# ANTH 5783
# Ceramics in Archaeology
### Fall 2009
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or by appointment

Ceramics are one of the keystone artifacts in our understanding of past human societies. Around the world, there are spans of millennia in which ceramics are the most important single artifact in informing our current understanding of past cultures because of their durability, ubiquity, utility, and past mutability. Ceramics have been used to understand past social boundaries, temporal trends, foodways, trade and exchange, social networks, kinship systems, disease, demography, and hundreds of other things. This course will help introduce students to the study of ceramics and their application to anthropological problems through reading, discussion, lab work, and research.

This course is divided into three sections. In the first section we will examine pottery technology: the physical and chemical characteristics of clay and temper and the art of creating useful ceramic vessels from clay. The middle of the course will be used to examine methods that archaeologists use to study ceramics: typology, classification, seriation, and chemical and physical methods for testing ceramics. In the final section of this course we will work to understand how archaeologists move from ceramic data to conclusions about the human societies that created them.

**Readings**

Because of the size of the ceramic literature, this course has a fairly high reading load. Students are expected to have read all of the required readings in time for the week's class and be able to discuss them in detail with the class. My advice is that at every class you should be prepared to summarize every article, list several strengths, list several substantial critiques, and have thought about how each article relates to the other articles in the assignment and to the greater body of archaeological literature.

**Exercises**

During the semester there will be three lab exercises and one topic presentation. For the laboratory based exercises, you will be expected to make it to the Southeastern Laboratory during business hours to examine the artifacts and conduct the analysis. You will be expected to turn in your assignment on the class it is due.

**Term Paper and Presentation**

The primary assignment for the semester is a 20 page term paper on some aspect of ceramic analysis. Students who are already working on a collection of their own or who have access to a collection with which they are familiar are encouraged to analyze some aspect of that collection. Other students are strongly encouraged to select a term paper project that involves hands-on analysis of some collection. You can work with me or another instructor to help select the collection for study. Students are also permitted to do a literature survey on a particular topic.

No matter what topic is selected, all students are required to frame the paper as problem-oriented research and the papers should be written in a style suitable for inclusion in a professional book or journal. Papers will be graded on the quality and sophistication of the research. The paper must present new and original research, whether that is laboratory-based or an original take on an existing literature. Papers that primarily recapitulate the arguments and the literature we cover in class this semester will not receive the top grades.

The paper is due (**December 14**) one week after our final class meeting but can be turned in any time before that. During the final class (**December 7**), all students will be asked to make a 10-15 minute presentation on their research.

Students are required to submit a paper proposal on **October 5** that outlines the research project. The proposals should minimally include a statement of the research problem, the methods and the collection being used to address the research problem, and a listing of some of the books and articles that will be used.

**Grades**

Your grades will be determined by the following percentages:

- Final Paper and Presentation - 50%
- Participation – 25%
- Exercises and Presentation – 25%

**Academic Misconduct**

No plagiarism or cheating will be tolerated in this course. Any instances will be pursued according to the OU rules of Academic Misconduct and the student will receive severe penalties, including a zero on the assignment in question, as well as further sanctions from the provost such as censure, suspension, or expulsion. Plagiarism includes the presentation of the work or ideas of others as your own. You are expected to know and understand university policy regarding academic misconduct (see http://www.ou.edu/provost/integrity).

**Disabilities**

The University of Oklahoma is committed to providing reasonable accommodation for all students with disabilities. Any student in this course who has a disability that may prevent him or her from fully demonstrating his or her abilities should contact me personally as soon as possible

so we can discuss accommodations necessary to ensure full participation and facilitate your educational opportunities. Students with disabilities must be registered with the Office of Disability Services prior to receiving accommodations in this course. The Office of Disability Services is located in Goddard Health Center, Suite 166, phone 405/325-3852 or TDD only 405/325-4173. Students whose first language is not English should discuss any concerns or needs with me as soon as possible.

**Responsibilities**

All students are expected to arrive to class on-time and treat me and their fellow students with the appropriate respect. Minimally this means not disrupting the class. It also means treating the opinions of your fellow students in a respectful manner.

**The Literature**

There are three books used extensively in this class.

Rice, Prudence M.

1987 *Pottery Analysis: A Sourcebook*. University of Chicago Press, Chicago.

This is the most comprehensive of the books currently available. It deals with almost every topic related to the archaeological analysis of pottery. It's discussion on the materials and manufacture of pottery is unrivaled although its discussion of use and interpretation is increasingly dated. It is an excellent reference book. This book was reprinted in 2006.

She followed up the book with a pair of articles in 1996 that might be considered an appendix. These deal with most of the ceramic literature between the release of her book and 1996.

Rice, Prudence

1996a Recent Ceramic Analysis: 1. Function, Style, and Origins. *Journal of Archaeological Research* 4:133-163.

