

ANTHROPOLOGY 186  
LAB COURSE IN PALEOETHNOBOTANY  
M/W 11:00-12:15  
HSSB 2001A MON/HSSB 1021 WED

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Office Hours: Tuesdays 10:00-12:00

### 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**

- |                         |     |
|-------------------------|-----|
| • Seminar Participation | 15% |
| • Reading Annotations   | 20% |
| • Lab Attendance        | 15% |
| • Collection Project    | 20% |
| • Final Project         | 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 each Tuesday in class. Annotations should be single spaced and handed in at the end of class. See course schedule for reading assignments.

#### **Seminar Participation**

It is expected that students will come to class regularly and participated in class discussion during the seminar. While students will not be directly penalized for missing class, attendance will be taken, and students that attend regularly and participate will benefit when final grades are calculated.

#### **Lab Attendance**

In addition, you are expected to show up for the lab component of the class. If you do not regularly attend the lab component of the class, then you will not complete the identification of your samples, which are necessary in order to complete your final class project.

### **Collection Project**

For this project, each student will be given a list of three plants that are native to the region. Each student must locate and collect samples from each of their assigned plants. In addition to collecting the specimens, students will provide information on taxonomy, life cycle, seasonality, etc. Additional information on this assignment is available on Gaucho Space. I will assign your plant species for collection during the 3<sup>rd</sup> week of classes. **The Collection Project due date is Monday, February 27th (Week 8).**

### **Final Project**

The final project will comprise the remaining 30% of the final grade. Throughout the semester, students will learn and practice their plant identification skills on an assemblage from the C. W. Cooper site from the Central Illinois River Valley. The data that are collected will be recorded by the students and collated by Dr. VanDerwarker into a master database, and distributed to students at the end of Week 9. 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 Final Exam week (March 23<sup>rd</sup> – NO LATER than 3pm).** This will give everyone 2 weeks for data analysis and write-up. You can consider the final project report as a take-home final exam.

### III. Readings

All of the readings are available as PDFs on Gaucho Space (<https://gauchospace.ucsb.edu/>). You will need to log on and add yourself to the course ANTH 186 in order to access these PDFs. 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.

MONDAY SEMINARS will be held in HSSB 2001A

WEDNESDAY LAB will be held in HSSB 1021

#### **WEEK 1: Getting Started**

- Monday, Jan 9<sup>th</sup>, initial class meeting
  - ❖ Outline of Course Objectives
  - ❖ Setting up Seminar moderator schedule
- Wednesday, Jan 11<sup>th</sup>, Lab Orientation

#### **WEEK 2: An Overview of Paleoethnobotany & History of Research**

- Monday, Jan 16<sup>th</sup> – Holiday NO CLASS – Seminar will be held on Wed in HSSB 2001A
- Wednesday, Jan 18<sup>th</sup>, Seminar
  - Readings:

- Gremillion, Kristen, 1993a, Paleoethnobotany. In *The Development of Southeastern Archaeology*, ed. by J. Johnson, pp. 132-159.
- Ford, Richard, 1979, Paleoethnobotany in American Archaeology. In *Advances in Archaeological Method and Theory 2*, ed. By M. Schiffer, pp. 285-336.
- 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.
- Watson, Patty Jo, 1997, The Shaping of Modern Paleoethnobotany. In *People, Plants, and Landscapes: Studies in Paleoethnobotany*, ed. by K. Gremillion, pp. 13-22.

