BIOLOGY IN PUBLIC HEALTH CPH 405/505
SPRING 2016

Time: Tuesdays 1:00 till 3:50 PM
Location: Drachman Hall, Room A118

Instructors: Burris ‘Duke’ Duncan, MD
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Email: brduncan@email.arizona.edu

Elizabeth S. Valdez, MPH
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Phone: (520) 561-7871
Email: salerno@email.arizona.edu

Teaching Assistant: Angela Urbon-Bonine
Office hours: 11:30-12:30 Tuesdays or by appointment
Office: TBA
Email: apurbon@email.arizona.edu

Guest Lecturers are listed in the sequence of lectures below.

Office Hours: Dr. Duncan and Mrs. Valdez and Mrs. Urbon-Bonine are available by appointment.

Catalog Description: This course introduces non-biologists to human disease and its impact on public health. Major diseases with significant public health relevance illustrate basic biological concepts, and students are asked to relate this to the impact of the disease on society. Graduate-level requirements include analysis of the primary literature.

Course Description:
This course is designed for non-biology majors. It will provide the basic physiological background to various disease states or conditions discussed by the instructors and students. The students will be taught how to do background research on the biology of a disease, summarize it, and present it along with a current disease state or condition of public health importance. The necessity of understanding basic biology will be demonstrated in clinical lectures through data analysis and discussion of treatment or available interventions. The public health aspects will be discussed by the instructors and illuminated by individuals who have the discussed condition.
The students will have a unique opportunity of listening to the story of a person with the condition and asking questions to further clarify what it is like to have the condition; its effect on the individual, on the family dynamics, and on the community.

The students will review articles and public health reports of their choosing relevant to the condition they are most interested in learning more about. Students will also have the opportunity of explaining the condition from the biological and public health perspective orally to their peers and in written form to the instructors.

**Course Prerequisites:** None.

**Course Learning Objectives:**
At the end of the course students will be able to:
1. Evaluate biochemical and physiological literature for its biomedical importance to the individual and its public health implications.
2. Present in oral and written forms a concise summary of the biological mechanisms and public health consequences involved in a disease state or condition.

**Program Competencies Covered:**

<table>
<thead>
<tr>
<th>Learning Outcome</th>
<th>Related MEZCOPH Core competencies for MPH</th>
<th>Method of Assessment</th>
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<tbody>
<tr>
<td>1. Evaluate biochemical and physiological literature for its biomedical importance to the individual and its public health implications.</td>
<td>A 2,3,5,6,7 B 2</td>
<td>Individual participation in class discussions, quality of the questions submitted each week, and final examination</td>
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<td>2. Give an oral presentation based on a review of the biologic and ‘gray’ literature of the biological mechanisms and public health consequences involved in a disease state or condition.</td>
<td>A 1,2,3,4,5,6,7 B 1,2,3,5, 6</td>
<td>Individual presentation to your peers</td>
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<tr>
<td>3. Write a concise summary of the biological mechanisms and public health consequences involved in a disease state or condition.</td>
<td>B 1,2,3</td>
<td>Quality of an individual written report (completeness, logical sequence,</td>
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**Course Notes:** None.

**Required Texts/Readings:** The China Study by Colin Campbell, PhD

**Course Requirements:**
- A large portion of the book The China Study will be required reading.
- [http://well.blogs.nytimes.com/2011/01/07/nutrition-advice-from-the-china-study/?_r=0](http://well.blogs.nytimes.com/2011/01/07/nutrition-advice-from-the-china-study/?_r=0)
- Instructors and guest lecturers will present the biology (individual) of each condition followed by the effect the condition has on the family and on the community (public health). (2:00-2:50)
- Whenever possible a person with the condition will present their story and explain how the condition has personally affected them, their family dynamics, and the ease or dis-ease they have had fitting into the community and the level of acceptance from the community. (3:00-3:50)
Weekly Quizzes:

- Each student is required to submit **6 quiz questions and their corresponding answers** at the beginning of each class: 1 question from the lecture, 2 questions on the week's readings and 3 questions on the student presentations. The questions should take the following format: 2 multiple questions, 2 short answer questions, and 2 True/False questions. **ATTN:** each question must include the corresponding answer for full points. The weekly quiz questions will be posted in this section on D2L so you can use them as a reference for the final exam. The final exam will be a compilation of selected quiz questions from the semester.
- After the quizzes are graded, they will not be handed back to each student but if you would like to review your quiz, please see Angela during her office hours. At the end of the semester, all quizzes will be available to take home to keep for your reference in preparation for the final exam.