1996b Recent Ceramic Analysis: 2. Composition, Production, and Theory. *Journal of Archaeological Research* 4:165-202.

Rye, Owen S.

1981 *Pottery technology : principles and reconstruction*. Manuals on archeology. 4. Taraxacum, Washington, D.C.

This book is an excellent introduction to pottery technology. It is both readable and comprehensive. Unfortunately it is also out of print and can be hard to find. I will provide PDF copies of the assigned chapters.

Sinopoli, Carla M.

1991 *Approaches to Archaeological Ceramics*. Plenum Press, New York.

This book assumes the reader has access to the Rice and Rye volumes and focuses on the anthropological and archaeological questions that can be addressed with ceramics.

There are other works that are useful to the study of archaeological ceramics that I will mention briefly:

Arnold, Dean E.

1985 *Ceramic theory and cultural process*. New studies in archaeology. Cambridge University Press, Cambridge ; New York.

Amazing ethnoarchaeological approach to pottery.

He has also published to other excellent ethnographic studies of pottery:

Arnold, Dean E.
1993 *Ecology and ceramic production in an Andean community*. New studies in archaeology. Cambridge University Press, Cambridge [England]; New York, NY, USA.

2008 *Social change & the evolution of ceramic production & distribution in a Maya community*. Mesoamerican worlds. University Press of Colorado ; Gazelle [distributor], Niwot, Colo.; Lancaster.

Barnett, William and John W. Hoopes
1995 *The emergence of pottery : technology and innovation in ancient societies*. Smithsonian series in archaeological inquiry. Smithsonian Institution Press, Washington.

Collection of papers on the origin of pottery around the world.

Orton, Clive, Paul Tyers and A. G. Vince
1993 *Pottery in archaeology*. Cambridge manuals in archaeology. Cambridge University Press, Cambridge ; New York, NY, USA.

Very useful summary of most aspects of ceramic analysis.

Shepard, Anna Osler
1956 *Ceramics for the archaeologist*. Carnegie Institution of Washington, Washington.

The foundational book. It is still relevant on many topics. It is also available free online at http://www.hq.ciw.edu/downloadable_books.html

Velde, Bruce and Isabelle C. Druc
1998 *Archaeological Ceramic Materials*. Springer-Verlag, Berlin.

Very good book on pottery technology.

Here are some important edited volumes. We will be reading papers out of most of these over the course of this semester.

Bishop, Ronald L. and Frederick W. Lange
1991 *The Ceramic legacy of Anna O. Shepard*. 1st ed. University Press of Colorado, Niwot, Colo.

Franklin, Alan D. and Jacqueline S. Olin
1982 *Archaeological ceramics*. Smithsonian Institution Press, Washington, D.C.

Leeuw, Sander Ernst van der and Alison C. Pritchard
1984 *The Many dimensions of pottery : ceramics in archaeology and anthropology*. Cingula ; 7. Universiteit van Amsterdam, Amsterdam.

Longacre, William A. and School of American Research (Santa Fe N.M.)
1991 *Ceramic ethnoarchaeology*. University of Arizona Press, Tucson.

Rice, Prudence M. (editor)
1984 *Pots and potters : current approaches in ceramic archaeology*. Institute of Archaeology, University of California, Los Angeles, Los Angeles.

Skibo, James M and Gary M. Feinman
1999 *Pottery and people a dynamic interaction*. Foundations of archaeological inquiry. University of Utah Press, Salt Lake City.

# Course Schedule

**8/24 – Course Introduction**
*Lab: What can you tell from a sherd?*

**8/31 – Pottery Technology I – Clays**
*Required Readings:*
Rice Ch.1-3
Rye Ch. 3

Arnold, Dean E.
1985 Ceramic theory and cultural process. New studies in archaeology. Cambridge University Press, Cambridge ; New York. [Read Chapter 2]

Gosselain, Olivier P.
1994 Skimming Through Potter's Agendas: An Ethnoarchaeological Study of Clay Selection Strategies in Cameroon. In *Society, Culture, and Technology in Africa*, edited by S. Terry Childs, pp. 99-107. *MASCA Research Papers in Science and Archaeology*, Supplement to Volume 11. University of Pennsylvania Museum of Archaeology and Anthropology, Philadelphia.

Stark, Miriam T., Ronald L. Bishop., and Elizabeth Miksa
2000 Ceramic Technology and Social Boundaries: Cultural Practices in Kalinga Clay Selection and Use. *Journal of Archaeological Method and Theory* 7:295-331

**9/7 – No Class – Labor Day**

**9/14 - Pottery Technology II – Temper and Firing**
*Lab: Identifying temper, firing properties*

*Required Readings:*
Rice Ch. 4
Rye Ch. 4 and 6 (not Ch. 5)

Bronitsky, Gordon, and R. Hamer
1986 Experiments in Ceramic Technology: The Effects of Various Tempering Materials on Impact and Thermal-Shock Resistance. *American Antiquity* 51:89-101.

