

ANTH 116
Bioarchaeology

Tues/Thurs 2 - 3:15 pm
Instructor: Kristina Killgrove
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Hours: Wed 3-4pm
IM Hours: Mon 8-9pm

Course Description: How are mummies formed, and what can they tell us about past burial practices? Does the concept of “race” really exist at a biological level? What is NAGPRA, and why do Native Americans care if scientists study their ancestors’ bones? Can carbon and nitrogen isotopes tell us about dietary practices? Bioarchaeology, or the study of human skeletal remains from archaeological sites, tackles all these questions and more in the search for answers about ancient human life across the globe. Although a solid knowledge of human anatomy is imperative for identifying fragments of bone, this survey course will draw on techniques from a variety of disciplines including biology, chemistry, archaeology, pathology, demography, and history in order to understand how to reconstruct both individual lives and collective population histories. During the semester, we will investigate the theory and the methods behind bioarchaeological analysis through a series of lectures, projects, and class discussions.

Texts:

Required – *Bioarchaeology* by Clark Spencer Larsen (BIO)

The Archaeology of Human Bones by Simon Mays (AHB)

Additional articles as listed on the syllabus: online/e-Reserve/e-Journals

Recommended – *Human Bone Manual* (HBM) or *Human Osteology* (HO) by Tim White

Optional – *Biological Anthropology of the Human Skeleton* by Katzenberg and Saunders (BAHS)

The Archaeology of Death and Burial by Mike Parker Pearson (ADB)

Requirements:



Projects (40%) – There will be four (4) projects/labs over the course of the semester, most of which will be conducted during class time. You will be expected to hand in a short (4-page) write-up of your conclusions. Although labs will involve working with other students, your papers should be your own work. Projects are due one week from the date of assignment.



Discussion/Attendance/Quiz (10%) – After the first month of the semester, we will be having class discussions on theories and issues in contemporary bioarchaeology based on the readings assigned through that day. Attendance at and participation in these discussions is required. Extra credit assignments throughout the semester can boost this part of your grade.



Paper (25%) – Your paper assignment will be to choose a disease that manifests on bone and research its origin, spread, etc. Deviations from this topic must be cleared first with me. Papers should be 10-12 pages in length, fully referenced. More information on topic and format will be given later in the semester.



Final Exam (25%) – The final exam for the course will be take-home and is due to my box in the RLA (AL 108) *no later than* 5pm Friday, May 5. More information will be forthcoming on the format of the final, but it will be similar to writing a grant proposal in that you will be asked to address a research question using a skeletal population and bioarchaeological tools.

Course Outline:

Date	Topic	Reading/Assignments Due
UNIT 1 Placing Skeletons in Archaeology		
Jan. 12	Introduction to Bioarchaeology	<i>BIO</i> Ch. 1; <i>ADB</i> Ch. 1; <i>AHB</i> Ch. 1
Jan. 17	The Human Skeleton	<i>HBM</i> Chs.1, 6 <u>or</u> <i>HO</i> Ch. 2
Jan. 19	History of Bioarchaeology Quiz 1: Human Skeleton	Killgrove 2005 Ch. 2; Buikstra 1977; Spencer 1982
Jan. 24	Principles of Archaeology	<u>Archaeo:</u> Thomas 1991; Barker 2001 <u>Bioarch:</u> <i>ADB</i> Ch. 2; <i>AHB</i> Ch. 2
Jan. 26	Space, Place, and Epitaphs	Silverman 2002 Charles & Buikstra 2002
Jan. 31	Project 1: Old CH Cemetery Project	Bring a tape measure and writing tools and meet at the cemetery!
UNIT 2 Palaeodemography		
Feb. 2	Subadult Growth and Development Age and Sex Estimation	<i>BIO</i> Ch. 2; <i>AHB</i> Ch. 3; <i>HO</i> Ch. 17 <u>or</u> <i>HBM</i> Ch. 19
Feb. 7	Rank and Social Status	Dickson et al. 2005; Brown 1981; Morris 1992 Project 1 due
Feb. 9	Project 2: Demography Lab	Milner et al. 2000 Bring <i>HBM</i> <u>or</u> <i>HO</i> to class!
Feb. 14	Discussion: Who were these people?	Meindl and Russell 1998
UNIT 3 Ancient Medicine, Modern Problems		
Feb. 16	Disease Patterns – Ancient World	<i>AHB</i> Chs. 6-7 Project 2 due
Feb. 21	Agricultural Revolution, Palaeobotany	Larsen 2003; Diamond 1987; Groube 1996; MacNeish 1992
Feb. 23	Urbanism and Urbanization	Cowgill 2004; Boocock et al. 1995
Feb. 28	Disease Patterns – New World Contact	<i>BIO</i> Ch. 3

