Bio262: Cases in Environmental Health

9:40-10:55am TR Chambers 1015

Environmental Health focuses on the factors external to people that have health implications. In this seminar you will develop skills in literature research, critical analysis, and communication exploring the intersection between cell biology, public health and the environment. Broad topics include regional and global examples investigating air quality, water quality and exposure to environmental chemicals. Working in trios, you will define sub areas such as home air quality, water purification byproducts, or mercury. You will use research, creativity, and communication skills to compile materials and develop case studies that are appropriate for use in undergraduate cell biology courses. Prereq: one 100 level Biology w/lab course

Note: This is a course where you will *develop* pedagogically sound case studies and associated materials that extend cases involving detrimental environmental conditions to the cellular mechanisms that may be affected. This is *not* a course where you will be introduced to cell biology through a set of prewritten case studies.

Course Goals

Through this course you will

1. Develop audience appropriate materials connecting Cell biology content and Environmental health-related case context in pedagogically sound case studies
2. Synthesize information from diverse sources to integrate cell biology content and questions in order to form a case study

In working toward these goals you will gain proficiency

A. Communicating and collaborating within a group
B. Reading and analyzing primary literature
C. Understanding pedagogical theory and research behind case study approaches
D. Finding and citing appropriate sources in Pedagogy, Biology and Chemistry
E. Identifying Cell Biology topics underlying articles in the literature
F. Understanding foundational topics in Cell Biology

Attendance policy and Participation: This is a seminar therefore participation is key. An 'A' in participation requires consistent and very high quality preparation and participation inside and outside of official class meetings. If you did not complete a written assignment you would expect to get a '0' on it. Being unprepared, not making it to meetings or contributing in your group, never speaking is equivalent to forgetting to complete this assignment and will be evaluated as such.

Questions Ask early and often! Talk to me during or after class, by email or in my office. I am happy to review drafts of papers *if* you get them to me at least 3 days before due date. (so I can comment and you can revise). I provide a lot of feedback. Read the comments to learn ways improve. Progress is the expectation.

Assignment 'Weight'	
Case 1 Annotated biblio. (i; 1%) Setup + Materials feedback (i; 3%) Case Setup + Materials (g; 10%)	14%
Case 2 Annotated biblio. (i; 2%) Outline (g; 2%) Progress report (g; 2%) Case Setup + Materials + Annotated Biblio (g; 15%) 10min Overview (g; 7%)	28%
Case 3 Description (g; 1%) Outline (g; 2%) Progress report (g; 2%) Presentation (30min) (g:10%) Individ Annotated Biblio (i; 3%) Case Annotated Biblio (g; 3%) Case Setup + Materials + Assessment tool (g; 18%)	39%
Content quizzes (3)	9%
Participation (class & group)	10%

Grade Scale				
A 100-93	**B+** 89-87	**C+** 79-77	**D+** 69-67	**F** < 59
A- 92-90	**B** 86-83	**C** 76-73	**D** 66-60	
	B- 82-80	**C-** 72-70		

Note that the due dates/times may be outside of scheduled class meetings. All assignment dates are scheduled now and the dates will not change. Make sure you put them in your schedule now. In life many things must be completed by deadlines, applications, work projects etc. Miss the submission deadline, by even a minute, and you have no shot at that funding, that med or grad school spot, or that job. In this course late assignments are penalized (subtract 5% for 1min late and an additional 5% for every 60min after that). I realize how busy all of our schedules are. Balancing the 'weight' of one assignment vs. another commitment (academic, family, athletic, social), prioritizing and planning are skills that will serve you well throughout life. Use them here. In addition, because the class is designed so that you gain proficiency in group work and communication—you have other people relying on you doing your part.
I must be notified as soon as possible for the rare possibility of arrangements that vary from those in the syllabus (not the day or the hour it is due).

