

ANTH 407/507: BIOANTHROPOLOGY METHODS
Spring Quarter 2007
4 Credit Hours

Class Times: TTh 2:00-3:50pm

Class Location: 368 Condon

Instructor: Dr. Josh Snodgrass

Office: 354 Condon Hall

Office Hours: Tuesdays and Thursdays 1:00-2:00 & by appointment

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Course Description: This course provides an overview of research methods used in biological anthropology, with emphasis on research among living human populations. The course will introduce students to the process of research design, data analysis, and interpretation. The course will meet twice a week in the Physical Anthropology Teaching Laboratory (368 Condon Hall). Several individual classes will meet at other locations on campus, such in the Biology Department or Department of Human Physiology (see schedule). Individual class meetings will be split between discussions of various methods for assessing human biological functioning and hands-on application of these methods.

Format: The course will consist of short lectures (~30 minutes) followed by directed discussion and hands-on laboratory exercises.

Required Readings: Course packet with readings (available on Blackboard)

Evaluation Criteria:

Class Attendance & Participation	20%
Lab Write-Ups (4 @ 5% each)	20%
Presentation of Research Proposal	20%
Research Proposal (Due 6/14)	40%

Students will produce 4 short laboratory write-ups (~2 pages each) during the quarter that analyze and interpret data from laboratory exercises. Students will be expected to fully participate in class discussions and exercises and to have read the required readings by class time. Due to the focus of this class on laboratory activities, class attendance is critical. Therefore, make-ups will only be available under extraordinary circumstances.

The class will culminate in the production of a 10-page NSF-style proposal for an original research project using methods learned in this course. Students will propose a topic, provide sufficient background to show the topic to be important and interesting, propose methods for collecting and analyzing data, and discuss the potential significance of the project. Examples of NSF grant proposals will be available on Blackboard. Prior to handing in their proposal, students will present their research topics to the class.

Assignments must be turned in at the scheduled time—**under no circumstances will assignment extensions be given without a documented excuse** (e.g., signed note from your doctor). If you will not be able to turn in an assignment at the designated time, you **must** notify me in advance (preferably by e-mail).

Class Schedule:

Date	Topics	Required Readings
4/3	Course Introduction	
4/5	Research in Biological Anthropology & Research Design Biological anthropology & biomedicine; Biocultural and evolutionary perspectives; Adaptation	Hailman & Strier 2006 Ch. 1 Huss-Ashmore 2000 Bernard 2006 Ch. 4
4/10	Ethical Issues and Proposal Writing Research design; Theory; Field vs. laboratory issues; Ethics, scientific integrity, and professional responsibility; Picking a research topic & writing a research proposal	Hailman & Strier 2006 Ch. 2 Ethical Issues (Pick One : Stinson 2005; Larsen & Walker 2005; Nash 2005)
4/12	Energetics I: Growth & Nutritional Status; Food Intake & Dietary Composition (Write-Up Due 4/19) Anthropometry; Reference values & growth standards; Body composition; Fat distribution; Food intake; Dietary quality; 24-hour dietary recalls; Food frequency questionnaire	Chumlea & Guo 2002
4/17	Energetics II: Total Daily Energy Expenditure & Physical Activity (Write-Up Due 4/24) Calorimetry; Oxygen consumption; Basal metabolic rate; Heart rate monitoring; Accelerometry; Time allocation	Leonard 2004 Snodgrass et al. 2005
4/19	Behavioral Sampling Scan sampling; Focal animal sampling; Social structures and interactions; Ecological context <i>Guest Lecturer: Dr. Frances White (UO Anthropology)</i>	Altmann 1974
4/24	Cardiovascular, Endocrine, & Immune Function I: Cardiorespiratory Fitness Work capacity & performance; Cardiovascular and respiratory responses to exercise; Cardiovascular and respiratory responses to environmental stressors <i>Guest Lecturers: Drs. John Halliwill & Christopher Minson (UO Human Physiology)</i>	TBA
4/26	Cardiovascular, Endocrine, & Immune Function II: Cardiovascular Health (Write-Up Due 5/3) Blood pressure, Inflammatory markers, Hemoglobin; Plasma lipids; Cardiovascular risk; Metabolic syndrome	Chobanian et al. 2003 Grundy et al. 2005
5/1	Cardiovascular, Endocrine, & Immune Function III: Metabolic, Endocrine, and Immune Function Glucose metabolism, Collecting biological samples in the field; Immunoassay; Reproductive ecology; Psychosocial stress (Self-report instruments & stress biomarkers); Muscular strength; Digit ratios	Ice & James 2007 Pollard & Ice 2007 Fink et al. 2006

5/3	Skeletal Biology I: Dental Variation & Health Assessing dental health; Dental molds; Dental histology <i>Guest Lecturer: Dr. John Lukacs (UO Anthropology)</i>	TBA
5/8	Skeletal Biology II: Human Skeletal Variation (Write-Up Due 5/15) Osteometrics; Craniometrics; Discriminant function analysis; Body proportions; 3D morphometrics <i>Guest Lecturer: Dr. Stephen Frost (UO Anthropology)</i>	Loth & Iscan 2000; TBA
5/10	Skeletal Biology III: Paleopathology & Bone Microanatomy Disease-related changes to bone; Trauma; Bone histology & thin sectioning <i>Guest Lecturer: Dr. Greg Nelson (UO Anthropology)</i>	TBA
5/15	Skeletal Biology IV: Skeletal health Bone density; Osteoporosis; DEXA; Ultrasonometry; Osteoarthritis; Assessing skeletal size in living populations <i>Guest Lecturer: Britta Torgrimson (UO Physiology)</i>	TBA
5/17	Stable Isotope Geochemistry Dietary analysis using stable isotopes; Carbon; Nitrogen; Heavy isotopes; Paleoclimatology; Paleoecology	TBA
5/22	Environmental Context I: Physical & Social Environment Physical environment; Measuring social relationships; Cultural variables; Level of analysis (individual, household, community); Observation vs. self-report; Quantitative methods; Factor analysis	Bernard 2006 (Ch. 10) McDade & Adair 2001
5/24	Genetics DNA extraction; PCR; Sequencing; Genetic markers; Phylogenetics; Evolutionary and developmental genetics <i>Guest Lecturer: Dr. Bill Cresko (UO Biology)</i>	TBA
5/29	Environmental Context II: Social Network Analysis & Qualitative Methods Social network analysis; Ethnography; Qualitative methods; Community-based participatory research <i>Guest Lecturer: Dr. Heather McClure (OSLC)</i>	Wali 2006 TBA
5/31	Data Management & Analysis Software options for data management and analysis; Organizing, entering, cleaning, and coding data; Naming variables; Analysis	TBA
6/5	Presentation of student research proposals	
6/7	Presentation of student research proposals (cont'd)	
	Research Proposal Due 6/14 @ 5:00 pm	