Mar. 2	Trauma and Surgery	<i>BIO</i> Ch. 4; <i>AHB</i> Ch. 8
Mar. 7	Musculoskeletal Markers	<i>BIO</i> Chs. 5 & 6
Mar. 9	Project 3: Pathology lab (bones and teeth)	Ortner 1991; <i>HBM</i> Ch. 17
Mar 14-16	<i>No class - Spring Break</i>	Start researching your papers!

UNIT 4	Contemporary Issues in Osteology
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Mar. 21	Race and Forensics	AAPA Race Statement; Gould 1996; <i>HBM</i> Ch. 5 Project 3 due
Mar. 23	Ethnicity and Repatriation	NAGPRA law, SAA & AAPA Websites Ousley et al. 2005; Deloria 1992
Mar. 28	Discussion: Ethics and Osteology	<i>HBM</i> Ch. 3 or <i>HO</i> Ch. 16
Mar. 30	Laboratory Methods (<i>Isotope Lab Tour</i>)	<i>BIO</i> Ch. 8; <i>AHB</i> Chs. 9-10
Apr. 4	Zooarchaeology	Davis 1987; O'Connor 1996
Apr. 6	Cremations	<i>AHB</i> Ch. 11; Killgrove 2005 Ch. 3
Apr. 11	Mummies and Bog Bodies	Bahn 1997; Levathes 1987; Aufderheide 2002

UNIT 5	Putting It All Back Together
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Apr. 13	Population Interaction	<i>BIO</i> Ch. 9; <i>AHB</i> Chs. 4-5; <i>HBM</i> Ch. 19 or <i>HO</i> Ch. 20
Apr. 18	Project 4: Biodistance Lab	Buikstra et al. 1990; Killgrove 2002 Ch. 3
Apr. 20	The Dead as Agents	Becker 1996; Chapman 2003
Apr. 25	Discussion: The Osteological Paradox	Wood et al. 1992; <i>HO</i> Ch. 19; Nawrocki 1995 Project 4 due
Apr. 27	Concluding Remarks / Movie: <i>Wanted – Butch and Sundance</i>	Papers Due
May 5	FINAL EXAM due to my box in AL 108	(no later than 5pm!)

Bibliography

W = course website

J = e-Journals

E = E-reserves

P = UL paper reserves

Required Readings:

