

ANTH 407/507: BIOANTHROPOLOGY METHODS
Spring 2009
4 Credit Hours

Class Time & Location: Wednesday 6:00 - 8:50 pm, 368 Condon Hall

Instructor: Dr. Josh Snodgrass

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Office Hours: MW 1-2 & by appointment

Prerequisite: ANTH 270 (or permission of the instructor)

Course Description: A laboratory-based introduction to research methods in biological anthropology.

Course Content: This course provides an overview of research methods used in biological anthropology, with an emphasis on research among living humans. The course will introduce students to the process of research design, data analysis, and interpretation. The course will meet in the Physical Anthropology Teaching Laboratory (368 Condon Hall), and individual class meetings will be split between discussions of various methods for assessing human biological functioning and hands-on application of laboratory techniques.

Format: Short lectures (~30 minutes) followed by directed discussion and hands-on laboratory exercises.

Required Readings: Assorted articles and book chapters

Evaluation Criteria:

Undergraduate Students

Class Attendance & Participation	20%
Lab Write-Ups (3 @ 5% each)	15%
Presentation of Research Proposal	15%
Res. Question/Hypotheses (Due: 5/20)	10%
Research Proposal (Due: 6/10)	40%

Graduate Students

Class Attendance & Participation	20%
Annotated Bibliography (Due: 5/13)	25%
Presentation of Research Proposal	15%
Res. Question/Hypotheses (Due: 5/20)	10%
Research Proposal (Due: 6/10)	30%

Your grade in the course will reflect class attendance, participation in discussions, and completion and presentation of a research proposal. Undergraduates will additionally complete 3 short laboratory write-ups (~2 pages each) during the quarter that analyze and interpret data from lab exercises. Graduate students will write a slightly longer research paper that includes additional sections (e.g., budget and CV) and will additionally complete an annotated bibliography, which summarizes readings and synthesizes course material.

Students are 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 (double-spaced; grad students 15 pages) 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 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 to the class.

Graduate students will compile an annotated bibliography. Each entry will be approximately 1 page (double-spaced) and should 1) **briefly** summarize the article's main points, and 2) place the article into the framework of the class, linking it with other ideas and critically evaluating it. Writing should be concise and focused.

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). Appropriate accommodations will be provided for students with documented disabilities. If you have a documented disability and anticipate needing accommodations in this course, please make arrangements to meet with me. Please bring a notification letter from Disability Services outlining your accommodations.

Class Schedule:

Date	Topics	Required Readings
4/1	<p>Course Introduction & Behavioral Sampling <i>Guest Lecturer: Dr. Frances White, UO Anthropology</i> Scan sampling; Focal animal sampling; Social structures and interactions; Ecological context</p> <p>Dr. Snodgrass will be in Chicago attending the Human Biology Association meetings</p>	1) Huss-Ashmore 2000 2) Martin & Bateson 1993 Chapters 5 & 6
4/8	<p>Research in Biological Anthropology & Research Design Biological anthropology & biomedicine; Biocultural and evolutionary perspectives; Human adaptation</p> <p>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</p>	1) Hailman & Strier 2006 Chapters 1 & 2 2) Bernard 2006 Ch. 4 3) Ethical Issues (Pick One : Stinson 2005; Larsen & Walker 2005; Nash 2005)
4/15	<p>The Human Social Environment: Qualitative & Quantitative Methods <i>Guest Lecturers: Drs. Heather McClure (Oregon Social Learning Center) & Mary Fechner (UO Institute of Cognitive and Decision Sciences)</i> Ethnography; Questionnaires; Community-based participatory research; Cultural consensus analysis</p>	1) Bernard 2006 Chapters 9-11 2) Wali 2007
4/22	<p>Anthropometry, Growth, and Nutritional Status; Food Intake & Dietary Composition (Write-up due in class next week) Anthropometry; Reference values & growth standards; Body composition; Fat distribution; Food intake; Dietary quality; 24-hour dietary recalls; Food frequency questionnaire</p>	1) Lasker 1996 2) Norgan 2005 3) Chumlea & Guo 2002 4) Katzmarzyk & Leonard 1998

4/29	Human Energetics: Resting Metabolism, Physical Activity, and Total Daily Energy Expenditure (Write-up due in class next week) Calorimetry; Oxygen consumption; Basal metabolic rate; Heart rate monitoring; Accelerometry; Time allocation	1) Leonard 2004 2) Snodgrass et al. 2005 3) Dufour & Piperata 2008
5/6	Cardiovascular & Metabolic Health (Write-up due in class next week) Blood pressure, Hemoglobin; Plasma lipids; Glucose & Diabetes; Cardiovascular risk; The metabolic syndrome	1) Chobanian et al. 2003 2) Grundy et al. 2005 3) Dressler 1999
5/13	Biomarkers Biomarkers of health and physiology; Minimally invasive techniques; Dried blood spots & saliva samples; Stress biomarkers; Cortisol, CRP, & Epstein-Barr Virus antibodies (Annotated bibliography due for graduate students today)	1) McDade et al. 2007 2) Ice & James 2007 3) McDade 2001
5/20	No class but instead meet individually with Dr. Snodgrass about projects. Dr. Snodgrass will set up individual 15-minute meetings from 5-10 pm (Research question & hypotheses due today—for everyone)	No assigned readings this week
5/27	Skeletal Biology: Human Skeletal Variation Osteometrics; Craniometrics; 3D morphometrics Guest Lecturer: Dr. Stephen Frost (UO Anthropology)	1) Marcus & Corti 1996 2) Zollikofer & Ponce de Leon 2005
6/3	Presentation of student research proposals (10 minutes per presentation)	
	Research Proposal Due: Wednesday, June 10 @ 5pm	

Required Readings:

Week 1

Huss-Ashmore R. 2000. Theory in human biology: Evolution, ecology, adaptability, and variation. In: Stinson S et al. (eds.) Human Biology: An Evolutionary and Biocultural Perspective. Wiley, pp. 1-25.

