

Evolutionary Medicine

ANTH 153 (Call No. 35960) Spring 2008

Syllabus

Lecture TR 12.00 – 1.15 PM
MND 4008

Instructor: Dr. Roger Sullivan
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Catalog Description

ANTH 153. Evolutionary Medicine. An introduction to the application of evolutionary theory to human health and disease. Evolutionary medicine is a rapidly growing interdisciplinary specialization utilizing insights from evolutionary theory and human evolutionary ecology to inform our understandings of human health, development and disease; and also to critique existing biomedical theory about the human condition. Topics include reproduction, child birth, lactation and development, infectious diseases, parasites, diet and nutrition, mental and behavioral disorders, and substance use and addiction. Prerequisites: ANTH 001, BIO 1, BIO 2, or PSYC 001 are recommended but not required. 3 units.

Required Texts

WR Trevathan, EO Smith and JJ McKenna. 1999. Evolutionary Medicine. New York, Oxford University Press.

RM Nesse and GC Williams. 1996. Why We Get Sick: The New Science of Darwinian Medicine. New York: Vintage Books.

Additional required readings are available on LOCUS (<http://locus.csus.edu/locus/index.php>).

Course Requirements

ANTH 153 is reading and writing intensive with the objective of encouraging critical thinking about, and engagement with, the course content. Assessment consists of one essay (25%), three exams (60%), and consideration of your class participation and quiz performance (15%). Course materials include substantial required reading and you are expected to read the assigned articles before class so that you can participate in class discussion.

Essay (25%)

The essay will address a question about a contemporary issue related to evolution and health and is worth 25% of your final grade. A choice of essay questions/topics and further details will be provided on the class webpage (see address above). The essay is due in class on Tuesday April 22. NO LATE ESSAYS ACCEPTED.

The essay will be a minimum of five and maximum of seven double-spaced pages, 12-point font, 1" margins, excluding references and title page.

Exams (60%)

There will be three exams comprised of short answer/essay questions and each is worth 20% of your final grade. Exams one and two will be conducted in class time and exam three will be held during Finals Week. All exams will be timed at one hour. The exams will be based on lecture content, textbook readings and additional required readings, and are non-cumulative. Study guides will be made available on the class website.

Make-up exam/assignment. If anyone misses the first or second exam, they may qualify for a make-up assignment only if the reason for their absence was a genuine and documented emergency.

Class Participation and Attendance (15%)

Attendance is mandatory. It is important that you come to class (on time), having already completed the day's readings, and prepared to participate in discussion. Quizzes, participation in class discussion and your attendance record will account for 15% of your final grade. Marks will be awarded based on the quality rather than quantity of your in-class contributions. Warning: a poor attendance record will cost you the full 15% grade allocation for this section of assessment, regardless of the quality of your class participation.

Class Conduct

Turn off cell phones. Be punctual. Inform me beforehand if you must arrive late because of work commitments. If your commitments require you to leave class early, let me know before class.

Academic Honesty: If a student is found cheating in any of the assignments/exams of this class, the student will receive an F for that assignment/exam. It is each student's responsibility to be aware of the university policy on cheating and plagiarism. See the CSUS Academic Honesty Policy and Procedures document at <http://www.csus.edu/umannual/student/UMA00150.htm>

Class Schedule

Section 1:	Basic Concepts	Readings (REQ required)
T Jan 29	Introduction	Nesse & Williams 1999
R Jan 31	<u>Biomedical</u> approaches: - adaptations to altitude - human variation in drug metabolism	Beall 2001 REQ , Wilkinson 2005
T Feb 5	- epidemiology of schizophrenia	McGrath 2006 REQ , McGrath et al. 2004, Saha et al. 2005
R Feb 7	- ancestral environments (paleodemography) - epidemiological transitions	Barrett et al. 1998 REQ Nesse & Williams Chap 9 REQ Steckel et al. 2002, Hutchinson and Norr 2006
T Feb 12	<u>Biocultural</u> approaches: - milk tolerance	Wiley 2004 REQ , Dufour 2006
R Feb 14	- obesity	Ulijaszek and Lofink 2006 REQ
T Feb 19	<u>Evolutionary</u> approaches: - natural selection and adaptation	Nesse & Williams Chaps 1 and 2 REQ Trevathan 2007
R Feb 21	-evolutionary obstetrics	Trevathan et al. chap 8 REQ Ulizzi 2002 REQ
T Feb 26	-paleolithic nutrition and “mismatch”	Trevathan et al. chap 12 REQ , Nesse & Williams Chaps 9 and 10 REQ
R Feb 28	Exam 1	
Section 2:	Evolution in Health and Disease	
T Mar 4	Immunology and infectious disease	Knapp 2002 REQ , Nesse & Williams Chap 3 Wolfe et al. 2007 REQ
R Mar 6	Infectious disease II	Trevathan et al. Chaps 10 REQ Trevathan et al. Chap 11
T Mar 11	Helminth parasites	Hurtrez-Boussès et al. 2001 REQ Nesse & Williams Chap 4
R Mar 13	Film (Sullivan away)	
T Mar 18	Chronic disease	Trevathan et al. Chap 18 REQ Nesse & Williams Chap 12 REQ ,
R Mar 20	Allergy	Trevathan et al. Chaps 9 REQ , Nesse & Williams Chap 11 REQ , Trevathan et al. Chap 5
T Mar 25	Infant health	Trevathan et al. Chaps 2 and 3 REQ

R Mar 27	Puberty and Menses	Trevathan et al. Chaps 6 and 17 REQ
T Apr 1	Spring Break	
R Apr 3	Spring Break	
T Apr 8	Menopause and Aging	Trevathan et al. Chaps 16 REQ , Nesse & Williams Chap 8, Allen et al. 2005 REQ
R Apr 10	Exam II	
Section 3:	Evolution in Mental and Behavioral Health	
T Apr 15	<u>Drug use</u> in evolutionary perspective: -drug abuse and "natural reward"	Nesse and Berridge 1997 REQ Trevathan et al. Chap 15, Hill and Chow 2002 Everitt & Robbins 2005 REQ
R April 17	-plant toxins	Nesse & Williams Chap 6 REQ , Jackson 1996 Billings & Sherman 1998 REQ
T Apr 22	-drug use in prehistory Essay assignment is due in class today	Dudley 2004; Sullivan & Hagen 2002 REQ
R Apr 24	-new perspectives on evolution and drug use.	Sullivan et al. 2008 REQ Lende 2007
T Apr 29	Autism	Baron-Cohen 2002
R May 1	Depression	Nesse 2000 REQ , Nesse & Williams Chap 14 Hagen & Barrett 2007 REQ
T May 6	Schizophrenia I	Allen & Sarich 1988, Brune 2004 REQ
R May 8	Schizophrenia II	Allen 1997 REQ , Sullivan et al. 2007, Cohen et al. 2007 REQ
T May 13	Problems for "Evolutionary medicine"	Lewis 2007 REQ
R May 15	Summary and Review	
T May 20	Exam III 12.45 – 2.45 PM	MND 4008