### WEEK 3: Preservation/Taphonomy of Plant Assemblages

- Monday, Jan 23<sup>rd</sup>, Seminar
  - Readings:
    - Miksicek, Charles, 1987, Formation Processes of the Archaeological Record. In *Advances in Archaeological Method and Theory 10*, ed. by M. Schiffer, pp. 211-248.
    - Miller, Naomi, and Tristine Smart, 1984, Intentional Burning of Dung as Fuel: A Mechanism for the Incorporation of Charred Seeds into the Archaeological Record. *Journal of Ethnobiology* 4(1):15-28.
    - Minnis, Paul, 1981, Seeds in Archaeological Sites: Sources and Some Interpretive Problems. *American Antiquity* 46:143-152.
    - Yarnell, Richard A., 1982, Problems and Interpretations of Archaeological Plant Remains of the Eastern Woodlands. *Southeastern Archaeology* 1:1-7.
- Wednesday, Jan 25th, Begin sorting samples

### WEEK 4: Sampling and Recovery

- Monday, Jan 30<sup>th</sup>, Seminar
  - Readings:
    - Baker, Barry and Brian Schaffer, 1998, Sugar Reflotation and Curation. *Journal of Field Archaeology* 25:369-370.
    - Jones, Martin, 1989, Sampling in Paleoethnobotany. In *Progress in Old World Paleoethnobotany*, ed. by W. van Zeist, K. Wasylikowa, and K. Behre, pp. 53-62.
    - 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.
    - Toll, Mollie, 1987, Flotation Sampling: problems and some solutions, with examples from the American Southwest. In *Current Paleoethnobotany*, ed. by C. Hastorf and V. Popper, pp. 36-52.
    - Wagner, Gail, 1988, Comparability among recovery techniques. In *Current Paleoethnobotany*, ed. by C. Hastorf and V. Popper, pp. 17-35.
- Wednesday, Feb 1<sup>st</sup>, Lab, Flotation Demonstration – the Flotetech and Bucket Methods (**meet in HSSB 1021**)

### WEEK 5: Quantitative/Analytical Methods

- Monday, Feb 6<sup>th</sup>, Seminar
  - Readings:

- Ford, Richard, 1988, Commentary: little things mean a lot—quantification and qualification in Paleoethnobotany. In *Current Paleoethnobotany*, ed. by C. Hastorf and V. Popper, pp. 215-222.
- Hubbard, R. N. L. B., 1975, Assessing the botanical component of human paleoeconomies. *Bulletin of the Institute of Archaeology* 12:197–205.
- Hubbard, R. N. L. B., 1976, On the strength of the evidence for prehistoric crop processing activities. *Journal of Archaeological Science* 3:257–265.
- Kadane, Joseph, 1988, Possible Statistical Contributions to Paleoethnobotany. In *Current Paleoethnobotany*, ed. by C. Hastorf and V. Popper, pp. 206-214.
- Miller, Naomi, 1988, Ratios in Paleoethnobotanical Analysis. In *Current Paleoethnobotany*, ed. by C. Hastorf and V. Popper, pp. 72-85.
- Pearsall, Deborah, 1988, Interpreting the Meaning of Macroremain Abundance: The Impact of Source and Context. In *Current Paleoethnobotany*, ed. by C. Hastorf and V. Popper, pp. 97-118
- Popper, Virginia, 1988, Selecting Quantitative Measurements in Paleoethnobotany. In *Current Paleoethnobotany*, ed. by C. Hastorf and V. Popper, pp. 53-71.

- Wednesday, Feb 8<sup>th</sup>, Lab, Continue Sorting Samples

#### WEEK 6: Basic subsistence reconstruction

- Monday, Feb 13<sup>th</sup>, Seminar
  - 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, 1983, Evaluating the Stability of Subsistence Strategies by Use of Paleoethnobotanical data. *Journal of Ethnobiology* 3(2):121-137.
    - 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*, 2<sup>nd</sup> 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.
- Wednesday, Feb 15<sup>th</sup>, Lab, Continue Sorting Samples

#### WEEK 7: Environmental Reconstruction and Paleoecology

- Monday, Feb 20<sup>th</sup> – Holiday NO CLASS – Seminar will be held on Wed in HSSB 2001A
- Wednesday, Feb 22<sup>nd</sup>, Seminar
  - Readings:
    - Gardner, Paul, 1997, The Ecological Structure and Behavioral Implications of Mast Exploitation Strategies. In *People, Plants, and Landscapes: Studies in Paleoethnobotany*, ed. by K. Gremillion, pp. 161-178.
    - Lopinot, Neal, and William Woods, 1993, Wood Overexploitation and the Collapse of Cahokia. In *Foraging and Farming in the Eastern Woodlands*, ed. by C. M. Scarry, pp. 206-231.
    - Newsom, Lee, 1993, Plants and People: Cultural, Biological, and Ecological Responses to Wood Exploitation. In *Foraging and Farming in the Eastern Woodlands*, ed. by C. M. Scarry, pp. 115-137.

