



**Readings in Evolutionary Medicine (BIO 690 Section 5, 1 unit)
Biology Department, Spring 2019**

PLNU Mission

To Teach ~ To Shape ~ To Send

Point Loma Nazarene University exists to provide higher education in a vital Christian community where minds are engaged and challenged, character is modeled and formed, and service is an expression of faith. Being of Wesleyan heritage, we strive to be a learning community where grace is foundational, truth is pursued, and holiness is a way of life.

Course description:

Special topics courses are offered occasionally to focus on a topic of interest, or to teach a course for the first time. This semester, the special topics course will focus on Evolutionary Medicine, which is an approach to understanding human diseases and conditions from an evolutionary perspective. This is a graduate course which will focus on the reading, understanding, and presentation of relevant journal articles.

Course logistics:

Class meetings will be on Tuesdays from 6:30-8:30PM approximately every 2 weeks in Sator 116. The schedule is built entirely around the Perspectives on Science schedule so that students can take both courses.

Instructor:

Dr. Dianne Anderson

dianneanderson@pointloma.edu

619-849-2705/Office is located in Trailer #5 in the gym parking lot or Rohr Science #146

Office hours Thursdays 10-12, Fridays 1:30-3:30, or phone meetings by appointment

Course learning outcomes:

1. Identify and dissect out the key points in a body of scientific literature.
2. Distinguish between the content and value of a review article and a primary research article.
3. Relate specific current scientific research into a broader context, with an understanding of its broadly reaching benefits.
4. Effectively communicate complex scientific ideas in informal discussions, as well as in brief summative presentations.
5. Experience the communal enjoyment that comes from group exploration of new ideas and perspectives in science.

Required texts:

The required textbook is Principles of Evolutionary Medicine by Gluckman, et al., 1st edition. There will be 1-2 textbook chapters as well as 1-2 review papers, clinical briefs, or primary research papers to read in association with each of the class sessions. The papers will be posted on Canvas or you will be able to access them online. Many of the papers will come from the open-access journal titled Evolution, Medicine, & Public Health.

Assessment and grading:

Before each course meeting, submit a list of 5 main points of each reading, as well as 2 possible discussion questions for each text reading and each article (except for clinical briefs). These assignments are due at midnight prior to the class session to discuss particular readings.

For each class session, one student will lead the discussion of the text reading and another student will lead the discussion of the journal article(s). Each student will lead one text discussion and one article discussion during the semester.

On the last meeting of the semester, you will present an EMPH article of your choice.

There is no final exam in this course.

Assignment	Possible points
Pre-class assignments: 5 main points/2 discussion questions (8 wks x 10 pts/week)	80 pts.
Meaningful participation during class discussions showing obvious knowledge of and understanding of the reading material (8 wks x 10 pts/week)	80 pts.
Leading one article discussion and one text reading discussion (2 wks x 10 pts/week)	20 pts
Preparation and presentation (2 ppt slides, 5 minutes) of one review or commentary EMPH article	20 pts
Total	200 pts.

Grade Calculation:

Your letter grade will be determined from your % of possible points as follows:

A: 90-100% B: 80-89.9% C: 70-79.9% D: 60-69.9% F: below 59.9%

Plus and minus grades will be assigned as follows:

A: 92-100% A-: 90-91.9% B+: 88.0-89.9% B: 82.0-87.9% B-: 80.0-81.9% etc.

Incomplete and late assignments:

All assignments are to be submitted/turned in by the beginning of the class session when they are due—including assignments posted in Canvas. Incompletes will only be assigned under extremely unusual circumstances.

Graduate syllabus notification page

SPIRITUAL CARE

PLNU strives to be a place where you grow as whole persons. To this end we provide resources for our graduate students to encounter God and grow in their Christian faith. At the Mission Valley campus we have an onsite chaplain who is available during class break times across the week. If students have questions, a desire to meet with the chaplain or have prayer requests you can send an email to gradchaplainmissionvalley@pointloma.edu.

PLNU COPYRIGHT POLICY

Point Loma Nazarene University, as a non-profit educational institution, is entitled by law to use materials protected by the US Copyright Act for classroom education. Any use of those materials outside the class may violate the law.