Class Participation:

- Students are expected to attend all classes. Weekly quizzes will be used to determine a student’s attendance history and participation points will be granted for each quiz submitted.

Oral Presentations and Written Report: Students will select the topic that most interests them and work in teams.

- On the week following the presentation of the topic by the instructor or the invited guest, the team working on the topic presented the previous week will present their review of the biological and gray literature on that topic and give their perspective of the condition from the standpoint of the individual, the family, and the community. (2:00-2:50)
- A good portion of the presentation will be suggestions of what they as a public health professional might do to minimize the effect of the condition.
- Each student will write and submit a separate report the week of their presentation. It should not involve an issues covered by the presenter from the previous week. Whereas each student’s section should be distinct, the pieces should fit together in a logical composite with a central theme. The written report should be no more than 5 double-spaced pages (11-12 point font, 1" margins) excluding references (5 from the PRIMARY literature, additional references can be from the gray literature). It is expected that the report be concise and that the flow of ideas and concepts is presented in a logical sequence. A draft is to be submitted electronically on the day of the oral presentation. If the report is not submitted on the day of the presentation, 2 points will be subtracted for each day that the report is late. The report will be read, comments made, a grade assigned and the report returned to the student. A revised final report is due two weeks after receiving comments. In order to maximize the final grade, students should review the comments, make appropriate revisions or explain why a comment was not accepted.
- Readings – 50-75 pages each week taken from book chapters and/or articles
- At the beginning of class, you will be asked to turn in quiz questions from the prior class as well as the week’s readings. Quiz questions will total a possible 55 points.
- The final exam will consist of multiple choice questions and short answers based on the readings and presentations by the speakers.
- At the beginning of the semester, each student will start with a grade of zero (0). As the semester unfolds, students will gain points as outlined below. In this way, students will know exactly where they stand throughout the semester and extra points can be earned by writing additional reports.
Grading/Student Evaluation:

A. Undergraduate Student Evaluation Points
1. Weekly quizzes 55 points
2. Oral presentation 100 points
3. Written report 200 points
4. Class participation 45 points
5. Final quiz 100 points

Total Points Possible 500 points

Graduate Student Evaluation Points
1. Weekly quizzes 55 points
2. Public health aspect 55 points
3. Oral presentation 100 points
4. Written report 200 points
5. Class participation 45 points
6. Article summaries 150 points
7. Final quiz 100 points

Total Points Possible 705 points

Final quiz will include multiple choice and short essay questions taken from reading in hand-outs (~50%) and lectures/class presentations (~50%).

B. Grading System

Points Grade, Undergraduate Points Grade, Graduate
A 451 – 500 A 635 - 705
B 401 – 450 B 570 - 634
C 351 – 400 C 505 - 569
D 301 – 350 D 440 - 504
F < 349 F < 389

Graduate students taking the 505 rendition of this course:
Graduate students will be asked to complete all requirements expected of undergraduates. They will work in the graduate-student only groups and increased emphasis will be placed on citation and interpretation of the primary literature.

Additional graduate student requirements include
1) Two 2-3 sentence statements at the end of each weekly session:
   a) A way in which public health initiatives have improved life for people with the condition discussed;
   b) A public health proposal that addresses an outstanding need for this population
2) Literature review of three course topics. The student is to scan the literature searching for a recent (past 5 years) article relevant to one of the weekly topics that he/she feel is important from a public health standpoint, summarize the article, and write a commentary of why he/she felt the article was important. The summary is limited to 250 words and the commentary to 500 words. The commentary should contain at least 5 references. The first summary is due February 16th, the second March 8th, and the third April 19th.
3) A longer paper on the topic presented with more references from the primary literature. Graduate student manuscripts should be 8 pages rather than 5 and should cite 10 articles from the primary literature.

Class Attendance/Participation:
It is expected that students will attend all lectures and to participate in all discussions. All holidays and special events observed by organized religions will be honored for those students who show affiliation with that particular religion. Absences pre-approved by the UA Dean of Students will be honored.