- Smart, Tristine and Ellen Hoffman, 1988, Environmental Interpretation of archaeological charcoal. In *Current Paleoethnobotany*, ed. by C. Hastorf and V. Popper, pp. 167-205.

### WEEK 8: Domestication & Agriculture in North America

- Monday, Feb 27<sup>th</sup>, Seminar
  - Readings:
    - Cowan, C. Wesley, 1997, Evolutionary Changes Associated with the Domestication of *Cucurbita pepo*: Evidence from Eastern Kentucky. In *People, Plants, and Landscapes: Studies in Paleoethnobotany*, ed. by K. Gremillion, pp. 63-85.
    - Gremillion, Kristen, 1993b, The Evolution of Seed Morphology in Domesticated *Chenopodium*: An Archaeological Case Study. *Journal of Ethnobiology* 13(2):149-169.
    - Gremillion, Kristen, 2004, Seed processing and the origins of food production in eastern North America. *American Antiquity* 69(2):215-233.
    - Hastorf, Christine, 1988, The Use of Paleoethnobotanical data in prehistoric studies of crop production, processing, and consumption. In *Current Paleoethnobotany*, ed. by C. Hastorf and V. Popper, pp. 119-144.
    - 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.
- Wednesday, Feb 29<sup>th</sup>, Lab, Continue Sorting Samples

### WEEK 9: Domestication & Agriculture in Latin America

- Monday, March 5<sup>th</sup>, Seminar
  - Readings:
    - Blake, Michael, Brian S. Chisholm, John E. Clark, and Karen Mudar, 1989, Non-Agricultural Staples and Agricultural Supplements: Early Formative Subsistence in the Soconusco Region, Mexico. In *Transitions to Agriculture in Prehistory*, ed. by A.B. Gebauer and T.D. Price, pp. 133-151. Prehistory Press, Madison, WI.
    - Fritz, Gayle, 1994, Are the first American farmers getting younger? *Current Anthropology* 35(3):305-309.
    - Goman, Michelle, and Roger Byrne, 1998, A 5000-year record of agriculture and tropical forest clearance in the Tuxtlas, Veracruz, Mexico. *The Holocene* 8(1):83-89.
    - Hastorf, Christine, 1990, The Effect of the Inka State on Sausa Agricultural Production and Crop Consumption. *American Antiquity* 55(2):262-290.
    - VanDerwarker, Amber, 2005, Field Cultivation and Tree Management in Tropical Agriculture: A View from Gulf Coastal Mexico. *World Archaeology* 37(2):274-288.
- Wednesday, March 7<sup>th</sup>, Lab, Continue Sorting Samples

### WEEK 10: Social and Political Complexity

- Monday, March 12<sup>th</sup>, Seminar
  - Readings:
    - Fritz, Gayle, 1999, Gender and the early cultivation of gourds in eastern North America. *American Antiquity* 64(3):417-429.
    - 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, and Kandace Detwiler, 2002, Gendered Practice in Cherokee Foodways: A Spatial Analysis of Plant Remains from the Coweeta Creek site. *Southeastern Archaeology* 21(1):21-28.
  - VanDerwarker, Amber, C. Margaret Scarry, and Jane M. Eastman, 2007, Menus for Families and Feasts: Household and Community Consumption of Plants at Upper Saratow, 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.
- Wednesday, March 14<sup>th</sup>, Lab, Complete Samples, and Finalize Forms