ANTH 5349: *Bioarchaeology, Spring 2011*

INSTRUCTOR: Dr. Naomi Cleghorn
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Email: Cleghorn@uta.edu
Office Hours: Monday 12 – 2pm , or by appointment

CLASS MEETS: Wednesdays, 5:30 – 8:20 pm in UH 468

COURSE DESCRIPTION:

Bioarchaeology is the study of human remains in archaeological contexts. This is a critical subfield within archaeology, as these remains provide direct evidence of individual life histories, including evidence for identity, health, habitual activity and work, and interpersonal interactions. In addition, the discovery of bioarchaeological remains can change the nature of archaeological research projects, and always presents the archaeologist with a complex array of ethical and legal responsibilities.

In this course, we will discuss the practical, theoretical, and ethical issues of bioarchaeology. In addition, students will gain hand-on experience in the analysis and interpretation of human skeletal remains.

REQUIRED TEXTS:

- **Jane E. Buikstra and Douglas H. Ubelaker**, *Standards for data collection from human skeletal remains: proceedings of a seminar at the Field Museum of Natural History* (Arkansas Archeological Survey, 1994).
- **Mary Anne Katzenberg and Shelley Rae Saunders**, *Biological anthropology of the human skeleton* (Wiley-Liss, 2008).
- **Clark Spencer Larsen**, *Bioarchaeology: interpreting behavior from the human skeleton* (Cambridge University Press, 1999).

RECOMMENDED TEXTS:
I also *recommend* that you borrow or purchase a human osteology manual. Possible versions include:

D. Gentry Steele and Claud A. Bramblett, *The Anatomy and Biology of the Human Skeleton* (Texas A&M University Press, 1994)

or

Timothy D. White and Pieter A. Folkens, *The human bone manual* (Academic Press, 2005).

ADDITIONAL READINGS: See below.

COURSE LEARNING OBJECTIVES:
Upon completion of this course students will:

- Be able to assess age, sex, and stature from skeletal remains.
- Be able to identify evidence for commonly occurring pathological conditions and traumatic injury in skeletal remains.
- Know the range of molecular and micromorphological analyses available to bioarchaeologists, and understand the limits and applications of these techniques.
- Be able to explain key theoretical constructs and debates within bioarchaeology.
- Understand the legal and ethical issues relevant to bioarchaeological research.

COURSE REQUIREMENTS:
Students are expected to attend all class sessions and should expect to spend additional time with laboratory materials outside of scheduled class hours. If you have not yet taken a course in human osteology, you should spend some additional time familiarizing yourself with the skeletal material. Grades will be based on the following criteria:

5 % Reading notes and participation:
Students should be prepared to discuss all required reading and actively contribute to class discussions. Reading notes on *articles* are a key component of this grade. You do not need to submit notes on any readings from the Buikstra and Ubelaker's, Clark Spencer Larsen's, or Byers' textbook, unless you want to. You are free to structure these notes as outlines, narrative statements, or whatever works best for you. Students should keep a copy of these notes in their personal Zotero files on-line, but they should be submitted for grading in the Reading Notes journal on Blackboard. Notes must be submitted by the beginning of the class to which they pertain. These *may* initially be submitted on paper, but should then be submitted electronically to insure proper credit. The purpose of these notes is to help students organize their thoughts in preparation for discussion, and develop their own annotated bibliography for future reference.

15 % Laboratory assignments:
Over the course of the semester we will have several laboratory assignments that will provide you with some practical analytical experience. These will range from relatively brief in-class observations and analyses, to lengthy take-home analyses.

20 % Osteobiography:
Each student will prepare an osteobiography on one of the laboratory skeletons, providing an overall picture of that individual's age, sex, stature, biological affinity, health, evidence of trauma and any other details relevant to your skeleton. You will prepare a finished professional report on your osteobiography, including photo documentation, and submit this by **April 6th, 2011**.

20 % Research paper:
Each student will be assigned a paper topic during the first week of class, and will be expected to begin the research process immediately. As part of this assignment, students will create an on-line bibliography and become familiar with reference management software. We will be using Zotero, as this will allow us to create common, shared bibliographies. The research paper should be 10 to 15 pages in length, excluding the bibliography, and should follow these formatting guidelines: 11 pt. font, double spaced, 1 inch margins, with appropriate section headings. In-text citation and bibliographic format should conform to that of the American Journal of Physical Anthropology. (This style is available in Zotero, although it is necessary to install it.) Students should write this paper as for submission for journal publication, and should include an abstract.

In order to earn full credit, it will be necessary to submit specific portions of the research paper as these become due. Thus, students will construct and revise their paper over the course of the semester (and not in the last week before it is due). The grade for this will be based exclusively on the final product, but the final grade will be reduced 5% per day for every day any portion of the paper is late or incomplete.