Course Schedule: Please turn off your cell phones and close your laptop computers

NOTE: Class begins at 1:00 sharp
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<thead>
<tr>
<th>Date</th>
<th>Topics</th>
<th>Instructors and Invited guests</th>
<th>Readings</th>
<th>Student topic for presentation</th>
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<tbody>
<tr>
<td>Week 1 1/19</td>
<td>Introduction to the syllabus, the course, &amp; instructors (1 - 1:50) Pregnancy - epigenetics nutrition and stress (1:50 – 2:50) Effect of catastrophic injury on an individual, family, and community (300 – 3:50)</td>
<td>Duke Duncan Libby Salerno Film: “In the Womb Identical twins” (46 minutes) Valon Osmani</td>
<td>Ghosts from the Nursery Ch. 2</td>
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<td>Week 2 1/26</td>
<td>The China Study</td>
<td>Libby Salerno-Duke Duncan “Plant-pure Nation” - nutrition “Unnatural Causes” - stress</td>
<td>The China Study Introduction Chapters 2 and 4</td>
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<td>Week 3 2/2</td>
<td>How to search the literature: biologic and gray literature (Bring your laptop)</td>
<td>Research librarians Annabelle Nunez Mari Stoddard MEZCOPH</td>
<td>Genetics of Developmental Disabilities Ch. 18</td>
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<td>Week 4 2/9</td>
<td>Infancy and child</td>
<td>Angela Urbon-Bonine and Christie Clauson</td>
<td>Ghosts from the Nursery Ch. 3 &amp; 4</td>
<td>Pregnancy (turn in paper on 2/11)</td>
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<td>Week 5 2/16</td>
<td>Chronic disabilities for childhood: Ex. cerebral palsy and spina bifida</td>
<td>Duke Duncan and Noni Minenko with Peyton Harris &amp; Jesus Morales - “Disabilities: a life course approach” Ch. 3 Disabilities and Childhood Pages 61-87</td>
<td>Infancy and child 1st MPH summary due</td>
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<td>Week 6 2/23</td>
<td>Infectious diseases including HIV/AIDS, immunizations</td>
<td>Sean Elliott, MD and An individual with chronic infection</td>
<td>Chronic disabilities in childhood</td>
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<td>Week 7 3/1</td>
<td>Autism the spectrum</td>
<td>Sydney Rice, MD and Mother of child with autism</td>
<td>Infectious diseases</td>
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<td>Week 8 3/8</td>
<td>Child abuse</td>
<td>Duke Duncan-Libby Salerno Sally Bedrick – with teenage foster child</td>
<td>Autism the spectrum 2nd MPH article summary due</td>
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<td>Week 9 3/15</td>
<td>SPRING BREAK</td>
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<td>Week 10 3/22</td>
<td>Mental Health</td>
<td>Tad Pace</td>
<td>Child abuse</td>
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<td>Week 11 3/29</td>
<td>Obesity – the epidemic</td>
<td>Cyndi Thomson, PhD, RD and An individual who has recovered from obesity</td>
<td>The China Study Ch. 6</td>
<td>Mental Health</td>
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<td>Week 12 4/5</td>
<td>Diabetes</td>
<td>TBD and an individual with diabetes</td>
<td>The China Study Ch. 7</td>
<td>Obesity</td>
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<td>Week 13 4/12</td>
<td>Cancer</td>
<td>CM Laukaitis and An individual with cancer</td>
<td>Everyone’s guide to Cancer The China Study Ch. 3 and 8</td>
<td>Diabetes</td>
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<td>Week 14 4/19</td>
<td>Cardiovascular disease</td>
<td>Dr. Stan Goldberg Sunny Anne Holiday 10-day jump start</td>
<td>The China Study Ch. 5</td>
<td>Cancer 3rd MPH article summary due</td>
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<td>Week 15 4/26</td>
<td>Aging</td>
<td>Dr. Jane Mohler and An aging individual or daughter and aged parent</td>
<td>Cardiovascular disease</td>
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<td>Week 16 5/3</td>
<td>Film &amp; discussion (2 – 3:50)</td>
<td>“Justice: what is the right thing to do”</td>
<td>Aging (1:00 – 1:50)</td>
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<td>Final Quiz 5/10</td>
<td>Final Quiz Room 120</td>
<td>May 10, 2016 1pm till 3pm</td>
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Grading for reports and Presentations

Paper:
20 points can be earned in each of the following areas for both the draft and the final report:
1. Background about condition and statement of important public health problem
2. Identification of root causes and discussion of previous attempts to improve problem
3. Development of a Public Health solution to the problem (novelty, feasibility, effectiveness)
4. Basic writing (grammar, punctuation), and correct citation of the literature (biological v. gray; correct number); paper within 10% of length requirements
5. Flow of argument and appropriateness of logic; relevance of topic to public health

Someone earning 70/100 on his/her draft can earn up to 100/100 on a final report, for a total of 170/200 points. Someone happy with his/her points on the draft can turn this in unchanged and will be given those points for the final (e.g. 90/100 x 2 = 180/200).