- American Association of Physical Anthropologists 1996. "AAPA statement on biological aspects of race." *American Journal of Physical Anthropology* 101:569-70. W
- American Association of Physical Anthropologists 2000. "Statement by the American Association of Physical Anthropologists on the Secretary of Interior's letter of 21 September 2000 regarding cultural affiliation of Kennewick Man." W
- Aufderheide, AC. 2002. "Mechanisms of mummification," in *The Scientific Study of Mummies*, pp. 41-71. E
- Bahn, PG. 1997. "Bodies of the bogs." *Archaeology* 50(4):62-7. W
- Barker, P. 2001. "How archaeological sites are formed," in *Techniques of Archaeological Excavation*, pp. 16-35. Routledge. E
- Becker, MJ. 1996. "Medieval mortuary customs in Italy: skull relocations and other unusual burial practices." *Archeologia Medievale* 23: 699-714. W
- Boocock, P, CA Roberts, and K Manchester. 1995. "Maxillary sinusitis in Medieval Chichester, England." *American Journal of Physical Anthropology* 98(4):483-95. E
- Brown, JA. 1981. "The search for rank in prehistoric burials," in *The Archaeology of Death*, edited by Chapman, Kinnes, and Randsborg, pp. 25-37. Cambridge University Press. W
- Buikstra, JE, SR Frankenberg, and LW Konigsberg. 1990. "Skeletal biological distance studies in American physical anthropology: recent trends." *American Journal of Physical Anthropology* 82:1-7. W
- Buikstra, JE. 1977. "Biocultural dimensions of archaeological study: a regional perspective," in *Biocultural Adaptation in Prehistoric America*, edited by RL Blakely, pp. 67-84. University of Georgia Press. W
- Chapman, R. 2003. "Death, society and archaeology: the social dimensions of mortuary practices." *Mortality* 8(3):305-312. J
- Charles, DK and JE Buikstra. 2002. "Siting, sighting, and citing the Dead," in *The Space and Place of Death*, edited by Silverman and Small, pp. 13-26. Archeological Papers of the American Anthropological Association #11. E
- Cowgill, G. 2004. "Origins and development of urbanism: an archaeological perspective." *Annual Review of Anthropology* 33:525-49. J
- Davis, SJM. 1987. "Methods and problems in zoo-archaeology," in *The Archaeology of Animals*, pp. 23-46. Yale University Press. E
- Deloria, Vine Jr. 1992. "Indians, archaeologists, and the future." *American Antiquity* 57(4):595-8. J
- Diamond, J. 1987. "The worst mistake in the history of the human race." *Discover* 8(5):64-6. W
- Dickson, JH, K Oeggl, LL Handley. 2005. "The Iceman reconsidered." *Scientific American* Special Edition 15(1):4-13. J

- Gould, SJ. 1996. "American polygeny and craniometry before Darwin," in *The Mismeasure of Man*, pp. 62-104. W.W. Norton & Company. E
- Groube, L. 1996. "The impact of diseases upon the emergence of agriculture," in *The Origins and Spread of Agriculture and Pastoralism in Eurasia*, edited by DR Harris, pp. 101-129. Smithsonian Institution Press. E
- Killgrove, K. 2005. "Bioarchaeology in Italy," in *Bioarchaeology in the Roman World*, Chapter 2, pp. 6-33. MA Thesis, UNC Chapel Hill. W
- Killgrove, K. 2005. "Evidence from ancient cremations," in *Bioarchaeology in the Roman World*, Chapter 3, pp. 34-60. MA Thesis, UNC Chapel Hill. W
- Killgrove, K. 2002. "Method and theory," in *Defining Relationships between Native American Groups: a Biodistance Study of the North Carolina Coastal Plain*, Chapter 3, pp. 68-95. MA Thesis, East Carolina University. W
- Larsen, CS. 2003. "Animal source food and human health during evolution." *Journal of Nutrition* 133(11):3893-7. J
- Levathes, LE. 1987. "Mysteries of the bog." *National Geographic* 171:396-420. E
- MacNeish, RS. 1992. "Theories of the origins of agriculture," in *The Origins of Agriculture and Settled Life*, pp. 1-31. University of Oklahoma Press. E
- Meindl, RS and KF Russell. 1998. "Recent advances in method and theory in palaeodemography." *Annual Review of Anthropology* 27:375-399. J
- Milner, GR, JW Wood, JL Boldsen. 2000. "Paleodemography," in *Biological Anthropology of the Human Skeleton*, edited by Katzenberg and Saunders, pp. 467-497. Wiley-Liss. E
- Morris, I. 1992. "The anthropology of a dead world," in *Death-ritual and Social Structure in Classical Antiquity*, pp. 1-30. Cambridge University Press. E
- Native American Graves Protection and Repatriation Act (NAGPRA) 1990. W
- Nawrocki, SP. 1995. "Taphonomic processes in historic cemeteries," in *Bodies of Evidence: Reconstructing Histories through Skeletal Analysis*, edited by AL Grauer, pp. 49-66. W
- O'Connor, TP. 1996. "A critical overview of archaeological animal bone studies." *World Archaeology* 28(1):5-19. J
- Ortner, DJ. 1991. "Theoretical and methodological issues in palaeopathology," in *Human Paleopathology: Current Syntheses and Future Options*, edited by DJ Ortner and AC Aufderheide, pp. 5-11. Smithsonian Institution Press. W
- Ousley, SD, WT Billeck, and RE Hollinger. 2005. "Federal repatriation legislation and the role of physical anthropology in repatriation." *American Journal of Physical Anthropology* 128(Suppl. 41):2-32. J
- Parker Pearson, M. 1999. "Learning from the dead," in *The Archaeology of Death and Burial*, Chapter 1, pp. 1-20. Texas A&M University Press. E
- Parker Pearson, M. 1999. "From now to then: ethnoarchaeology and analogy," in *The Archaeology of Death and Burial*, Chapter 2 pp. 21-44. Texas A&M University Press.
- Silverman, H. 2002. "Introduction: the space and place of death," in *The Space and Place of Death*, edited by Silverman and Small, pp. 1-12. Archeological Papers of the American Anthropological Association #11. E