PLNU ACADEMIC HONESTY POLICY

Students should demonstrate academic honesty by doing original work and by giving appropriate credit to the ideas of others. Academic dishonesty is the act of presenting information, ideas, and/or concepts as one's own when in reality they are the results of another person's creativity and effort. A faculty member who believes a situation involving academic dishonesty has been detected may assign a failing grade for that assignment or examination, or, depending on the seriousness of the offense, for the course. Faculty should follow and students may appeal using the procedure in the university Catalog. See Academic Policies in the Graduate and Professional Studies Catalog for definitions of kinds of academic dishonesty and for further policy information.

PLNU ACADEMIC ACCOMODATIONS POLICY

While all students are expected to meet the minimum standards for completion of this course as established by the instructor, students with disabilities may require academic adjustments, modifications or auxiliary aids/services. At Point Loma Nazarene University (PLNU), these students are requested to register with the Disability Resource Center (DRC), located in the Bond Academic Center. (DRC@pointloma.edu or 619-849-2486). The DRC's policies and procedures for assisting such students in the development of an appropriate academic adjustment plan (AP) allows PLNU to comply with Section 504 of the Rehabilitation Act and the Americans with Disabilities Act. Section 504 (a) prohibits discrimination against students with special needs and guarantees all qualified students equal access to and benefits of PLNU programs and activities. After the student files the required documentation, the DRC, in conjunction with the student, will develop an AP to meet that student's specific learning needs. The DRC will thereafter email the student's AP to all faculty who teach courses in which the student is enrolled each semester. The AP must be implemented in all such courses.

If students do not wish to avail themselves of some or all of the elements of their AP in a particular course, it is the responsibility of those students to notify their professor in that course. PLNU highly recommends that DRC students speak with their professors during the first two weeks of each semester about the applicability of their AP in that particular course and/or if they do not desire to take advantage of some or all of the elements of their AP in that course.

PLNU ATTENDANCE AND PARTICPATION POLICY

Regular and punctual attendance at all classes is considered essential to optimum academic achievement. If the student is absent from more than 10 percent of class meetings, the faculty member can file a written report which may result in de-enrollment. If the absences exceed 20 percent, the student may be de-enrolled without notice until the university drop date or, after that date, receive the appropriate grade for their work and participation. See Academic Policies in the Graduate and Professional Studies Catalog for additional detail.

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Course schedule

Week/ Date	Reading in Gluckman et al.	Articles
Week 1 Jan. 8	Chap. 1 – Introduction Chap. 2 – Evolutionary theory	Childhood food allergies (commentary, EMPH, 2017) Assign discussion leaders for each meeting
Week 2 Jan. 15	Chap. 4 – Evolution & development Chap. 5 – Evolution of life histories	Physiological and genetic adaptations for diving in sea nomads (research article, Cell, 2018)
Week 3 Jan. 29	Chap. 6 - Human evolution and the origins of human diversity	Does selection for short sleep duration explain human vulnerability to Alzheimer’s disease? (Commentary, EMPH, 2017) Lower back pain (Clinical brief, EMPH, 2015)
Week 4 Feb. 12	Chap. 7 - Reproduction	Evolutionary perspectives on cesarean section (Review, EMPH, 2018) Breast feeding and infant growth (Clinical brief, EMPH, 2015)
March 5	Spring Break – no class	
Week 5 March 19	Chap. 8 – Nutritional and metabolic adaptation	Cardiovascular disease and Type II diabetes in evolutionary perspective: A critical role for helminths? (Review, EMPH, 2016) Inflammatory bowel disease (Clinical brief, EMPH, 2014)
Week 6 April 2	Chap. 9 - Defense	Why monkeys do not get multiple sclerosis (Review, EMPH, 2018) Beyond killing – Can we find new ways to manage infection? (Commentary, EMPH, 2016)
Week 7 April 16	Chap. 11 – Evolutionary principles applied to medical practice (pp. 257-267)	Evolutionary foundations for cancer biology (Review, Evol. Applications, 2012) Fever (Clinical brief, EMPH, 2014)
Week 8 April 30	Chap. 11 – Evolutionary principles applied to medical practice (pp. 268- 275)	Students present summary EMPH paper of their choice (2 ppt slides, 5 minutes)