Gosselain, Olivier P.
1992 Bonfire of the Enquiries. Pottery Firing Temperatures in Archaeology: What For? *Journal of Archaeological Science* 19(3):243-259.

Livingstone Smith, A.
2001 Bonfire II: the return of pottery firing temperatures. *Journal of Archaeological Science* 28:991-1003.

Rye, O. S.
1976 Keeping Your Temper Under Control. *Archaeology and Physical Anthropology in Oceania* 11(2):106-137.

*Optional:*
Sinopoli Ch. 2

Bronitsky, Gordon
1989 Ceramics and Temper: A Response to Feathers. *American Antiquity* 54(3): 589-593.

Feathers, James K.
1989 Effects of temper on strength of ceramics: response to Bronitsky and Hamer. *American Antiquity* 54(3):579-588.

**9/21 - Pottery Technology III – Surface Treatments**
*Due Next Week: Exercise I (Identifying Temper and Surface Treatments)*
*Lab: Surface Treatments, manufacturing*

*Required Readings:*
Rice Ch. 5
Rye Ch. 5

Longacre, William A., Jingfeng Xia, and Tao Yang
2000 I Want to Buy a Black Pot. *Journal of Archaeological Method and Theory* 7(4):273-293.

Pierce, Christopher
2005 Reverse Engineering the Ceramic Cooking Pot: Cost and Performance Properties of Plain and Textured Vessels. *Journal of Archaeological Method and Theory* 12:117-157.

*Optional:*
Schiffer, Michael B.
1990 The influence of surface treatment on heating effectiveness of ceramic vessels. *Journal of Archaeological Science*:373-81.

**9/28 - Form and Function I**
*Due This Week: Exercise I*
*Due Next Week: Paper Proposals*
*Lab: Identifying Vessel Forms*

*Required Readings:*
Rice Ch. 7

Braun, David P.
1983 Pots as Tools. In *Archaeological Hammers and Theories*, edited by A. S. Keene and J. A. Moore, pp. 107-134. Academic Press, New York

Hagstrum, Melissa, and John A. Hildebrand
1990 The Two-Curvature Method for Reconstructing Ceramic Morphology. *American Antiquity* 55(2):388-403.

Hally, David J.
1986 The Identification of Vessel Function: A Case Study from Northwest Georgia. *American Antiquity* 51:267-295.

*Optional:*

DeBoer, Warren R.
2001 The Big Drink: Feast and Forum in the Upper Amazon. In *Feasts: Archaeological and Ethnographic Perspectives on Food, Politics, and Power*, edited by M. Dietler and B. Hayden, pp. 215-239. Smithsonian Institution Press, Washington D.C.

Henrickson, Elizabeth R., and M. McDonald
1983 Ceramic Form and Function: An Ethnographic Search and an Archeological Application. *American Anthropologist* 85(3):630-643.

**10/5 - Form and Function II – Use Wear and Residues**
*Due This Week: Paper Proposals*
*Due Next Week: Exercise II (Identifying Vessel Form)*
*Lab: Drawing Vessel Profiles*

*Required Readings:*

Arthur, John W.
2002 Pottery use-alternation as an indicator of socioeconomic status: an ethnoarchaeological study of the Gamo of Ethiopia. *Journal of Archaeological Method and Theory* 9:331-55.

Hally, David J.
1983 Use Alteration of Pottery Surfaces: An Important Source of Evidence for the Identification of Vessel Function. *North American Archaeologist* 4:3-26.

Heron, Carl, and Richard P. Evershed
1993 The Analysis of Organic Residues and the Study of Pottery Function. In *Archaeological Method and Theory*, vol. 5, M. Schiffer, ed., Tucson: University of Arizona Press.

Skibo, James M.
1992 *Pottery Function: A Use-Alteration Perspective*. Plenum, New York. Read Ch. 6 (pp. 103-144) and Ch. 7 (pp. 145-174)

Skim: Deal, Michael, and Melissa B. Hagstrum
1994 Ceramic Reuse Behavior among the Maya and Wanka: Implications for Archaeology. In *Expanding Archaeology*, edited by J. M. Skibo, W. H. Walker, and A. E. Neilsen, pp. 111-125. University of Utah Press, Salt Lake City.

*Optional:*

Duma, G.
1972 Phosphate Content of Ancient Pots as Indication of Use. *Current Anthropology* 13(1):127-130.

Cackette, M., J.M. D'Auria, Bryan E. Snow
1987 Examining Earthenware Vessel Function by Elemental Phosphorous Content. *Current Anthropology* 28(1):121-127.