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Spencer, F. 1982. "Introduction," in <i>A History of American Physical Anthropology 1930-1980</i> , edited by F. Spencer, pp. 1-10. Academic Press.	W
Thomas, DH. 1991. "The basics of anthropological archaeology," in <i>Archaeology Down to Earth</i> , pp. 29-59. Harcourt Brace & Company.	E
Wood, JW, GR Milner, HC Harpending, and KM Weiss. 1992. "The osteological paradox: Problems of inferring prehistoric health from skeletal samples." <i>Current Anthropology</i> 33:343-370.	J

Books on Reserve at the UL (for papers and projects):

Aufderheide, AC and C Rodríguez-Martín. 1998. <i>The Cambridge Encyclopedia of Human Paleopathology</i> . Cambridge University Press.	P
Baker, BJ, TL Dupras, and MW Tocheri. 2005. <i>The Osteology of Children and Infants</i> . Texas A&M University Press.	P
Bass, WM. 1987. <i>Human Osteology: A Laboratory and Field Manual</i> . Missouri Archaeological Society.	P
Cox, M and S Mays. 2000. <i>Human Osteology in Archaeology and Forensic Science</i> . Greenwich Medical Media, Ltd.	P
Grauer, AL and P Stuart-Macadam. 1998. <i>Sex and Gender in Paleopathological Perspective</i> . Cambridge University Press.	P
İşcan, MY and KAR Kennedy. 1989. <i>Reconstruction of Life from the Skeleton</i> . Wiley-Liss.	P
Katzenberg, MA and SR Saunders. 2000. <i>Biological Anthropology of the Human Skeleton</i> . Wiley.	P
Larsen, CS. 1997. <i>Bioarchaeology: Interpreting Behavior from the Human Skeleton</i> . Cambridge University Press.	P
Mays, S. 1998. <i>The Archaeology of Human Bones</i> . Routledge.	P
Parker Pearson, M. 1999. <i>The Archaeology of Death and Burial</i> . Texas A&M University Press.	P
Reichs, K, ed. 1986. <i>Forensic Osteology: Advances in the Identification of Human Remains</i> . Thomas.	P
Ubelaker, DH. 1989. <i>Human Skeletal Remains: Excavation, Analysis, Interpretation</i> . Taraxacum.	P
White, TD. 2000. <i>Human Osteology, 2nd Edition</i> . Academic Press.	P
White, TD. 2005. <i>The Human Bone Manual</i> . Academic Press.	P