, R. P., Rothenberg, S. J., Hipkins, K. L., Materna, B. L., Schwartz, B. S., ... Woolf, A. (2007). Recommendations for medical management of adult lead exposure. *Environmental Health Perspectives*, 115(3), 463–71.

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| | | | 380 (optional) |
| | | | <ul style="list-style-type: none"> View silicosis epidemiology mini-lecture Read Rice 1995¹³ |
| 5/17b | Pathophysiology & diagnosis <ul style="list-style-type: none"> Review case ❖ Student presentation: Chest CT Revisit case | Spector/Students | <ul style="list-style-type: none"> Read silicosis case View OSHA video: https://www.youtube.com/watch?v=eXsGJ1C4Xcw&feature=youtu.be to 5:30 Read Rosenstock Chapter 19.9, p. 380-387 (optional) View asbestosis pathophysiology mini-lecture |
| 5/19a | Population management: Rule making | Nicholas Reul, MD MPH, WA L&I Associate Medical Director for Occupational Disease | <ul style="list-style-type: none"> Read NY Times article: http://www.nytimes.com/2016/03/24/business/new-rules-aim-to-reduce-silica-exposure-at-work-sites.html?_r=1 Browse Federal Register website (Occupational Exposure to Crystalline Silica): https://www.federalregister.gov/regulations/1218-AB70/occupational-exposure-to-crystalline-silica Browse OSHA rulemaking flow sheet: https://canvas.uw.edu/courses/1040387/files/35593318/download?wrap=1 Read OSHA Fact Sheet (OSHA's Proposed Crystalline Silica Rule: Overview): https://www.osha.gov/silica/factsheets/OSHA_FS-3683_Silica_Overview.pdf Read Rosenstock Chapter 19.9, p. 388-389 (optional) |
| 5/19 b/ Clinical lab | <i>Occupational interstitial lung disease</i> | <i>Richard Kim, MD</i> | <ul style="list-style-type: none"> <i>Complete reading Rosenstock Chapter 19.9-19.11 (optional)</i> <i>View clinical diagnosis and management mini-lecture</i> |
| Noise-induced hearing loss (NIHL) | | | |
| 5/24a | Background & epidemiology <ul style="list-style-type: none"> Review scenario Epi Q&A ❖ Student-led discussion: Seixas article (exposure/disease relationship) | Spector/Students | <ul style="list-style-type: none"> Read scenario: Construction noise View WorkSafe BC noise video: https://www.youtube.com/watch?v=CtONwppb6Bw View British NIHL video: https://www.youtube.com/watch?v=pBMqO53ppOs |

¹³ Rice, F. L., & Stayner, L. T. (1995). Assessment of silicosis risk for occupational exposure to crystalline silica. *Scandinavian Journal of Work, Environment & Health*, 21 Suppl 2, 87–90.

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| | | | <ul style="list-style-type: none"> • Read Rosenstock Chapter 20.2, p. 426 (optional) • View NIHL epidemiology mini-lecture • Read Seixas 2012 ¹⁴ |
| 5/24b | Pathophysiology & diagnosis <ul style="list-style-type: none"> • Review case ❖ Student presentation: hearing exam maneuvers (Rinne, Weber) • Revisit case | Spector/Students | <ul style="list-style-type: none"> • Read NIHL case • Read Rosenstock Chapter 20.2, p. 426-432 (optional) • View audiometry video (starting at 0:47): https://www.youtube.com/watch?v=1fRcb7G1jgA View NIHL pathophysiology mini-lecture |
| 5/26a | Population management <ul style="list-style-type: none"> ❖ Student-led discussion: Hearing conservation program – audiometric testing | Students | <ul style="list-style-type: none"> • Read OSHA general industry occupational noise exposure standard, hearing conservation program, audiometric testing program (1910.95(g)): https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=STANDARDS&p_id=9735 Read Rosenstock Chapter 20.2, p. 432-434 (optional) |
| 5/26b/ Clinical lab | <i>Hearing clinical cases</i> | <i>Mary McDaniel, AuD, CC-A, CPS/A, Pacific Hearing Conservation, Inc.</i> | <ul style="list-style-type: none"> • Complete reading Rosenstock Chapters 20.2 & 20.3 (optional) • View clinical diagnosis and management mini-lecture |
| Emerging/global occupational diseases | | | |
| 5/31 | Student presentations | Students | |
| 6/2a | Student presentations | Students | |
| 6/2b | Wrap-up and course evaluations | Spector | |
| TBD | <i>Final Exam</i> | | |

❖ Indicates a student-led discussion or presentation

* a = 8:30-9:20 am session; b = 9:30-10:20 am session

¹⁴ Seixas, N. S., Neitzel, R., Stover, B., Sheppard, L., Feeney, P., Mills, D., & Kujawa, S. (2012). 10-Year prospective study of noise exposure and hearing damage among construction workers. *Occupational and Environmental Medicine*, 69(9), 643–50.