Reber, Eleanora A., and Richard P. Evershed
2004a How Did Mississippian Prepare Maize? The Application of Compound-Specific Carbomn Isotope Analysis to Absorbed Pottery Residues From Several Mississippi Valley Sites. *Archaeometry* 46:19-33.

Reber, Eleanora A., and Richard P. Evershed
2004 Identification of Maize in Absorbed organic Residues: A Cautionary Tale. *Journal of Archaeological Science* 31: 399-410.

**10/12 - Ethnoarchaeological Studies/Folk Classification**
*Due This Week: Exercise II (Identifying Vessel Form)*

*Required Reading:*
Gosselain, Olivier P.
1999 In pots we trust: the processing of clay and symbols in sub-Saharan Africa. *Journal of material culture* 4:205-30.

DeBoer, Warren R., and Donald W. Lathrap
1979 The Making and Breaking of Shipibo-Conibo Ceramics. In *Ethnoarchaeology: Implications of Ethnography for Archaeology*, Carol Kramer, ed., pp. 102-138. New York: Columbia University Press.

Skim: Kepton, William
1981 *The Folk Classification of Ceramics: A Study of Cognitive Prototypes*. Academic Press, New York. pp. 24-103.

Ortega, Felipe V.
2005 Ceramics for the Archaeologist: An Alternate perspective. In *Engaged Anthropology: Research Essays on North American Archaeology, Ethnobotany, and Museology*, edited by M. Hegmon and B. S. Eiselt, pp. 1-5. Museum of Anthropology, Anthropological Papers, No. 94, Ann Arbor.

Stark, Miriam
2003 Current Issues in Ceramic Ethnoarchaeology. *Journal of Archaeological Research* 11(3):193-242

*Optional:*
Arnold, Dean E.
1971 The Ethnomineralogy of Ticul, Yucatan Potters: Emics and Etics. *American Antiquity* 36(1):20-40.

Arnold, Philip J.
2000 Working without a net: recent trends in ceramic ethnoarchaeology. *Journal of Archaeological Research* 8:105-33.

Kramer, C.
1985 Ceramic ethnoarchaeology. *Annual review of anthropology* 14: 77-102.

Graves, M.
1991 Pottery production and distribution among the Kalinga: a study of household and regional organization and differentiation. In W. Longacre, ed., *Ceramic ethnoarchaeology*. pp. 112-143. Tucson: University of Arizona Press.

Houston, Stephen D., Karl A. Taube and David Stuart
1989 Folk classification of Classic Maya pottery. *American Anthropologist* 91(3):720-726.

**10/19 – A Practical Approach to Pottery Analysis and Classification/Typology**
*Lab: Recording attributes and using a type-variety system.*

*Required Reading:*
Classification
Rice pp. 274-288

Adams, R. E. W.
1996 A perspective on thirty-five years of type-variety analysis. *Ceramica de cultura maya*:5-7.

Gifford, James C.
1960 The Type-variety Method of Ceramic Classification as an Indicator of Cultural Phenomena. American Antiquity 25(3):341-347.

Smith, Michael E.
1979 A Further Criticism of the Type-Variety System: The Data can't be Used. *American Antiquity* 44(4): 822-826.

How-tos for Ceramic Analysis
Sinopoli Ch. 3

Banning, E. B.
2000 *The Archaeologist's Laboratory: The Analysis of Archaeological Data*. Springer. Pp. 161-186.

Chilton, Elizabeth S.
1999 One size fits all: typology and alternatives for ceramic research. *Material Meanings: Critical Approaches to the Interpretation of Material Culture*.

*Optional:*
Dunnel, R.
1986 Methodological issues in Americanist artifact classification. *Advances in archaeological method and theory* 9: 149-207.

Hammond, N.
1972 A minor criticism of the type-variety system of ceramic analysis. *American Antiquity* 37:450-2.

Hardin, M.
1979 The cognitive basis of productivity in a decorative art style: implications of an ethnographic study for archaeologists' taxonomies. In C. Kramer, ed. *Ethnoarchaeology: implications of ethnography for archaeology.* New York: Columbia University Press, pp. 75-101

Rouse, I
1960 The classification of artifacts in archaeology. *American antiquity* 25(3): 313-323.

**10/26 – Ceramic Methodologies: Chronology, Seriation, Count vs. Weight, and Estimating People from Pots**
*Due Next Week: Exercise III (Seriation and Typology)*
*Lab: Seriation*

*Required:*
Orton, Clive, Paul Tyers and A. G. Vince
1993 *Pottery in archaeology*. Cambridge manuals in archaeology. Cambridge University Press, Cambridge; New York, NY, USA. Ch. 16

Chronology and Seriation
*Required:*
Duff, Andrew I.
1996 Ceramic micro-seriation: types or attributes? *American Antiquity* 61(1):89-101.

Orton, Clive, Paul Tyers and A. G. Vince
1993 *Pottery in archaeology*. Cambridge manuals in archaeology. Cambridge University Press, Cambridge; New York, NY, USA. Chapter 14 pp.

