

ANTHROPOLOGY 186
LAB COURSE IN PALEOETHNOBOTANY
M/W 2:00-3:15
HSSB 1021

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Office Hours: Mon/Wed 11-12

I. Course description

This course is designed to provide a relatively comprehensive understanding of paleoethnobotany, in addition to hands-on experience working with plant remains. We will focus primarily on macro-remains, although we will minimally discuss pollen and phytolith data as well. We consider the history of the discipline, field and lab methodology, the uses of macrobotanical data to reconstruct environment and subsistence, spatial versus temporal analysis, quantitative methods, and taxonomy. Readings cover the above topics, in addition to several case studies. Class will be divided between seminar and lab time. Students will be involved in hands-on microscope work, and will collectively conduct an analysis of a macrobotanical assemblage, culminating in a class project.

II. Course Requirements

Students will be evaluated by attendance and participation in seminar and lab; brief annotations of readings assignments due weekly; a small project involving the collection of modern comparative specimens; and a final project that is the outcome of the botanical analysis conducted by the class in the lab sessions.

Grading

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|------------------------------------|-----|
| • Attendance | 20% |
| • Reading Annotations | 20% |
| • Wild plant project (WPP) handout | 20% |
| • WPP presentation | 10% |
| • Final Report | 30% |

Readings Annotations

Readings are required and students should be prepared to discuss them in seminar. Students are required to annotate each reading, providing a 100-200 word summary of pertinent information. These are due in class on the day of the assigned reading. Annotations should be single spaced and handed in at the end of class. See course schedule for reading assignments. [20% of grade]

Attendance

It is expected that students will come to class regularly and participate in class discussion and lab work. Attendance will be taken, and students that attend regularly and participate will benefit when final grades are calculated. [20% of grade]

Wild Plant Project (Handout & Presentation)

For this project, each student will be assigned a plant native to North America. Students will provide information on taxonomy, life cycle, seasonality, etc. Additional information on this assignment is forthcoming. I will assign you a plant species during the 3rd week of classes. Each student will prepare a well-written, organized, and well referenced **handout** for each classmate about their plant. Informal

presentations will be held on Monday of Week 10 (March 10), at which time the handout will be turned in for credit.

Presentation Guidelines

Time allotted for your presentation: 8-10 minutes

10% of your grade, based on the following criteria:

- You must have a powerpoint presentation (see presentation tips below regarding powerpoints)
- You must demonstrate your knowledge of your topic (see topic assignment):
- Distribution of points:
 - If you cover the information and have a powerpoint presentation, you get the full 10%
 - If you present your information without a powerpoint, you only get 5% of your presentation grade
 - I am not grading you on your composure, etc. – I realize some of you will be more nervous than others, and that is fine. I am grading you on fulfilling the powerpoint requirement and presenting accurate content.
 - Bring a copy of your presentation on a thumb drive (or upload to dropbox for easy download)

Presentation Tips

- limit the amount of text on your slides – no more than 20 words per slide
- you should not be reading from your slides – instead you should face the audience and refer to your slides when necessary
- consider writing your notes on paper or note cards to assist you. If you are using notes, then you will not be tempted to put too much text on your slides, nor will you end up talking to the screen instead of the audience
- practice in advance to ensure that your presentation falls within the 8-10 minute time limit
- there will be time for questions – I will ask questions, and your classmates may ask questions as well.

[Project handout 20% of grade]

[Project presentation 10% of grade]

Final Project

The final project will comprise the remaining 30% of the final grade. At the end of **Week 6**, Dr. VanDerwarker will provide the class with a published dataset from an archaeological site in the form an excel file. Each student will then conduct a quantitative analysis and write up a report including sections on methods of identification and analysis, summary of basic results, a detailed quantitative data presentation, and final interpretations. The report should be 7-10 pages of double-spaced text, accompanied by supporting tables and figures (Graduate student reports should be between 15-20 pages). More specific guidelines will be forthcoming. **The final project report will be due on the Friday of Week 10 (March 14th – NO LATER than 4:30pm)**. This will give everyone 4 weeks for data analysis and write-up. You can consider the final project report as a take-home final exam. [30% of grade]

III. Readings

All of the readings are available as PDFs on Gaucho Space (<https://gauchospace.ucsb.edu/courses/>). See **Class Schedule** below for the reading schedule.

IV. Class Schedule

Each week will be divided into discussion/seminar format and lab format. Mondays are reserved for discussions, and Wednesdays for labs.