Presentation:
20 points can be earned in each of the following areas:
1. Concise, informative presentation describing biological basis for condition and implications of the condition on a person, family and society (= statement of the problem)
2. Description of root causes of the problem
3. Outlining a Public Health solution to the problem, with discussion of probable benefits, possible barriers and comparison to past efforts
4. Effective slides (easily read, informative but not busy, no spelling errors) and effective speaking; not going over or under time by more than 10%
5. Coordination with other members of the presentation team and public health relevance of talk

Required Statements:

Communications: You are responsible for reading emails sent to your UA account from your professor and the announcements that are placed on the course web site. Information about readings, news events, your grades, assignments and other course related topics will be communicated to you with these electronic methods. The official policy can be found at: http://www.registrar.arizona.edu/emailpolicy.htm

Disability Accommodation: If you anticipate issues related to the format or requirements of this course, please meet with me. I would like us to discuss ways to ensure your full participation in the course. If you determine that formal, disability-related accommodations are necessary, it is very important that you be registered with Disability Resources (621-3268; drc.arizona.edu) and notify me of your eligibility for reasonable accommodations. We can then plan how best to coordinate your accommodations. The official policy can be found at: http://catalog.arizona.edu/2012%2D13/policies/disability.htm

Academic Integrity: All UA students are responsible for upholding the University of Arizona Code of Academic Integrity, available through the office of the Dean of Students and online: The official policy found at: http://deanofstudents.arizona.edu/codeofacademicintegrity

Classroom Behavior: (Statement of expected behavior and respectful exchange of ideas)
The Dean of Students has set up expected standards for student behaviors and has defined and identified what is disruptive and threatening behavior. This information is available at: http://deanofstudents.arizona.edu/disruptiveandthreateningstudentguidelines
Students are expected to be familiar with the UA Policy on Disruptive and Threatening Student Behavior in an Instructional Setting found at: http://policy.arizona.edu/disruptive-behavior-instructional and the Policy on Threatening Behavior by Students found at: http://deanofstudents.arizona.edu/sites/deanofstudents.arizona.edu/files/Disruptive_threat_bklt_2012.pdf

Grievance Policy: Should a student feel he or she has been treated unfairly, there are a number of resources available. With few exceptions, students should first attempt to resolve difficulties informally by bringing those concerns directly to the person responsible for the action, or with the student's graduate advisor, Assistant Dean for Student and Alumni Affairs, department head, or the immediate supervisor of the person responsible for the action. If the problem cannot be resolved informally, the student may file a formal grievance using the Graduate College Grievance Policy found at: http://grad.arizona.edu/academics/policies/academic-policies/grievance-policy

Grade Appeal Policy: http://catalog.arizona.edu/2012-13/policies/gradappeal.htm

Syllabus Changes: Information contained in the course syllabus, other than the grade and absence policies, may be subject to change with reasonable advance notice, as deemed appropriate.

Telephone and Computer Use: Turn your cell phones to silent or vibrate in order to not disrupt the class and disturb your fellow students and professor. Computers may only be used for class-related work. They must be closed when guests with a medical condition are speaking, or whenever asked by the lecturer.

Plagiarism: What counts as plagiarism?
- Copying and pasting information from a web site or another source, and then revising it so that it sounds like your original idea.
- Doing an assignment/essay/take home test with a friend and then handing in separate assignments that contain the same ideas, language, phrases, etc.
- Quoting a passage without quotation marks or citations, so that it looks like your own.
- Paraphrasing a passage without citing it, so that it looks like your own.
- Hiring another person to do your work for you, or purchasing a paper through any of the on- or off-line sources.

Reports containing plagiarized material will be awarded no credit. If you have questions about how to cite reference material, talk with the TA or instructors.