Paper Section Due Dates:

February 2nd:	**Bibliography including a minimum of 12 references**
February 23rd:	**Detailed outline**
March 23rd:	**Partial draft (~5 pages)**
April 9th:	**Full draft**
April 27th:	**Final paper**

Requirements continued below…

10 % Class presentation:
Research projects (based on the written term paper) will be presented on the last day of class, **May 4th**, in short (15 minute) presentations, including power point slides.

10 % Midterm:
The Mid-term will be a take-home essay due **March 11th** (the Friday before spring break).

20 % Final Exam:
The take-home portion of the final will be due on the day of the final exam, **May 11th**. In addition, there will be an in-class laboratory exam.

ADDITIONAL COURSE POLICIES:
Attendance and Late-Entry Policy: You are expected to attend all scheduled classes. Failure to do so deprives your classmates of your valuable contribution to discussions. Since we only meet once a week, missing even one class is a significant loss for the semester. Coming to class late will be treated as an absence.

I understand that emergencies may occasionally prevent your attendance, and I therefore allow one absence (or late entry) without penalty to your participation grade (although you will have to make up any missed assignments). If you are absent, please contact me as soon as possible to let me know what your situation is. If you are absent more than once, you will lose 1 percent of your overall course grade for each day that you are absent.

Drop Policy: Students may drop or swap (adding and dropping a class concurrently) classes through self-service in MyMav from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Drops can continue through a point two-thirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. **Students will not be automatically dropped for non-attendance**. Repayment of certain types of financial aid administered through the University may be required as the result of dropping classes or withdrawing. Contact the Financial Aid Office for more information.

Americans with Disabilities Act: The University of Texas at Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including the *Americans with Disabilities Act (ADA)*. All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Any student requiring an accommodation for this course must provide the instructor with official documentation in the form of a letter certified by the staff in the Office for Students with Disabilities, University Hall 102. Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability or by calling the Office for Students with Disabilities at (817) 272-3364.

Academic Integrity: It is the philosophy of The University of Texas at Arlington that academic dishonesty is a completely unacceptable mode of conduct and will not be tolerated in any form. All persons involved in academic dishonesty will be disciplined in accordance with University regulations and procedures. Discipline may include suspension or expulsion from the University. According to the UT System Regents' Rule 50101, §2.2, "Scholastic dishonesty includes but is not limited to cheating, plagiarism, collusion, the submission for credit of any work or materials that are attributable in whole or in part to another person, taking an examination for another person, any act designed to give unfair advantage to a student or the attempt to commit such acts."

Student Support Services Available: The University of Texas at Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. These resources include tutoring, major-based

learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals to resources for any reason, students may contact the Maverick Resource Hotline at 817-272-6107 or visit www.uta.edu/resources for more information.

Electronic Communication Policy: The University of Texas at Arlington has adopted the University "MavMail" address as the sole official means of communication with students. MavMail is used to remind students of important deadlines, advertise events and activities, and permit the University to conduct official transactions exclusively by electronic means. For example, important information concerning registration, financial aid, payment of bills, and graduation are now sent to students through the MavMail system. All students are assigned a MavMail account. ***Students are responsible for checking their MavMail regularly.*** Information about activating and using MavMail is available at http://www.uta.edu/oit/email/. There is no additional charge to students for using this account, and it remains active even after they graduate from UT Arlington.

To obtain your NetID or for logon assistance, visit https://webapps.uta.edu/oit/selfservice/. If you are unable to resolve your issue from the Self-Service website, contact the Helpdesk at helpdesk@uta.edu.

READING AND DISCUSSION SCHEDULE: (Subject to revision.)
B/U = Buikstra and Ubelaker K/S = Katzenberg and Saunders CSL = Clark Spencer Larsen

Topic	B/U	K/S	CSL	Other Reading
Week 1: January 19th				
Skeletal Element Review, Standards and Measurements	1, 2, 7	-	1	Buikstra, 1977
Week 2: January 26th				
Skeletal Development/Age/Sex estimation	3, 4	4, 5		Byers ch. 8 & 9
Week 3: February 2nd				
SNOW DAY – NO CLASS **Bibliography Due**				
Week 4: February 9th				
Dental development, wear and recording	5, 6	8,9	7	
Week 5: February 16th				
Dental wear and pathology	-	10	3.1 – 3.3	Goodman/Rose1990:pp59-64 Larsen 1983 Larsen et al. 1991 Molnar S. 1972 Cucina/Tiesler 2003 Ogden 2008
Week 6: February 23rd				
Stress in Growth and Development	-	-	2	Mays 2006 Stuart-Macadam 1992

