

ANTH 487/587: BIOANTHROPOLOGY METHODS
Spring 2011
4 Credit Hours

Class Time & Location: Wednesday 6:00 - 8:50 pm, 203 Chapman Hall

Instructor: Dr. Josh Snodgrass

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Office Hours: Tuesday 2-4 & 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. Individual class meetings will be split between discussions of various methods for assessing human biology and hands-on application of laboratory techniques.

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

Required Readings: A collection of readings consisting of articles and book chapters (see below); all required readings are available on Blackboard

Evaluation Criteria:

Undergraduate Students

Class Attendance & Participation	20%
Lab Write-Ups (3 @ 5% each)	15%
Presentation of Research Proposal	10%
Res. Question/Hypotheses (Due: 5/18)	15%
Research Proposal (Due: 6/8)	40%

Graduate Students

Class Attendance & Participation	20%
Annotated Bibliography (Due: 5/13)	20%
Presentation of Research Proposal	10%
Res. Question/Hypotheses (Due: 5/18)	10%
Research Proposal (Due: 6/8)	40%

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 proposal that includes additional sections (e.g., budget and CV) and, additionally, will complete an annotated bibliography that 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 are 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 1/2 page (single-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
3/30	<p>Introduction to the Course</p> <p>Research in Biological Anthropology & Research Design Biological anthropology; Biocultural and evolutionary perspectives; Ultimate vs. proximate questions</p>	<p>1) Little & Kennedy 2010</p> <p>2) Hailman & Strier 2006 Chapter 1</p> <p>3) Day & Gastel 2006 Chapters 1 & 37</p>
4/6	<p>Anthropological Histories & Scope, Ethical Issues, and Proposal Writing What makes a project <i>anthropological</i>?</p> <p>Ethics, scientific integrity, and professional responsibility</p> <p>Research design; Theory; Field vs. laboratory issues; Literature-based data analysis; Picking a research topic & writing a research proposal</p>	<p>1) Hailman & Strier 2006 Chapter 2</p> <p>2) Bernard 2006 Ch. 4</p> <p>3) Ethical Issues (Pick One: Stinson 2005; Larsen & Walker 2005; Nash 2005)</p> <p>4) Leonard et al. 2003</p>
4/13	<p>Paleoanthropology: Taxonomy/Systematics Guest Lecture by Dr. Melanie Chang (UO Anthropology)</p> <p>Dr. Snodgrass will be in Minneapolis attending the Human Biology Association/American Association of Physical Anthropologists meetings</p>	<p>1) Day & Gastel 2006 Ch. 5</p> <p>2) TBA</p>
4/20	<p>Collecting Behavioral Data Guest Lecturer: Dr. Larry Sugiyama (UO Anthropology) <u>(Write-up due in class next week)</u></p> <p>Take home project: Accelerometry (complete 1 day of activity monitoring)</p>	<p>1) TBA</p> <p>2) Sugiyama 2004</p> <p>3) Madimenos et al. 2011</p>

4/27	<p>Human Energetics: Resting Metabolism, Physical Activity, and Total Daily Energy Expenditure <u>(Write-up due in class next week)</u> Calorimetry; Oxygen consumption; Basal metabolic rate; Heart rate monitoring; Accelerometry</p>	<p>1) Snodgrass 2011 2) Day & Gastel 2006 Ch. 4 3) Snodgrass et al. 2005</p>
5/4	<p>Cardiovascular, Metabolic, and Skeletal Health <u>(Write-up due in class next week)</u> Blood pressure, Hemoglobin; Plasma lipids; Glucose & Diabetes; Cardiovascular risk; The metabolic syndrome; Respiratory function; Bone density</p> <p>Take home project: Collect salivary cortisol samples at home (3 times per day for 2 days)</p>	<p>1) Dressler 2007 2) McDade et al. 2007 3) Ice & James 2007</p>
5/11	<p>The Human Social Environment: Qualitative & Quantitative Methods <i>Guest Lecturer: Dr. Heather McClure (OR Social Learning Center)</i> Ethnography; Questionnaires; Community-based participatory research; Cultural consensus analysis</p> <p>Biomarkers Biomarkers of health and physiology; Minimally invasive techniques; Dried blood spots & saliva samples; Stress biomarkers; Cortisol, CRP, & Epstein-Barr Virus antibodies <u>(Annotated bibliography due for graduate students today)</u></p>	<p>1) McClure et al. 2010 2) Wali 2007 3) McDade 2001</p>
5/18	<p>Skeletal Biology: Human Skeletal Variation <i>Guest Lecturer: Dr. Stephen Frost (UO Anthropology)</i> Osteometrics; Craniometrics; 3D morphometrics <u>(Research question & hypotheses due today—for everyone)</u></p> <p>Proposal Writing—The Return! How to write a grant proposal (cont'd); Tips for a successful proposal; How proposals are reviewed; How to rewrite a proposal</p>	<p>1) Marcus & Corti 1996 2) Day & Gastel 2006 Chapter 31 3) Meredith 2010 Introduction</p>
5/25	<p>Bioanthropology Data Analysis Dealing with data; Basic data analyses; Pilot research and power analyses <i>Guest Lecturer: Dr. Frances White (UO Anthropology)</i></p>	<p>1) TBA 2) Day & Gastel 2006 Ch. 27</p>
6/1	<p>Presentation of student research proposals (5 minutes per presentation for undergrads; 10 minutes per presentation for grad students)</p>	<p>No assigned readings</p>
	<p>Research Proposal Due: Wednesday, June 8 @ 5pm</p>	