Skim: Adams, W.
1979 On the argument from ceramics to history: a challenge based on evidence from medieval Nubia. *Current anthropology* 20: 727-744.

*Optional:*
Deboer, W., K. Kintigh, and A. Rostoker.
1996 Ceramic seriation and site reoccupation in lowland South America. *Latin American antiquity* 7(3): 263-278.

Marquardt, W.
1978 Advances in archaeological seriation. *Advances in archaeological method and theory* 1: 257-314.

Steponaitis, Vincas P.
1983 *Ceramics, Chronology, and Community Patterns: an Archaeological Study at Moundville*. Academic Press, New York. Pp. 79-98.

Count vs. Weight
*Required Reading:*
Chase, Phil
1985, Whole Vessels and Sherds: An Experimental Investigation of Their Quantitative Relationship. *Journal of Field Archaeology* 12:213-218.

Estimating People From Pots
*Required:*
Sullivan, Alan P.
2008 Ethnoarchaeological and archaeological perspectives on ceramic vessels and annual accumulation rates of sherds. *American Antiquity* 73(1):121-135.

Tani, Masakazu
1994 Why Should More Pots Break in Larger Households? Mechanisms Underlying Population Estimates from Ceramics In W. Longacre and J. Skibo, eds., *Kalinga ethnoarchaeology*. pp. 127-168. Washington, D.C.: Smithsonian Institution Press.

*Optional:*
Arthur, John W.
2009 Understanding household population through ceramic assemblage formation: ceramic ethnoarchaeology among the Gamo of southwestern Ethiopia. *American Antiquity* 74:31-48.

David, Nicholas
1972 On the life span of pottery, type frequencies, and archaeological inference. *American Antiquity* 37(1):141-142.

DeBoer, Warren R.
1974 Ceramic longevity and archaeological interpretation: an example from the upper Ucayali, Peru. *American Antiquity* 39(2):335-343.

Mills, Barbara
1989 Integrating Functional Analyses of Vessels and Sherds through Models of Ceramic Assemblage Formation. *World Archaeology* 21(1):133-147.

Nelson, Ben A., C. G. Turner, II and L. Lofgren
1981 Ethnoarchaeology and paleodemography : a test of Turner and Lofgren's hypothesis. *Journal of anthropological research* 37:107-129.

Turner II, C. G. and L. Lofgren
1966 Household size of prehistoric western Pueblo Indians. *Southwestern Journal of Anthropology* 22:117-32.

**11/2 - Chemical and Physical Means of Pottery Investigation**
*Due this week: Exercise III (Seriation and Typology)*
*Lab: Microscopic petrography*

*No required readings this week. Instead all students will be assigned a technical topic which may include: Petrographic analyses, X-Ray Diffraction (also X-Ray Radiography), ICP-MS (Inductively Coupled-Mass Spectrometry), LA-ICP-MS (Laser Ablation-Inductively Coupled-Mass Spectrometry), XRF (X-Ray Fluorescence Spectrometry)/EPMA (Electron Microprobe)/PIXE, INAA (Neutron Activation Analysis), Materials Science approaches, Thermal analysis, SEM (Scanning Electron Microscope), TL (Thermoluminescence), Organic residue analysis, 3D Scanning. All students will briefly research the topic and bring to class a one page (plus references) summary of the technique as it applies to ceramics and students will make a presentation on their topic. The summaries and the presentations should answer the following questions:*

- *What is the technique and how does it work?*
- *How does this technique help archaeologists interested in ceramics?*
- *What kind of data does this technique gather?*
- *What parts of the ceramic sample (surface, temper, bulk sample, larger inclusions) does it examine?*
- *Does this technique damage the shred? Is the sample reusable? How much of the sherd is damaged?*

- *How widely available is this technique?*
- *What type of expertise is required?*
- *What is the cost?*
- *What is the sensitivity, precision, and accuracy of this technique? (if applicable)*
- *Provide references to works that can permit others to learn more about this technique.*

*Supplemental Reading (contain useful overviews of some of the techniques below)*
Barnard and Eerkens 2007
Rice Ch. 12 and 13
Tite 1999, 2008

Some reference readings to help get you started:
Petrographic Analysis: Shepard 1975; Stoltman 1989, 1991, 2000
X-Ray Diffraction/X-Radiography: Carr and Komorowski 1995, Isphording 1974, Braun 1982, Rye 1977
ICP-MS, LA_ICP-MS: Speakman and Neff 2005
XRF/PXRF/EPMA: Craig et al 2007, DeFrancesco et al 2008
INAA: Glascock 1992, Neff 1992, Neff and Glowacki 2001
Materials Science: Bronitsky 1986, Bronitsky and Hamer 1986, Rice 1987 Ch. 12, Steponaitis 1984
Thermal Analysis: Kaiser and Lucius 1988
SEM: Tite 1992, Tite et al. 1982
Thermoluminescence: Aitken 1985
Organic Residue Analysis: Barnard and Eerkens 2007, Gernaey et al. 2001, Grupe 2001, Evershed et al. 2001

Aitken, M. J.
1985 *Thermoluminescence dating*. Studies in archaeological science. Academic Press, London; Orlando.

