

## **Evolutionary Medicine**

*AANT 611*

*Spring 2017*

*Location: BB B004*

*Time: 5:45-8:35*

**Instructor:** Dr. Cara Ocobock

**Office:** A&S 119

**Office Hours:** Monday 12-2:30pm or by appointment

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### ***Course Description:***

Back pain, knee pain, allergies, morning sickness, and even the common cold. These are all common health problems we and most every person you know have had. But why do these health conditions exist? In this class we will investigate these questions and others by using evolutionary theory to better understand contemporary health conditions. More importantly we will ask the questions, “Will incorporating evolutionary theory into medicine improve practice and patient outcomes?” “How can we use evolutionary medicine in a public health aspect?” “Should and how can we incorporate evolutionary medicine in our own research?”

### ***Assignments:***

**Weekly (120 pts):** you will have to write a 1-2 page summary of each article for each week. These will be uploaded to blackboard or a google drive folder and shared with the entire class. These will serve as review guides for your comps. Each week is worth 10 points.

**Lead Discussion (100 pts):** You will be in charge of discussion for one week. You will have to choose the topic and the articles. You will need to send me the articles one week before your discussion day. You will then be expected to lead discussion for that week.

**Final Paper (150 pts):** You will write a review article (10-15 pages) on the topic of your choosing. It does **not** have to be the topic you chose for your discussion. The goal of a review paper is to summarize the current state of that particular subject (reviewing the currently available literatures) and then providing insight on the direction the field might consider taking to further our knowledge and understanding of that topic. More information will be given about expectations later in the semester.

**Presentation (80 pts):** You will give a conference style presentation on your final paper topic on the last day of class. This is to give you practice at podium talks if you have not already done them.

**TOTAL: 450 pts.**

***Tentative Schedule***

<b>Date</b>	<b>Topic</b>	<b>Reading</b>	<b>Leader</b>
1-25-17	Intro: What is Evolutionary Medicine? Is it helpful?	Williams & Nesse, 1991 Varki, 2012 Nesse & Williams, 1998 Alcock & Schwartz, 2011	Ocobock
2-1-17	<b>Organization &amp; MLK Talk @7pm</b>		
2-8-17	<b>NO CLASS – Ocobock at SEEPS</b>		
2-15-17	Immune responses: The Smoke Detector Principle	Nesse, 2001 Kluger, 2015 Legrand & Alcock, 2012 Harden et al., 2015	Ocobock
2-22-17	Intergenerational effects on health and disease	Azcorra et al. 2015; Carslake et al. 2016; Pollard et al. 2011	Casey West
3-1-17	DOHAD – childhood environment and adult CVD	Gaillard et al. 2013; Huang et al. 2015; Laitenin et al. 2013; Murphy et al. 2017	Kyrie Nelder
3-8-17	Labor and Delivery, Effects of Maternal Environment-fetal origins hypothesis, breastfeeding or the Paleodiet	Tully et al. 2013; Gallup et al. 2009; Gettler & McKenna 2011, Stuebe et al. 2015	Erica Tyler
3-15-17	<b>NO CLASS – Spring Break</b>		
3-22-17	Autoimmune disease relation with environment	Parke & Ollerton 2013; Nedelec et al. 2016; Fumagalli et al. 2011	Florence Lee
3-29-17	Stress - BROAD	Miller & Raison 2016; Nesse 1999; Nesse & Young 2000; Rodney & Mulligan 2014	Liz Holdsworth
4-5-17	Genetic ancestry – Apo-L and chronic kidney disease	Duster 2015; Freedman et al. 2015; Genovese 2010; Kao et al. 2008; Parsa et al. 2013; Wagner et al. 2017	Ajay Yesupriya
4-12-17	Co-evolution theory of disease – host-parasite non- human primates	Agrawal 2006; McLaughlin & Malik 2017; Liow et al. 2011; Pijnenbord et al. 2008; Sinervo & Svensson 2002	Jerred Schafer
4-19-17	<b>NO CLASS – HBA &amp; AAPA</b>		
4-26-17	Antibiotic resistance	D’Costa et al. 2011; Kamruzzaman et al. 2017; Miftahussurur et al. 2016; Turner et al. 2013	Nicole Popielarz
5-3-17	Cancer	Abegglen et al. 2015; Aktipis et al. 2015; Tomasetti et al. 2017, Sottoriva et al. 2013	Ocobock

Other topics to be covered by you lovely folks! Here are some suggestions, but many or general topics and often overlap. You will likely want to narrow your topic down.

### **Disease**

Obesity\*  
 Diabetes\*  
 Intergenerational effects on health and disease  
 Genetic ancestry and disease susceptibility  
 Cancer  
 Mental illness (depression, OCD, etc.)  
 Asthma  
 Gene Therapy  
 Immune function (or lack there of)  
 Zoobiquity

### **Sex & Reproduction**

Menstruation  
 Menopause  
 Eclampsia & Preeclampsia  
 Birth control  
 Labor & Delivery  
 Lactation  
 Effects of maternal environment – fetal origins hypothesis\*  
 Developmental origins of health and disease\*

### **Nutrition & Diet**

Obesity\*  
 Paleodiet – or other fad diets  
 Lactose intolerance  
 Microbiome  
 Diabetes\*

### **Environments and Life-Time Health**

Breastfeeding  
 Co-sleeping  
 Stress  
 Altitude  
 Addiction  
 Sleep  
 Hygiene Hypothesis  
 Aging  
 Antibiotic Resistance  
 Parasite-Host interactions  
 Effects of maternal environment – fetal origins hypothesis\*  
 Developmental origins of health and disease\*

\* Topic in more than one category

### **Grade Scale**

This course is graded on an A-E scale. Below are the minimum percentages required for each grade:

A: 93 %	A-: 90%	B+: 87%	B: 83%	B-: 80%	C+: 77%
C: 73%	C-: 70%	D+: 67%	D: 63%	D-: 60%	E: below 60%

### **Attendance**

Since a large part of this course will revolve around discussion, your attendance is crucial. Excused absences include: 1) UAlbany sporting or sanctioned event 2) Death in the family 3) Religious observance 4) Illness requiring your physical presence at a doctor or hospital 5) A professional interview. I WILL NOT provide make-up assignments for any excuse other than the five listed above. NO EXCEPTIONS! Please refer to the “Attendance and Timely Compliance

with Course Requirements” section of the university’s Undergraduate Academic Regulations for more details ([http://www.albany.edu/undergraduate\\_bulletin/regulations.html](http://www.albany.edu/undergraduate_bulletin/regulations.html)). Be aware that the University Health Center will provide medical excuses only under very specific situations ([http://www.albany.edu/health\\_center/medicaexcuse.shtml](http://www.albany.edu/health_center/medicaexcuse.shtml)).

### **Academic Integrity**

Plagiarism and cheating will not be tolerated. For full information on the University’s Standards of Academic Integrity, please see: [http://www.albany.edu/etl/academic\\_integrity.php](http://www.albany.edu/etl/academic_integrity.php).

### **Disability Services**

Reasonable accommodations will be provided for students with documented physical, sensory, systemic, cognitive, learning and psychiatric disabilities. If you believe you have a disability requiring accommodation in this class, please notify the Director of the Disability Resource Center (Campus Center 137, 442-5490). That office will provide the course instructor with verification of your disability, and will recommend appropriate accommodations.

**Please note: I reserve the right to change this syllabus at any time.**