REQUIRED READINGS

Week 1 (March 30)

Little MA, Kennedy KAR. 2010. Introduction to the history of American physical anthropology (Ch. 1). In: Little MA and Kennedy KAR (eds.) Histories of American Physical Anthropology in the Twentieth Century. Lanham: Lexington Books, pp. 1-23.

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

Day RA, Gastel B. 2006. What is scientific writing AND How to prepare grant proposals and progress reports (Chs. 1 & 37). In: How to Write and Publish a Scientific Paper (6th Edition). Greenwood, pp. 3-5 & 233-240.

Week 2 (April 6)

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.

Leonard, W.R., Robertson, M.L., Snodgrass, J.J., and Kuzawa, C.W. 2003. Metabolic correlates of hominid brain evolution. *Comparative Biochemistry and Physiology* 136A: 5-15.

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 (April 13)

Day RA, Gastel B. 2006. Ethics in scientific publishing (Ch. 5). In: How to Write and Publish a Scientific Paper (6th Edition). Greenwood, pp. 25-28.

TBA

Week 4 (April 20)

Bernard HR. 2006. Direct and indirect observation (Ch. 15). In: Research Methods in Anthropology: Qualitative and Quantitative Approaches. Altamira press, pp. 413-450.

Sugiyama LS. Illness, injury, and disability among Shiwiar forager-horticulturalists: Implications of health-risk buffering for the evolution of human life history. *American Journal of Physical Anthropology* 123: 371-389.

Madimenos FC, Snodgrass JJ, Blackwell AD, Liebert MA, Sugiyama LS. 2011. Physical activity in an indigenous Ecuadorian forager-horticulturalist population as measured using accelerometry. *American Journal of Human Biology*, in press.

Week 5 (April 27)

Snodgrass JJ. 2011. Human energetics. In: Stinson et al. (eds.) Human Biology: An Evolutionary and Biocultural Perspective (2nd Edition). Wiley, in press.

Day RA, Gastel B. 2006. What is a scientific paper? (Ch. 4). In: How to Write and Publish a Scientific Paper (6th Edition). Greenwood, pp. 18-24.

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

Week 6 (May 4)

Dressler WW. 2007. Cultural dimensions of the stress process: Measurement issues in fieldwork. In: Ice GH & James GD (eds.) Measuring Stress in Humans: A Practical Guide for the Field. Cambridge, pp. 27-59.

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.

Week 7 (May 11)

McClure HH, Martinez CR, Snodgrass JJ, Eddy JM, Jimenez RA, Isiordia LA, McDade TW. 2010. Discrimination-related stress, blood pressure and Epstein-Barr virus antibodies among Latin American immigrants in Oregon, US. *Journal of Biosocial Science* 42: 433-461.

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

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

Week 8 (May 18)

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.

Day RA, Gastel B. 2006. Avoiding jargon (Ch. 31). In: How to Write and Publish a Scientific Paper (6th Edition). Greenwood, pp. 199-205.

Meredith D. 2010. Explaining your research is a professional necessity (Introduction). In: Explaining Research: How to Reach Key Audiences to Advance Your Work. Oxford, pp. 1-16.

Week 9 (May 25)

TBA

Day RA, Gastel B. 2006. How to present a paper orally (Ch. 27). In: How to Write and Publish a Scientific Paper (6th Edition). Greenwood, pp. 167-172.