Arnold, D., H. Neff, and R. Bishop
1991 Compositional analysis and sources of pottery: an ethnoarchaeological approach. *American anthropologist* 93: 70-90.

Barclay, Katherine
2001 Scientific Analysis of Archaeological Ceramics: A Handbook of Resources. Oxbow Books, Oxford.

Barnard, H. and Jelmer W. Eerkens
2007 *Theory and practice of archaeological residue analysis*. BAR international series, 1650. Archaeopress, Oxford.

Braun, David P.
1982 Radiographic Analysis of Temper in Ceramic Vessels: Goals and Initial Methods. *Journal of Field Archaeology* 9:183-192.

Bronitsky, G.
1986 The use of materials science techniques in the study of pottery construction and use. *Advances in archaeological method and theory* 9: 209-276.

Bronitsky, Gordon, and R. Hamer
1986 Experiments in Ceramic Technology: The Effects of Various Tempering Materials on Impact and Thermal-Shock Resistance. *American Antiquity* 51:89-101.

Carr, Christopher
1992 Identifying Individual Vessels with X-Radiography. American Antiquity 58(1): 96-117.

Carr, Christopher and Jean-Christian Komorowski
1995 Identifying the Mineralogy of Rock Temper in Ceramics using X-Radiography. American Antiquity 60(4): 723-749.

Craig, Nathan, Robert J. Speakman, Rachel S. Popelka-Filcoff, Michael D. Galscock and J. David Robertson
2007 Comparison of XRF and PXRF for analysis of archaeological obsidian from southern Perú. *Journal of Archaeological Science* 34:2012-24.

De Francesco, A. M., G. M. Crisci and M. Bocci
2008 Non-destructive analytic method using XRF for determination of provenance of archaeological obsidians from the Mediterranean area : a comparison with traditional XRF methods. *Archaeometry* 50(2):337-350.

Evershed, R. P., S. N. Dudd, M. J. Lockhart and S. Jim
2001 Lipids in Archaeology. In *Handbook of Archaeological Sciences* edited by D. R. Brithwell and A. M. Pollard, pp. 331-350. Wiley, New York.

Gernaey, A. M., E R Waite, M J Collins, O E Craig, and R J Sokol
2001 Survival and Interpretation of archaeological proteins. In *Handbook of Archaeological Sciences* edited by D. R. Brithwell and A. M. Pollard, pp. 323-330. Wiley, New York.

Glascock, M. D.
1992 Characterization of Archaeological Ceramics at MURR by Neutron Activation Analysis and Multivariate Statistics. In *Chemical Characterization of Ceramic Pastes in Archaeology*, ediged by H. Neff, 11-26. Monographs in World Archaeology, No. 7, Madison, WI: Prehistory Press.

Goffer, Zvi
1980 *Archaeological Chemistry*. Wiley, New York.

Grupe, G.
2001 Archaeological microbiology. In *Handbook of Archaeological Sciences* edited by D. R. Brithwell and A. M. Pollard, pp. 351-358. Wiley, New York.

Isphording, Wayne C.
1974 Combined thermal and x-ray diffraction technique for identification of ceramic ware temper and paste minerals. *American Antiquity* 39(3):477-483.

Kaiser, T., and W. Lucius.
1988. Thermal expansion measurements and the estimation of prehistoric pottery firing temperatures. In G. Bronitsky, ed., *Pottery technology: ideas and approaches*. pp. 83-100. Boulder, CO: Westview Press.

Neff, Hector (editor)
1992 *Chemical Characterization of Ceramic Pastes in Archaeology*. Monographs in World Archaeology 7. Madison: Prehistory Press.

Neff, H. Neff and D. M. Glowacki
2001 Ceramic Source Determination by Instrumental Neutron Activation Analysis in the American Southwest. In, *Ceramic Production and Circulation in the Greater Southwest: Source Determination by INAA and Complementary Mineralogical Investigations*, edited by D. M. Glowacki and H. Neff. The Cotsen Institute of Archaeology, UCLA

Speakman, Robert J. and Hector Neff (editors)
2005 *Laser Ablation-ICP-MS in Archaeological Research*. University of New Mexico Press, Albuquerque.

Steponaitis, Vincas P.
1984 Technological Studies of Prehistoric Pottery from Alabama: Physical Properties and Vessel Function. In *The Many Dimensions of Pottery*, S. van der Leeuw and A. Pritchard, eds., pp. 81-127. Amsterdam.