WEEK 1: Getting Started

- Monday, Jan 6th, initial class meeting
 - Outline of Course Objectives & Expectations
- Wednesday, Jan 8th, Lab Orientation

WEEK 2: An Overview of Paleoethnobotany & History of Research

- Monday, Jan 13th, **Lecture**
 - Readings:
 - Ford, Richard, 1979, Paleoethnobotany in American Archaeology. In *Advances in Archaeological Method and Theory 2*, ed. By M. Schiffer, pp. 285-336.
 - Watson, Patty Jo, 1997, The Shaping of Modern Paleoethnobotany. In *People, Plants, and Landscapes: Studies in Paleoethnobotany*, ed. by K. Gremillion, pp. 13-22.
 - Hastorf, Christine, 1999, Recent Research in Paleoethnobotany. *Journal of Archaeological Research* 7(1):55-103.
 - Pearsall, Deborah, 2000, The Paleoethnobotanical Approach. In *Paleoethnobotany: A Handbook of Procedures*, by D. Pearsall, pp. 1-15.
- Wednesday, Jan 15th, **Matt Biwer, Guest Lecture**
 - Readings (**Preservation/Taphonomy of Plant Assemblages**):
 - Wright, Patti, 2014, Formation Processes of the macrobotanical Record. In *Method and Theory in Paleoethnobotany*, edited by J. M. Marston, J. D. Guedes, and C. Warinner. University of Colorado Press, Boulder (in press).
 - Henry, Amanda, 2014, Formation and Taphonomic Processes Affecting Starch Granules. In *Method and Theory in Paleoethnobotany*, edited by J. M. Marston, J. D. Guedes, and C. Warinner. University of Colorado Press, Boulder (in press).
 - Pearsall, Deborah, 2014, Formation Processes of Pollen and Phytoliths. In *Method and Theory in Paleoethnobotany*, edited by J. M. Marston, J. D. Guedes, and C. Warinner. University of Colorado Press, Boulder (in press).

WEEK 3:

- Monday, Jan 20th, **HOLIDAY – NO CLASS**
- Wednesday, Jan 23rd, Begin sorting samples
 - Professor hands out Wild Plant Project Guidelines and assigns plant species

WEEK 4: Sampling and Recovery

- Monday, Jan 27th, Flotation Demonstration (**bring a pair of flip-flops and a warm sweater!**)
 - Readings:
 - Lennstrom, Heidi A., and Christine Hastorf, 1995, Interpretation of Context: Sampling and Analysis in Paleoethnobotany. *American Antiquity* 60:701-721.
 - Pearsall, Deborah, 2000, Techniques for Recovering Macroremains. In *Paleoethnobotany: A Handbook of Procedures*, by D. Pearsall, pp. 15-102.
 - d'Alpoim Guedes, Jade and R. Spengler, 2014, Sampling Strategies in Paleoethnobotanical Analysis. In *Method and Theory in Paleoethnobotany*, edited by J. M. Marston, J. D. Guedes, and C. Warinner. University of Colorado Press, Boulder (in press).
 - White, Chantel and China Shelton, 2014, Recovering macrobotanical Remains: Current Methods and Techniques: Data Exploration and Hypothesis Testing. In

Method and Theory in Paleoethnobotany, edited by J. M. Marston, J. D. Guedes, and C. Warinner. University of Colorado Press, Boulder (in press).

- Wednesday, Jan 29th, Lab, Continue Sorting Samples

WEEK 5: Quantitative/Analytical Methods

- Monday, Feb 3rd, Lecture
 - Readings:
 - Fritz, Gayle and Mark Nesbitt, 2014, Laboratory Analysis and Identification of Plant macroremains. In *Method and Theory in Paleoethnobotany*, edited by J. M. Marston, J. D. Guedes, and C. Warinner. University of Colorado Press, Boulder (in press).
 - Marston, John M., 2014, Ratios and Simple Statistics in Paleoethnobotanical Analysis. In *Method and Theory in Paleoethnobotany*, edited by J. M. Marston, J. D. Guedes, and C. Warinner. University of Colorado Press, Boulder (in press).
 - Smith, Alexia, 2014, The Use of Multivariate Statistics with Archaeobotany. In *Method and Theory in Paleoethnobotany*, edited by J. M. Marston, J. D. Guedes, and C. Warinner. University of Colorado Press, Boulder (in press).
 - VanDerwarker, Amber, J. Alvarado, and P. Webb, 2014, Analysis and Interpretation of Intrasite Variability in Paleoethnobotanical Remains: A Consideration and Application of Methods at the Ravensford Site, North Carolina. In *Method and Theory in Paleoethnobotany*, edited by J. M. Marston, J. D. Guedes, and C. Warinner. University of Colorado Press, Boulder (in press).
- Wednesday, Feb 5th, Lab, Continue Sorting Samples