Your case materials will involve group work. Work together—each person having a role but also knowing about all the other parts. Be sure to include proper in-text references and end of paper bibliographies for all sources used-- this includes lab manuals and online resources as well as texts and journal articles. Bibliographic references to texts and articles must follow the style and format used in the journal Cell. References to online resources (websites only) must follow the CSE format for online sources (see http://bcs.bedfordstmartins.com/resdoc5e/RES5e_ch11_s1-0003.html use #10 Homepage of a website

and #11 Short work from a website only). There is no such thing as the 'three source rule' and not providing proper credit is plagiarizing. Read the DEPARTMENTAL STATEMENT ON PLAGIARISM. If you have questions--- ASK BEFORE YOU TURN SOMETHING IN.

Additional Resources: Don't think that you can do it all on your own in your room—our librarians are wonderful resources.

- **Research Consultations** http://davidson.libguides.com/content.php?pid=364785&sid=2985441#10498729 The librarians will be happy to work with students one-on-one. We offer two types of consultations: drop-in consultations and scheduled consultations
- **Research Rescue in the Fishbowl** http://davidson.libguides.com/content.php?pid=364785&sid=2985441#10498733 Back by popular demand! A team of librarians will be available to answer questions and assist students with their research. Starting Thursday, 30 August, the hours for Research Rescue will be: **Monday: 2-4 pm Thursday: 11 am – 12:30 pm**

Accommodations for Students With Disabilities: I am happy to provide accommodations for students with learning or physical disabilities. If you are a student with a learning disability documented by Davidson College please identify yourself to me within the first two weeks of class so that arrangements can be made. Students with other disabilities are encouraged to self-identify so that we may discuss if there is any way in which I can make accommodations that will enhance your learning experience. All such discussions will be fully confidential unless you otherwise stipulate.

Class Schedule Fall 2012

Week	Topic
Case Study Case Study: G.1/ P.A, C, D	
8/27 T	**Read:** 1) Class Syllabus 2) Departmental Statement on Plagiarism== link from department website/ class website **In class:** Introductions. Course goals.
R	*COMPLETE Moodle assignment* **before** *8:15am this morning* Overview of Environmental Health Scope and Contents
9/3 T	Continue Env Health Scope and Contents Discussion Introduce the Case study case study Type assigned
R	**MEET IN Fishbowl IN LITTLE LIBRARY:** Finding citations, getting resources. Work in 'type' groups
9/10 T	*SUBMIT Case Study annotated bibliography (3 sources) due before 9:30am TUESDAY* Case Group work→ Planning and approach
R	*'Bring' Case Study Setup Draft* **MEET IN Fishbowl IN LITTLE LIBRARY:** Using refworks to your advantage
9/17 T	*SUBMIT Case study setup and materials by 9:30am TUESDAY* Group discussion and feedback
R	*BEFORE CLASS read through Lead Case Study (do not have to do the external assignments)* http://www.uic.edu/sph/glakes/kids/case3/ *SUBMIT Case study case study comments by 9:30am FRIDAY* *COMPLETE Unit Assessments on Moodle: AVAIL. FRIDAY 9:30am through SATURDAY MIDNIGHT (2 parts—survey and content)* Discuss how an Env Health case study might be similar and different Introduce Lead Case Study Assignment: "Extend-a-Case"
Extend a Case Case Study: G.1 & G.2 / P.A, B, D, E, F	
9/24 T	**Leading into Lead** Lead paper 1 discussion— working through a research article Krasovskii et al. 1979 (All articles are available on Moodle)
R	*Submit Revised Case Study Case Study by 8am MONDAY* Lead paper 2 discussion— working through a research article Schneider et al. 2003 Lead paper 3 discussion— working through a review article Brochin et al. 2008
10/1 T	Lead paper 4 discussion—working through a review article Verstraeten08 (Skim Aluminum section, focus on Lead) Jomova et al 2011 (Focus on Lead)
R	What have we learned (about lead)? What don't we know (about cells)? Groups brainstorm Cell Biology of Lead assignment topics (List of 3 potential topics due at end of class) **Topic assignments will be emailed to groups Friday**
10/8 T	**Cell Biology of Lead: Focus 1: Sources** *SUBMIT (individually) by 9:30am TUESDAY: 3 source annotated bibliography regarding*