Stoltman, James B.
1989 A Quantitative Approach to the Petrographic Analysis of Ceramic Thin Sections. *American Antiquity* 54:147-160.

1991 Ceramic Petrography as a Technique for Documenting Cultural Interaction: An Example from the Upper Mississippi Valley. *American Antiquity* 56(1):103-120.

2000 The Role of Petrography in the Study of Archaeological Ceramics. In *Earth Sciences and Archaeology*, edited by V. T. H. Paul Goldberg, and C. Reid Ferring, pp. 297-326. Kluwer Academic/Plenum Publishers.

Tite , Michael S.
1992 The impact of Electron Microscopy on Ceramic Studies in *New Developments in Archaeological Science* ed. A M Pollard. pp. 111-131

1999 Pottery Production, Distribution, and Consumption – The Contribution of the Physical Sciences. *Journal of Archaeological Method and Theory* Vol. 6(3), pp. 181-233.

2008 Ceramic production, provenance and use : a review. *Archaeometry* 50(2):216-231.

Tite, Michael S., I. C. Freestone, N.D. Meeks, and M. Bimson
1982 The Use of Scanning Electron Microscopy in the Technological Examination of Ancient Ceramics. In *Archaeological Ceramics*, J. Olin and A. Franklin, eds., pp. 109-120. Washington, DC: Smithsonian Institution Press.

**11/9 - Production/Distribution**

*Required Readings:*

Sinopoli Ch. 5

Arnold, Dean E.
2000 Does the Standardization of Ceramic Pastes Really Mean Specialization? Journal of Archaeological Method and Theory 7(4): 333-375.

Costin, Cathy
1991 Craft Specialization: Issues in Defining, Documenting, and Explaining the Organization of Production. In *Archaeological Method and Theory*, vol. 3, M. Schiffer, ed., pp. 1-56. Tucson: University of Arizona Press.

Roux, Valentine
2003 Ceramic Standardization and Intensity of Production: Quantifying Degrees of Specialization. *American Antiquity* 68(4):768-782.

Underhill, Anne P.
1991 Pottery Production in Chiefdoms: The Longshan Period in Northern China. *World Archaeology* 23(1): 12-27.

*Optional:*

Costin, Cathy Lynne
2000 The use of ethnoarchaeology for the archaeological study of ceramic production. *Journal of Archaeological Method and Theory* 7:377-403.

D'Altroy, Terence N., and Ronald L. Bishop
1990 The provincial organization of Inka ceramic production. *American Antiquity* 55(1):120-138.

Rice, Prudence
1981 Evolution of Specialized Pottery Production: A Trial Model. *Current Anthropology* 22(3):219-240.

Rice, Prudence M.
1991 Specialization, standardization, and diversity: a retrospective. *Ceramic Legacy of Anna O Shepard*.

Underhill, Anne P.
2003 Investigating Variation in Organization of Ceramic Production: An Ethnoarchaeological Study in Guizhou, China. *Journal of Archaeological Method and Theory* 10(3):203-275.

**11/16 - Style and Social Interaction**

*Foundational Theory (If you have not read these, or read them in awhile, please read or review)*
Dietler, M., and I. Herbich
1998 Habitus, techniques, style: an integrated approach to the social understanding of material culture and boundaries. In M. Stark, ed., *The Archaeology of social boundaries*. pp. 242-273. Washington D.C.: Smithsonian Institution Press.

Hegmon, Michelle
1992 Archaeological Research on Style. *Annual Review of Anthropology* 21:517-536.

Wobst, M.
1977 Stylistic behavior and information exchange. In C. Cleland, ed., *For the director: research essays in honor of James B. Griffin*. pp. 317-342. Ann Arbor: University of Michigan.

*Required Readings:*
Rice Ch. 8

Gosselain, Olivier P.
2000 Materializing identities: an African perspective. *Journal of Archaeological Method and Theory* 7:187-217.

David, N., J. Sterner, and K. Gavua
1988 Why pots are decorated. *Current anthropology* 29: 365-390.

Spielmann, Katherine A., Jeannette L. Mobley-Tanaka and James M. Potter
2006 Style and resistance in the seventeenth century Salinas province. *American Antiquity* 71:621-47.

*Optional Readings:*
Gosselain, Oliver P.
1998 Social and technical identity in a clay crystal ball. In *The Archaeology of Social Boundaries*, edited by M. T. Stark, pp. 78-106. Smithsonian Institution Press, Washington, D.C.

Herbich, Ingrid
1987 Learning patterns, potter interaction and ceramic style among the Luo of Kenya. *African archaeological review.*

Emberling, G.
1997 Ethnicity in complex societies: archaeological perspectives. *Journal of archaeological research* 5: 295-344.

Plog, S.
1978 Social interaction and stylistic similarity: a reanalysis. *Advances in archaeological method and theory* 1: 143-182.