WEEK 6: Basic subsistence reconstruction

- Monday, Feb 10th, Heather Thakar, Guest Lecture
 - Readings:
 - Fritz, Gayle, 1993, Value of Archaeological Plant Remains for Paleodietary Reconstruction. In *Paleonutrition: The Diet and Health of Prehistoric Americans*, ed. by K. Sobolik. CAI Occasional Paper No. 22, pp. 21-33.
 - Pearsall, Deborah, 2008, Reconstructing Subsistence in the lowland tropics: A case study from the Jama River Valley, Manabi, Ecuador. In *Case Studies in Environmental Archaeology*, 2nd edition, ed., by E. Reitz, C. Margaret Scarry, and S. Scudder, pp. 255-276.
 - Scarry, C. Margaret and Elizabeth Reitz, 2005, Changes in Foodways at the Parkin site, Arkansas. *Southeastern Archaeology* 24(2):107-120.
 - VanDerwarker, Amber M., Gregory D. Wilson, and Dana N. Bardolph, 2013, Maize Adoption and Intensification in the Central Illinois River Valley: An Analysis of Archaeobotanical Data from the Late Woodland through Early Mississippian Periods (AD 400-1200). *Southeastern Archaeology* 32(2): 147-168.
- Wednesday, Feb 12th, Lab, Continue Sorting Samples
 - Professor hands out Final Project Assignment, along with database

WEEK 7: Microbotanical Research: Pollen, Starch Grains, and Phytoliths

- Monday, Feb 17th – Holiday NO CLASS
- Wednesday, Feb 19th, Kristin Hoppa, Guest Lecture, Microbotanical Analysis
 - Readings:
 - Pearsall, Deborah M., and Christine Hastorf, 2011, Reconstructing Past Life-Ways with Plants II: Human–Environment and Human–Human Interactions. In

Ethnobiology, edited by E. N. Anderson, D. Pearsall, E. Hunn, N. Turner, pages 173–187. Wiley Press Online.

- Mickleburgh, Hayley L., and Jaime R. Pagán-Jiménez, 2012, New Insights into the Consumption of Maize and other Food Plants in the Pre-Columbian Caribbean from Starch Grains Trapped in Human Dental Calculus. *Journal of Archaeological Science* 39: 2468-2478.
- Horrocks, Mark and Marshall I. Weisler. 2006. “Analysis of Plant Microfossils in Archaeological Deposits from Two Remote Archipelagos: The Marshall Islands, Eastern Micronesia, and the Pitcairn Group, Southeast Polynesia.” *Pacific Science* 60:261-280.

WEEK 8: Domestication & Agriculture

- Monday, Feb 24th, Lecture
 - Readings:
 - Gremillion, Kristen, 2004, Seed processing and the origins of food production in eastern North America. *American Antiquity* 69(2):215-233.
 - Scarry, C. Margaret, 1993a, Variability in Mississippian Crop Production Strategies. In *Foraging and Farming in the Eastern Woodlands*, ed. by C. M. Scarry, pp. 78-90.
 - Smalley, John, and Michael Blake, 2003, Sweet Beginnings: Stalk Sugar and the Domestication of Maize. *Current Anthropology* 44(5):675-703.
 - VanDerwarker, Amber, 2005, Field Cultivation and Tree Management in Tropical Agriculture: A View from Gulf Coastal Mexico. *World Archaeology* 37(2):274-288.
- Wednesday, Feb 26th, Lab, Continue Sorting Samples

WEEK 9: Social and Political Complexity

- Monday, March 3rd, Guest Lecture, Dana Bardolph
 - Readings:
 - Hastorf, Christine, 1991, Gender, Space and Food in Prehistory. In *Engendering Archaeology: Women and Prehistory*, ed. by J. Gero and M. Conkey, pp. 132-159.
 - Scarry, C. Margaret, 1993b, Agricultural Risk and the Development of the Moundville Chiefdom. In *Foraging and Farming in the Eastern Woodlands*, ed. by C. M. Scarry, pp. 157-181.
 - VanDerwarker, Amber, C. Margaret Scarry, and Jane M. Eastman, 2007, Menus for Families and Feasts: Household and Community Consumption of Plants at Upper Saratown, North Carolina. In *The Archaeology of Food and Identity*, ed. by K. Twiss, pp. 16-49. Center for Archaeological Investigations Occasional Paper No. 34, Southern Illinois University, Carbondale.
 - Morehart, Christopher and Shanti Morell-Hart, 2013, Beyond the Ecofact: Toward a Social Paleoethnobotany in Mesoamerica. *Journal of Archaeological Method and Theory* 1-29.
- Wednesday, March 5th, Lab, Continue Sorting Samples

WEEK 10: PRESENTATIONS

- Monday, March 10th
 - Wild Plant Project Presentations
- Wednesday, March 12th, Lab, Complete Samples, and Finalize Forms
- **FRIDAY March 14th → Research PAPER DUE by 4:30 pm**