	sources of lead exposure and levels. 'Levels' includes: levels in a defined region or area, levels of exposure, levels allowable Discuss sources, levels, and regulations→ combine information
R	**Cell Biology of Lead: Focus 2: Routes of Exposure (physiology)**
10/15 T	**Fall Break: No class**
R	**Cell Biology of Lead: Focus 3: Cellular Effects (Group investigations)** *SUBMIT (group) by 9:30am THURSDAY: Outline of for researching/covering your topic including a) type of case study chosen b) goals of case study c) timeline and division of assignments among group members.* Group meetings w/ Dr B. to discuss and approve outlines
10/22 T	**Cellular Effects (Group investigations)** Group work
R	**Cellular Effects (Group investigations)** *SUBMIT by 9:30am THURSDAY progress report→ revised outline with status of steps indicated* Group work in computer lab Group meetings w/ Dr. B discuss progress, articles
10/29 T	**Cellular Effects (Group investigations)** Group work
R	*SUBMIT Cell Biology of Lead Case Study: Setup and Materials by 8:15am WED (Materials must include an annotated bibliography.)* *COMPLETE Cell Biology of Lead Assessment on Moodle: AVAIL 4pm THURSDAY through MIDNIGHT FRIDAY (Feedback and content quiz)* *IN CLASS Each group will PRESENT a 10min overview* **of the cell biology covered in their case study.** What have we learned? Teaching it to others Introduction to Your Favorite Case Study Assignment: "Develop a Case". Your case needs a) environmental component b) Connected cell biology areas that are *different* from one your group developed in previous case. In addition, topics should *not* be immunology or direct DNA mutation. ***Source: Center for Disease Control;*** *Agency for Toxic Substances and Disease* **http://www.atsdr.cdc.gov/toxprofiles/index.asp**
Develop a Case Case Study: G.1 & G.2 / P.A, B, D, E, F	
11/5 T	**YFCSA** *BRING Description of 2 possible cases for development: Make sure they fit the a and b requirements above* Group meetings w/ Dr. B to discuss and approve topics
R	**YFCSA** *SUBMIT Outline of for researching/covering your topic including a) type of case study chosen b) goals of case study c) timeline and division of assignments among group members by 9:30am. THURSDAY* Group work in computer lab Group meetings w/ Dr. B to discuss and approve outlines
11/12 T	**YFCSA** *SUBMIT (individually) by 9:30am TUESDAY: 4 source annotated bibliography regarding your case. Appropriate sources discuss the source, regulation, cellular effect and foundational cell biology connected with your environmental component.*

	Group work
R	**YFCSA** *SUBMIT progress report by midnight WEDNESDAY→ Report includes 1) revised outline with status of steps indicated. 2) Draft of setup* Group meetings w/ Dr. B discuss progress, articles, prep for presentations
11/19 **T**	**YFCSA** *SUBMIT (group/full case) Annotated Bibliography by 4pm TUESDAY* Group work
R	**Thanksgiving Break**
11/26 **T**	**YFCSA** *What have you learned? Teaching it to others* *2 groups PRESENT brief enviro background and more in depth cell bio topics (30min)*
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12/3 **T**	**YFCSA** **Developing Assessment for your case** **Course evaluations**
R	**YFCSA** Group meetings w/ Dr. B Where do we stand? What have we learned?
12/10 **T**	*SUBMIT Your Favorite Case Study Setup, Materials, Assessment tool by 10am TUESDAY* *COMPLETE Course Assessments on Moodle: AVAIL. TUESDAY 5pm through FRIDAY MIDNIGHT (Feedback on course, group, and content quiz)*