Graduate Seminar in Physical Anthropology

ANTH 202 (Call No. 80371) Fall 2008

Syllabus

Lecture: Monday 5.30-8.20 PM
MND 4008

Instructor:	Dr. Roger Sullivan
Office:	MND 4024
Office Hours:	Tuesday 9.00-12.00 AM, or by appointment.
Phone:	278-4083
E-mail:	sullivar@csus.edu
Course web page:	http://www.csus.edu/indiv/s/sullivanr/

Catalog Description
ANTH 202. Physical Anthropology. A survey of contemporary issues in Physical Anthropology. 3 units.

Required Readings
Available on LOCUS http://locus.csus.edu/locus/index.php and at the Reserve Book Room.

Course Objectives and Requirements
ANTH 202 is a readings-based discussion seminar of theoretical issues and current research in biological/physical anthropology. Assessment consists of two essays (40%), preparatory writing and participation in each week's discussion (40%) and a class presentation (20%). The course work is intended to develop skills in critical analysis of the science literature, and to engage with current issues and research in the discipline. Attendance and active participation at all class meetings is mandatory and you will be graded on both. You are expected to read the assigned articles *before* class so that you can fully participate in discussions.

Essays (40%)
Students will complete two essays:

Essay One (5 pages excluding title page and references, typed and double-spaced) will address the following statement and is worth 10% of the final grade:

"Did Lawrence Summers have a point about innate [brain] differences between men and women?"

Write me an essay constructing a negative or affirmative argument in response to the statement. Construct your essay initially around the supplied popular science article "Sex on the brain" (Hoag 2008), but you must build your argument based on primary research sources on biological sex-differences from the literature (i.e. use some references from the supplied article as a starting point).

This initial assignment is a learning exercise to orientate students to the required writing style and grading expectations for the final essay. Essay One is due in class in the 6th week (October 6). A guide for organizing and writing essays will be handed out at the first class and will also be available on the class website.

Essay Two will address a course-related topic of your choosing and is worth 30% of the final grade. You must clear your choice of essay topic with me first. The paper will be based on an extensive reading of primary source material and will include a substantial reference list (>10 references). Your essay will be no more than 15 pages in length (excluding title page and

references), pages numbered, double-spaced, with a 12 point standard font, one-inch margins all around and include your name at top-right of each page. Essay Two is due in the last class (December 14) - refer to the essay guide for further details about how to write your essays and my expectations for grading.

Literature Summaries (20%)
A written summary of two of the required readings (marked with an asterisk*) is due in class each week. Your summary will be a 1/2 to 1 single-spaced page (1-2 double-spaced pages) on each of the required readings. Summaries will be written in prose (i.e. no list or bullet points) and will include 1) a clear introductory sentence describing what the paper is about 2) a paragraph or two describing the essential points made by the author(s), and 3) their main conclusions. Summaries will be graded as below. Summaries are due in class - late summaries will not be accepted.

Effort/Achievement	**Points**
excellent	3
Intermediate	2.5
satisfactory	2
intermediate	1.5
unsatisfactory	1
Missed/late	0

Class Participation (20%)
Each week's topic and readings will be discussed in class. The tone of discussions is expected to be respectful to all points of view and supportive of a free exchange of ideas. To assist in preparation for class discussions you will formulate a list of three questions related to the readings for that week. You will refer to these questions when called upon during class discussion and will hand them in to me at the end of class. Your participation grade will be based on the quality (rather than quantity) of your discussion contributions, evidence that you are thinking critically about class topics, and the quality and relevancy of your discussion questions.

Points to consider when preparing your discussion questions:

- what parts of the readings do you not understand?
- what are the broader implications of the reported research findings?
- have you detected flaws in the author's logic or methods?
- what is the broader theoretical context of the article?
- can you detect an implicit, rather than explicit, point of view or theoretical position that the author is advocating?

Student Presentation (20%)
Each student will lead-off one or more class period by giving a presentation on the topic of the week. The main thing that I will be looking for in terms of assessing presentations is evidence of a critical analysis of the topic - that you present an informed opinion of the issue in question rather than merely review the literature. Presentations are expected to go beyond the assigned readings. A bibliography of five additional references used in the preparation of your presentation will be submitted to me on the day that you present. You will be also be graded on organization and presentation skills. Plan your presentation to take up at least 30 minutes of the class period (not to exceed 45 minutes). Afterward, we will spend 10-15 minutes on questions.

Final Grade Summary

Essays:	40%
Literature Summaries:	20%
Class Participation:	20%
Presentation(s):	20%
Total:	100%

Class Schedule

Week 1. September 1.
No class.

Week 2. September 8.
Introduction: Science writing and critical analysis.
Readings: Kuyper 1991, Dr Sullivan's Essay Guide

Week 3. September 15.
History of Physical Anthropology/Philosophy of science.
Readings: Washburn 1951, Feynman 1974, Miller 1985* (Popper readings), Kuhn 1970*
Presenter:

Week 4. September 22.
Evolutionary genomics I: Chimpanzee *vs* human.
Required readings: Varki and Nelson 2007*, Watanabe et al. 2004* (*also* "Genomic jargon" glossary)
Presenter:

Week 5. September 29.
Evolutionary genomics II: Natural Selection in the human genome.
Required readings: Hancock and Di Rienzo 2008*, Harris 2008*
Presenter:

Week 6. October 6. **First essay is due.**
Chimpanzee *vs* human culture and behavior.
Required readings: Boesch and Tomasello 1998*, Inoue and Matsuzawa 2007*, Matsuzawa 2007, Whiten et al. 1999
Presenter:

Week 7. October 13.
The Major Histocompatibility Complex [MHC] and behavior.
Readings: Penn and Potts 1998*, Slev et al. 2006*
Presenter:

Week 8. October 20.
Modern human origins I: What happened to the Neandertals?
Required readings: Caramelli et al. 2003*, Duarte et al. 1999*, Tattersall 2002
Presenter:

Week 9. October 27.
How does speciation occur? Species concepts and speciation.
Required readings: Bynum 2002, Hunt 2003*, Paterson 1985*, Groves 1997
Presenter:

Week 10. November 3.
Paleontology and phylogeny: Recent fossil discoveries in paleoanthropology.
Required readings: Brunet et al. 2002*, Galik et al. 2004*, Haile-Selassie et al. 2004
Presenter:

Week 11. November 10.
What's in a name? Issues of classification in the fossil record.