				Walker et al. 2009 Pinhasi 2008 Byers Ch.10
Week 7: March 2nd				
Pathology 1: metabolic and hemopoeitic disease and congenital anomalies **Detailed Paper Outline DUE**	-	12, 17		Dickel & Doran, 1987 Bridges, 1991 Stirland, 1991 Phillips & Silvilich, 2006 Mays 2008 Barnes 2008
Week 8: March 9th				
Pathology 2: infectious disease and tumors	10	-	3.4 – 3.6	Weston 2008 Smith 2006 Santos/Roberts 2006 Rafi et al. 1994 Merbs 1992 Melikian, 2006 Ortner 2008 Brothwell 2008
Week 9: March 16th				
SPRING BREAK -- NO CLASS				No readings
Week 10: March 23rd				
Partial Draft Due Trauma and ancestry	-	11	4	Bennike 2008 Lovell, 1997 Smith, 2003 Walker, 2001 Byers ch. 7
Week 11: March 30th				
Activity Patterns and Biomechanics Non-Metric variation and biodistance (We need to move this class to Tuesday or Monday)	8	6	5, 6, 9	Bridges, 1989 Ruff, 1987 Sofaer Derevenski, 2000
Week 12: April 6th				
Taphonomy DNA, Isotopic Analysis and Diet	9	3 13, 14, 15	8	Byers ch. 16 Turner-Walker 2008 Behrensmeyer 1978 Villa/Mahieu 1991
Week 13: April 13th				
Kathy Kasper, DDS, Forensic Odontology				Clement 2009, Avon 2004
Casting lab				
Osteobiographies Due				
Week 14: April 20th				
Paleodemography and the "osteological paradox"	-	18, 19		Bocquet-Appel/Masset, 1982

				Wood et al., 1992 Van Gerven/Armelagos, 1983 Cohen, 1994
Week 15: April 27th				
Ethics and Cultural Patrimony **Final Paper DUE**	-	1	-	Deloria 1992 Ousley et al. 2005 AAPA position statement AAPA Ethics NAGPRA and related texts TBA
Week 16: May 4th				
Student Presentations				

ADDITIONAL READINGS:

American Association of Physical Anthropologists. 2003. Code of Ethics.

American Association of Physical Anthropologists. 2007. Position Statement on the Department of the Interior's Proposed Rue for the Disposition of Culturally Unidentifiable Human Remains.

Barnes E. 2008. Congenital Anomalies. In: Pinahasi R, Mays S, editors. Advances in Human Paleopathology. John Wiley & Sons, Ltd. pp. 329-362.

Bennike P. 2008. Trauma. In: Pinahasi R, Mays S, editors. Advances in Human Paleopathology. John Wiley & Sons, Ltd. pp. 309-328.

Behrensmeyer AK. 1978. Taphonomic and Ecologic Information from Bone Weathering. Paleobiology 4:150-162.

Bocquet-Appel JP, Masset C. 1982. Farewell to paleodemography. Journal of Human Evolution 11:321-333.

Bridges PS. 1989. Changes in activities with the shift to agriculture in the southeastern United States. Current Anthropology 30:385-394.

Brothwell D. 2008. Tumors and tumor-like processes. In: Pinahasi R, Mays S, editors. Advances in Human Paleopathology. John Wiley & Sons, Ltd. pp. 253-281.

Bridges PS. 1991. Degenerative joint disease in hunter-gatherers and agriculturalists from the southeastern United States. American Journal of Physical Anthropology 85:379-391.

Buikstra JE. 1977. Biocultural dimensions of archaeological study: a regional perspective. In: Blakely RL, editor. Biocultural Adaptation in Prehistoric America. University of Georgia Press. p 76-84.

Byers S. 2010. Introduction to Forensic Anthropology (4th Edition), Prentice Hall.

Cohen, MN. 1994. The osteological paradox reconsidered. Current Anthropology 35:629-637.

Cucina A, Tiesler V. 2003. Dental caries and antemortem tooth loss in the Northern Peten area, Mexico: A biocultural perspective on social status differences among the Classic Maya. American Journal of Physical Anthropology 122:1-10.

Deloria, Jr. V. 1992. Indians, archaeologists, and the future. American Antiquity 57:595-598.

Dickel DN, Doran GH. 1989. Severe neural tube defect syndrome from the early Archaic of Florida. American Journal of Physical Anthropology 80:325-334.

Goodman AH, Rose JC. 1990. Assessment of systemic physiological perturbations from dental enamel hypoplasias and associated histological structures. Yearbook of Physical Anthropology 33:59-110.

Larsen CS. 1983. Behavioural implications of temporal change in cariogenesis. Journal of Archaeological Science 10:1-8.

Larsen CS. 1995. Biological changes in human populations with agriculture. Annual Review of Anthropology 24:185-213.

Larsen CS, Shavit R, Griffin MC. 1991. Dental caries evidence for dietary change: an archaeological context. In: Kelley MA, Larsen CS, editors. Advances in Dental Anthropology. New York: Wiley-Liss, Inc. p 179-202.