Martin P, Bateson P. 1993. Measures of behaviour (Ch. 5). In: Measuring Behaviour: An Introductory Guide (2nd Edition), Cambridge, pp. 62-83.

Martin P, Bateson P. 1993. Recording methods (Ch. 6). In: Measuring Behaviour: An Introductory Guide (2nd Edition), Cambridge, pp. 84-100.

Week 2

Hailman JP, Strier KB. 2006. How to plan research (Ch. 1). In: Planning, Proposing, and Presenting Science Effectively (2nd Edition). Cambridge, pp. 1-33.

Hailman JP, Strier KB. 2006. How to write a research proposal (Ch. 2). In: Planning, Proposing, and Presenting Science Effectively (2nd Edition). Cambridge, pp. 34-63.

Bernard HR. 2006. The literature search (Ch. 4). In: Research Methods in Anthropology: Qualitative and Quantitative Approaches. Altamira press, pp. 96-108.

Read at least one of the following on ethical issues in biological anthropology:

Stinson S. 2005. Ethical issues in human biology behavioral research and research with children. In: Turner T (ed.) Biological Anthropology and Ethics: From Repatriation to Genetic Identity. SUNY Press, pp. 139-148.

Larsen CS & Walker PL. 2005. The ethics of bioarchaeology. In: Turner T (ed.) Biological Anthropology and Ethics: From Repatriation to Genetic Identity. SUNY Press, pp. 111-119.

Nash LT. 2005. Studies of primates in the field and in captivity: Similarities and differences in ethical concerns. In: Turner T (ed.) Biological Anthropology and Ethics: From Repatriation to Genetic Identity. SUNY Press, pp.27-48.

Week 3

Bernard HR. 2006. Interviewing: Unstructured and Semistructured (Ch. 9). In: Research Methods in Anthropology: Qualitative and Quantitative Approaches. Altamira press, pp. 210-250.

Bernard HR. 2006. Structured Interviewing I: Questionnaires (Ch. 10). In: Research Methods in Anthropology: Qualitative and Quantitative Approaches. Altamira press, pp. 251-298.

Bernard HR. 2006. Structured Interviewing II: Cultural Domain Analysis (Ch. 11). In: Research Methods in Anthropology: Qualitative and Quantitative Approaches. Altamira press, pp. 299-317.

Wali A. 2007. A Practical Introduction to Participatory Action Research (PAR) for Communities and Scholars. Field Museum.

Week 4

Lasker GW. 1996. The place of anthropometry in human biology. In: Ulijaszek SJ, Mascie-Taylor CGN (eds.) Anthropometry: The Individual and the Population. Cambridge, pp. 1-6.

Norgan NG. 2005. Laboratory and field measurements of body composition. *Public Health Nutrition* 8: 1108-1122.

Chumlea WC, Guo SS. 2002. The assessment of human growth. In: Cameron N (ed.) Human Growth and Development. Academic Press, pp. 349-362.

Katzmarzyk PT, Leonard WR. 1998. Climatic influences on human body size and proportions: Ecological adaptations and secular trends. *American Journal of Physical Anthropology* 106: 483-503.

Week 5

Leonard WR. 2004. Human energetics. In: Encyclopedia of Energy (Vol. 3). Elsevier, pp. 173-182.

Snodgrass JJ et al. 2005. Basal metabolic rate in the Yakut (Sakha) of Siberia. *American Journal of Human Biology* 17: 155-172.

Dufour DL, Piperata BA. 2008. Energy expenditure among farmers in developing countries: What do we know? *American Journal of Human Biology* 20: 249-258.

Week 6

Chobanian AV et al. 2003. Seventh report of the Joint National Committee on prevention, detection, evaluation, and treatment of high blood pressure. *Hypertension* 42: 1206-1252.

Grundy SM et al. 2005. Diagnosis and management of the metabolic syndrome. *Circulation* 112: 2735-2752.

Dressler WW. 1999. Modernization, stress, and blood pressure: New directions in research. *Human Biology* 71: 583-605.

Week 7

McDade TW, Williams SR, Snodgrass JJ. 2007. What a drop can do: Dried blood spots as a minimally-invasive method for integrating biomarkers into population-based research. *Demography* 44: 899-925.

Ice GH, James GD. 2007. Conducting a field study of stress: General principles. In: Ice GH & James GD (eds.) Measuring Stress in Humans: A Practical Guide for the Field. Cambridge, pp. 3-24.

McDade TW. 2001. Lifestyle incongruity, social integration, and immune function in Samoan adolescents. *Social Science and Medicine* 53: 1351-1362

Week 8

No assigned readings.

Week 9

Marcus LF & Corti M. 1996. Overview of the new, or geometric morphometrics. In: Marcus LF et al. (eds.) Advances in Morphometrics. Plenum, pp. 1-13.

Zollikofer CPE, Ponce de Leon MS. 2005. Morphometric analysis. In: Virtual Reconstruction: A Primer in Computer-Assisted Paleontology and Biomedicine. Wiley, pp. 225-276.

Week 10

No assigned readings.