

**INTRODUCTION TO PHYSICAL ANTHROPOLOGY
ANTHROPOLOGY 204 – SPRING, 2013**

Instructor:

Professor: **Adam Van Arsdale**
Lecture: T/F, 9:50, PNW 116
Office: PNE 348

Office Hours: Thursday, 1:00-3:00pm
and by appointment
Contact: avanarsd@wellesley.edu

Description:

This course will examine the evolutionary foundations of human variability. This theme is approached broadly from the perspectives of anatomy, paleontology, genetics, primatology, and ecology. For this purpose, the course will address the principles of human evolution, fossil evidence, behavior, and morphological characteristics of human and non-human primates. Explanation of the interrelationship between biological and sociobehavioral aspects of human evolution, such as the changing social role of sex, are discussed. In addition, human inter-population differences and environmental factors that account for these differences will be evaluated.

Course Goals:

- Develop an understanding of the place of physical anthropology within the broader discipline of anthropology
- Learn the basic principles which allow us to ask and answer evolutionary questions about human variation, its causes and consequences, past and present
- Recognize the many ways in which evolutionary issues are integrated with and have significance for contemporary society

Grading:

- Mid-term exam: 25% (*online, due 3/15, 5PM*)
- Final exam: 25% (*online, due 5/17, 5PM*)
- Primate presentation: 5% (*in class, 3/26-3/29*)
- Phylogeny exercise: 5% (*online, due 3/1*)
- Essays (2): 10% (*online, due 2/15, 4/26, 5PM*)
- Mini-grant project: 20% (*due in parts, 3/8, 4/12, 5/14*)
- Participation: 10% (*weekly*)

Grading Policy:

Late assignments will not be accepted. Exceptions will be made for appropriate circumstances, but only with approval from Professor Van Arsdale. Anyone seeking additional assistance with the course material should contact Professor Van Arsdale to explore the available options. This course covers a lot of material across a wide range of topics – DO NOT BE AFRAID TO ASK QUESTIONS!!!

Texts:

Throughout the semester we will be working through a textbook, “The Alternative Introduction to Biological Anthropology,” by Jonathan Marks. We will also be reading a recent book by Eva Jablonka and Marion Lamb that presents new perspectives of how evolution works. Finally, several texts in .pdf form will be made available via the course website. In general, the course lectures and readings will complement each other. You should not expect every reading to be covered directly in lecture, nor should you expect everything I discuss in class to be found in the readings. However, *you are responsible for the content of both the readings and lectures!* If you have specific questions about the content of the lectures or readings, ask questions in class and online via Sakai.

- J. Marks (2011), The Alternative Introduction to Biological Anthropology. Oxford University Press.
- E. Jablonka and M. Lamb (2005), Evolution in Four Dimensions, MIT Press

Course Website:

Our class will be using the Sakai course conference platform. The website includes several features, including a calendar that will contain information on assignment due dates and relevant campus events for the course, a copy of the course syllabus, links to outside resources, class documents, a drop-box for class assignments, and a forum for class discussion.

The forum for class discussion is what participation grades for the course will be based on. Each week you are expected to contribute one topic pertaining to human evolution. It might be an observation you have made, an insightful question, or a link to an interesting news story or evolutionary commentary. One of the goals of this course is to highlight the broad significance of human evolution for individuals today – these discussions are a chance for you to engage in conversations about the course outside of class and provide your own perspective. The forums can also serve as places for dialogue, where you can respond to other individuals comments and posts.

Concerns:

If you have any concerns regarding your ability to complete the assignments of the course or trouble understanding specific concepts, I am always available for consultation. In addition to my office hours I can be reached with regularity via e-mail. Assistance is also available for students through the Pforzheimer Learning and Teaching Center. All work in this class is subject to the Wellesley Honor Code. While students are encouraged to discuss the course materials and assignments both in and out of class, all of your work must reflect your own independent efforts. All assignments must be turned in on time. Unless approval is granted from Prof. Van Arsdale, no late assignments will be accepted. No extra credit will be available for this course.

SYLLABUS (subject to change)

- AIBA refers to *The Alternative Introduction to Biological Anthropology*.
- J&L refers to *Evolution in Four Dimensions*.
- ** Readings marked with an asterisk are supplementary and especially recommended for students with a limited background in biology and evolution **

Week 1: (Jan. 28-Feb. 1) Introduction

Tuesday, January 28 – Class introduction, what is Physical Anthropology?

Friday, February 1 – The place of humans in an evolutionary world, evolution's place in a human world

Readings:

- AIBA, Chapters 1-2 (1-38)
- J&L, prologue & Chapter 1 (1-4)
- "What if They Gave a Science War and Only One Side Came?" Hugh Gusterson - (<http://chronicle.com/article/What-if-They-Had-a-Science-War/125828/>)
- "Anthropology Without Science" Dan Berrett - (<http://www.insidehighered.com/news/2010/11/30/anthroscience>)

Week 2: (Feb. 4-8): Natural Selection

Tuesday, February 5 – Simple genetics, mutation

Friday, February 8 – Natural selection and adaptation

Readings:

- AIBA, Chapters 3 (39-60)
- J&L, Chapters 1-2 (5-78)
- ** Relethford, Chapter 2 "Human Genetics" **

Week 3: (Feb. 11-15): Populations

Tuesday, February 12 – Molecular & population genetics, gene flow and genetic drift

Friday, February 15 – Is (human) evolution directed?