Lovell NC.1997. Trauma analysis in paleopathology. Yearbook of Physical Anthropology 40:139-170.

Mays SA. 2006. Age-related cortical bone loss in women from a 3rd-4th century AD population from England. American Journal of Physical Anthropology 129: 518-528.

Melikian M. 2006. A case of metastatic carcinoma from 18th century London. International Journal of Osteoarchaeology 16:138-144.

Merbs CF. 1992. A new world of infectious disease. Yearbook of Physical Anthropology 35:3-42.

Molnar S. 1972. Tooth wear and culture: a survey of tooth functions among some prehistoric populations. Current anthropology 13:511-526.

Native American Graves Protection and Repatriation Act (NAGPRA). 1990.

Ogden A. 2008. Advances in the Palaeopathology of Teeth and Jaws. In: Pinahasi R, Mays S, editors. Advances in Human Paleopathology. John Wiley & Sons, Ltd. pp. 283-307.

Ortner DJ. 2008. Differential diagnosis of skeletal lesions in infections disease. In: Pinahasi R, Mays S, editors. Advances in Human Paleopathology. John Wiley & Sons, Ltd. pp. 191-214.

Ousley SD, Billeck WT, Hollinger RE. 2005. Federal repatriation legislation and the role of physical anthropology in repatriation. Yearbook of Physical Anthropology 48:2-32.

Pinhasi R. 2008. Growth in Archaeological Populations. In: Pinahasi R, Mays S, editors. Advances in Human Paleopathology. John Wiley & Sons, Ltd. pp. 363-380.

Pinhasi R and Mays S. 2008 *Advances in human palaeopathology*, John Wiley and Sons.

Phillips SM, Silvilich M. 2006. Cleft palate: a case study of disability and survival in prehistoric North America. International Journal of Osteoarchaeology 16:528-535.

Rafi A, Spigelman M, Stanford J, Lemma E, Donoghue H, Zias J. 1994. DNA of *Mycobacterium leprae* detected by PCR in ancient bone. International Journal of Osteoarchaeology 4:287-290.

Ruff CB. 1987. Sexual dimorphism in human lower limb bone structure: relationship to subsistence strategy and sexual division of labor. Journal of Human Evolution 16:391-416.

Santos AL, Roberts CA. 2006. Anatomy of a serial killer: differential diagnosis of tuberculosis based on rib lesions of adult individuals from the Coimbra Identified Skeletal Collection, Portugal. American Journal of Physical Anthropology 130:38-49.

Smith MO. 2003. Beyond palisades: the nature and frequency of late prehistoric deliberate violent trauma in the Chickamauga Reservoir of East Tennessee. American Journal of Physical Anthropology 121:303-318.

Smith MO. 2006. Treponemal disease in the Middle Archaic to Early Woodland periods of the Western Tennessee River Valley. American Journal of Physical Anthropology 131:205-217.

Sofaer Derevenski JR 2000. Sex differences in activity-related osseous change in the spine and the gendered division of labor at Ensay and Wharram Percy, UK. American Journal of Physical Anthropology 111:333-354.

Stirland A. 1991. Paget's disease (osteitis deformans): a classic case? International Journal of Osteoarchaeology 1:173-177.

Stuart-Macadam P. 1992. Porotic hyperostosis: a new perspective. American Journal of Physical Anthropology 87:39-47.

Turner-Walker G. 2008. The Chemical and Microbial Degradation of Bones and Teeth. In: Pinahasi R, Mays S, editors. Advances in Human Paleopathology. John Wiley & Sons, Ltd. pp. 1-29.

Van Gerven DP, Armelagos GJ. 1983. "Farewell to paleodemography?" Rumors of its death have been greatly exaggerated. Journal of Human Evolution 12:353-360.

Villa P, Mahieu E. 1991. Breakage patterns of human long bones. Journal of Human Evolution 21:27-48.

Walker PL. 2001. A bioarchaeological perspective on the history of violence. Annual review of anthropology 30:573-596.

Walker PL. 2008. Bioarchaeological ethics: a historical perspective on the value of human remains. In: Katzenberg MA, Saunders SR, editors. Biological anthropology of the human skeleton, 2nd edition. New York: Wiley-Liss. p 3-40.

Walker PL, Bathurst RR, Richman R, Gjerdrum T, Andrushko VA. 2009. The causes of porotic hyperostosis and cribra orbitalia: a reappraisal of the iron-deficiency-anemia hypothesis. American Journal of Physical Anthropology 139:109-125.

Weston DA. 2008. Investigating the specificity of periosteal reactions in pathology museum specimens. American Journal of Physical Anthropology 137:48-59.

Wood JW, Milner GR, Harpending HC, Weiss KM. 1992. The osteological paradox. Current Anthropology 33:343-370.