Required readings: Lieberman 1999, Collard and Wood 2000*, Cela-Conde and Ayala 2003*
Presenter:

Week 12. November 17.
Problems with human forager and primate models of hominin evolution.
Required readings: Hames 2007, Kelly 1995*, Sayers and Lovejoy 2008*
Presenter:

Week 13. November 24.
Modern Human Origins II: *Out of Africa* and archaic Europeans.
Required readings: Weaver and Roseman 2005*, Zilhao 2006*
Presenter:

(Thanksgiving 27 and 28)

Week 14. December 1.
Modern Human Origins III: Recent fossil controversies.
Required readings: Brown et al. 2004*, White et al. 2003*, Berger 2008
Presenter:

Week 15. December 8. **Second essay is due.**
Review and Post mortem

Readings (refer to LOCUS for complete list)

Brown, P. et al. 2004. A new small-bodied hominin from the Late Pleistocene of Flores, Indonesia. *Nature*. 2004 431:1055-61.

Brunet, M., et al. 2002. A new hominid from the Upper Miocene of Chad, Central Africa. *Nature* 418: 145-151.

Bynum, N. 2002. Morphological variation within a macaque hybrid zone. *American Journal of Physical Anthropology* 118: 45-49.

Cela-Conde, C. J. and F. J. Ayala. 2003. Genera of the human lineage. *Proceedings of the National Academy of Sciences* 100: 7684-7689.

Caramelli, D. et al. 2003. Evidence for a genetic discontinuity between Neandertals and 24,000-year-old anatomically modern Europeans. *Proceedings of the National Academy of Sciences* 100: 6593-6597.

Collard, M. and B. Wood. 2000. How reliable are human phylogenetic hypotheses? *Proceedings of the National Academy of Sciences* 97: 5003-5006.

Duarte, C. et al. 1999. The early upper paleolithic human skeleton from the Abrigo do Lagar Velho (Portugal) and modern human emergence in Iberia. *Proceedings of the National Academy of Sciences* 96: 7604-7609.

Galik, K. et al. 2004. External and Internal Morphology of the BAR 1002'00 *Orrorin tugenensis* femur. *Science* 305: 1450-1453.

Groves, C. P. 1997. Species concept in paleoanthropology. *Perspectives in Human Biology* 3: 13-20.

Hoag, H. 2008. Sex on the brain. *New Scientist*: 19 July 2008.

Haile-Selassie, Y. et al. 2004. Late Miocene teeth from Middle Awash, Ethiopia, and early hominid dental evolution. *Science* 303: 1503-1505.

Hunt, K. D. 2003. The single species hypothesis: truly dead and pushing up bushes, or still twitching and ripe for resuscitation? *Human Biology* 75: 485-502.

Kelly, R. L. 1995. "Hunter-Gatherers and Prehistory" in *The Foraging Spectrum: Diversity in Hunter-Gatherer Lifeways*. Pp. 333-344. Washington: Smithsonian Institution Press.

Kuhn, T. 1970. *The Structure of Scientific Revolutions*. Chicago: University of Chicago Press. Pp. 10-22,160-173.

Kuyper, B. J. 1991. Bringing up scientists in the art of critiquing research. *BioScience* 41:248-250.

Lieberman, D. E. 1999. Homology and hominid phylogeny: Problems and potential solutions. *Evolutionary Anthropology* 7: 142-151.

Miller, D. (ed). 1985. *Popper Selections*. New Jersey: Princeton University Press. Pp. 101-104, 127-130, 133-136, 183-186, 220-225.

Paterson, H. E. H. 1985. "The Recognition Concept of Species" in *Species and Speciation*. Edited by E. S. Vrba, pp. 21-29. Transvaal Museum Monograph No. 4. Transvaal Museum, Pretoria.

Tattersall, I. 2002. Paleoanthropology and evolutionary theory. In: Peregrine N, Ember CR, Ember M (eds), Physical anthropology: original readings in method and practice. New Jersey: Prentice Hall. Pp. 29-41.

Washburn, S. 1951. The New Physical Anthropology. *Transactions of the New York Academy of Science Series II* 13:298-304.

Watanabe, H. et al. 2004. DNA sequence and comparative analysis of chimpanzee chromosome 22. *Nature* 429: 382-388. ["Genomic jargon" glossary of terms attached]

White, T. D. et al. 2003. Pleistocene *Homo sapiens* from Middle Awash, Ethiopia. *Nature*. 423:742-747.

Zilhao, J. 2006. Neandertals and Moderns Mixed, and It Matters. *Evolutionary Anthropology* 15:183–195.

Relevant full-text journals that are available online at the CSUS library:
American Journal of Human Biology
American Journal of Physical Anthropology
Current Anthropology
Evolutionary Anthropology
Evolution and Human Behavior
Human Biology
Journal of Human Evolution
Nature (except the current year)
Proceedings of the National Academy of Sciences (except the previous 6 months)
Science (except the current year)