Readings:

- AIBA, Chapters 4-5 (61-100)
- J&L, Chapter 3 (79-107)
- ** Relethford, Chapter 3 "Evolutionary Forces" **

Assignment:

- Essay #1 due, 2/15 5pm (via website) – "Are you different than your great great grandparents?"

Week 4: (Feb. 18-22): Species and speciation

Tuesday, February 19 – (NO CLASS, MONDAY SCHEDULE)

Friday, February 22 – Species concepts and “modern” humans

Readings:

- AIBA, Chapter 6 (101-120)
- J&L, Chapter 4 (109-154)
- “Are Neanderthals human?” Carl Zimmer –
(<http://www.pbs.org/wgbh/nova/evolution/are-neanderthals-human.html>)

Week 5: (Feb. 25-March 1): Phylogenies

Tuesday, February 26 – Trees and taxonomies

Friday, March 1 – Introduction to primates

Readings:

- AIBA, Chapter 7 (121-140)
- ** Boyd & Silk, Chapter 4 “Speciation and Phylogenies”

Assignment:

- Phylogeny exercise due, March 1 (via website)

Week 6: (March 4-8): Primate Ecology

Tuesday, March 5 – What do primates do (and what do humans do differently)?

Friday, March 8 – Primate reproductive ecology

Readings:

- AIBA, Chapter 8 (141-161)
- Ape Genius (2008) , FILM, on reserve in library and available on web
(<http://www.pbs.org/>)
- Whiten, et al. (1999), Cultures in chimpanzees. *Nature* 399:682-684

Assignment:

- Mini-grant topic due, March 8 (via website)

Week 7 (March 11-15): Kinship and altruism

Tuesday, March 12 – Evolution of cooperative behavior

Friday, March 15 – Group structure, mating and aggression

Readings:

- AIBA, Chapter 9 (162-177)
- J&L, Chapter 5 (155-191)

Assignment:

- Primate in-class presentations, due 3/26-3/29
- Mid-term exam, Jan. 28-March 8 (take home), due 3/15, 5pm

Week 8 (March 18-22): SPRING BREAK – No Class

Week 9 (March 25-29): Primate presentations

Tuesday, March 26 – Primate student presentations

Friday, March 29 – Primate student presentations

Readings:

- AIBA, Chapter 10 (178-198)
- David Begun (2006), Planet of the Apes, [Scientific American](#)

Week 10 (April 1-5): The Human origins

Tuesday, April 2 – How do we ask questions of fossils? 60 million years in a day

Friday, April 5 – The Australopiths

Readings:

- AIBA, Chapter 11 (199-214)
- Ann Gibbons (2009), A new kind of ancestor, [Science](#)

Week 11 (April 8-12): Origin and dispersal of Homo

Tuesday, April 9 – Emergence of genus *Homo* and the first Out of Africa

Friday, April 12 – Film (*in class*), NOVA: Becoming Human, Part 3

Readings:

- AIBA, Chapter 12 (215-235)
- Kate Wong (2003), Stranger in a New Land, [Scientific American](#)

Assignment:

- Mini-grant bibliography due, April 12 (via website)

Week 12 (April 15-19): Modern human origins

Tuesday, April 16 – The Neandertals and pre-human *sapiens*

Friday, April 19 – Origins of “modernity”

Readings:

- J&L, Chapter 6 (193-231)
- “The paradigm is dead, long live the paradigm!” Razib Khan - (<http://blogs.discovermagazine.com/gnxp/2010/12/the-paradigm-is-dead-long-live-the-paradigm/>)

- “The Denisova genome FAQ” John Hawks - (http://johnhawks.net/weblog/reviews/neandertals/neandertal_dna/denisova-nuclear-genome-reich-2010.html)

Week 13 (April 22-26): Post-Pleistocene human evolution

Tuesday, April 23 – Morphological, behavioral and genetic change in the Neolithic

Friday, April 26 – Genotype, phenotype, understanding human differences

Readings:

- AIBA, Chapter 13 (236-255)
- J&L, Chapter 7 (233-283)
- Erika Hayden (2009), Darwin 200: The other strand, Nature

Assignment:

- Essay #2 due 4/26, 5pm (via website) – “The perfect fossil/archaeological locality”

Week 14 (April 29-May3): Modern human behavior

Tuesday, April 30 – Biocultural humans

Friday, May 3 – Language and cognition

Readings:

- AIBA, Chapter 14 (256-275)
- J&L, Chapter 8 (285-317)
- Dominguez & Rakic (2009), Language evolution: The importance of being human, Nature

Week 15 (May 6-10): Conclusions

Tuesday, May 5 – The “Science” of Anthropology and human evolution

Readings:

- B&S, Chapter 16 (443-472)
- J&L, Chapter 8 (319-383)

Assignment:

- Mini-grant assignment due (5/14)

FINAL EXAM, cumulative, with a focus on final 8 weeks, administered electronically and completed at your convenience sometime during exam period, due by May 17th 5PM