*Optional Readings on Design*:
Watson, P. J.
1977 Design analysis of painted pottery. *American Antiquity* 42:381-93.

Washburn, Dorothy
1989 The Property of Symmetry and the Concept of Ethnic Style. In *Archaeological Approaches to Cultural Identity*, edited by S. Shennan, pp. 157-173. Unwin Hyman, London.

**11/23 - Case Studies I**
*Required Readings:*
Sinopoli Ch. 6 and 7

Crown, Patricia L. and W. H. Wills
1995 Origins of Southwestern ceramic containers: women's time allocation and economic intensification. *Journal of anthropological research* 51(2):173-186.

Eerkens, Jelmer W.
2003 Residential mobility and pottery use in the western Great Basin. *Current anthropology* 44(5):728-738.

Hoopes, John W. and William K. Barnett
1995 The Shape of Early Pottery Studies. In *The Emergence of Pottery: Technology and Innovation in Ancient Societies*, edited by W. K. Barnett and J. W. Hoopes, pp. 1-10. Smithsonian Institution Press, Washington.

Reid, Kenneth C.
1989 A Materials Science Perspective on Hunter-Gatherer Pottery. In *Pottery Technology: Ideas and Approaches*, edited by G. Bronitsky, pp. 167-180. Westview Press, Boulder, Colorado.

*Optional:*
Feathers, James K.
2006 Explaining shell-tempered pottery in prehistoric eastern North America. *Journal of Archaeological Method and Theory* 13:89-133.

Longacre, William A.
1995 Why did they invent pottery anyway? In *The Emergence of Pottery: Technology and Innovation in Ancient Societies*, edited by W. K. Barnett and J. W. Hoopes, pp. 277-280. Smithsonian Institution Press, Washington.

Rice, Prudence M.
1999 On the Origins of Pottery. *Journal of Archaeological Method and Theory* 6:1-54.

Simms, Steven R., Jason R. Bright and Andrew Ugan
1997 Plain-ware ceramics and residential mobility: a case study from the Great Basin. *Journal of Archaeological Science* 24(9):779-792.

**11/30 - Case Studies II – Status, Politics, and Social Organization**
*Required Readings:*

Blitz, John H.
1993 Big Pots for Big Shots: Feasting and Storage in a Mississippian Community. *American Antiquity* 58:80-95.

Deetz, James
1965 *The dynamics of stylistic change in Arikara ceramics*. Illinois studies in anthropology, no. 4. University of Illinois Press, Urbana. Read Ch 2 and 3.

Welch, Paul D., and C. Margaret Scarry
1995 Status Related Variation in Foodways in the Moundville Chiefdom. *American Antiquity* 60: 397-419.

Betts, Colin M.
2006 Pots and pox : the identification of protohistoric epidemics in the upper Mississippi Valley. *American Antiquity* 71(2):233-259.

Crown, Patricia L.
2007 Learning About Learning. In *Archaeological Anthropology: Perspectives on Method and Theory*, edited by J. M. Skibo, M. W. Graves and M. T. Stark, pp. 198-217. University of Arizona Press.

Senior, Louise M.
1994 The Estimation of Prehistoric Values: Cracked Pot Ideas in Archaeology. In *Expanding Archaeology*, edited by J. M. Skibo, W. H. Walker, and A. E. Neilsen, pp. 92-110. University of Utah Press, Salt Lake City.

*Optional:*
Mills, Barbara
1999 Ceramics and Social Contexts of Food Consumption in the Northern Southwest. In *Pottery and People: A Dynamic Interaction*, edited by James M. Skibo and Gary M. Feinman, pp. 99-114. University of Utah Press, Salt Lake City.

Mitchell, Christi
1992 Activating Women in Arikara Ceramic Production. In *Exploring Gender Through Archaeology: Selected Papers from the 1991 Boone Conference*, edited by C. P. Claassen, pp. 89-94. Monographs in World Archaeology No. 11.

Pauketat, Timothy R. and Thomas E. Emerson
1991 Ideology of authority and the power of the pot. *American Anthropologist* 93(4):919-941.

Potter, James M.
2000 Pots, Parties, and Politics: Communal Feasting in the American Southwest. *American Antiquity* 65(3): 471-492.

Chilton, Elizabeth S.
1998 The cultural origins of technical choice: unraveling Algonquian and Iroquoian ceramic traditions in the Northeast. In *The Archaeology of Social Boundaries*, pp. 132-160. Washington, D.C. : Smithsonian Institution Press.

Hegmon, Michelle and Stephanie Kulow
2005 Painting as agency, style as structure: innovations in Mimbres pottery designs from southwest New Mexico. *Journal of Archaeological Method and Theory* 12:313-34.

Whittlesey, Stephanie
1974 Identification of imported ceramics through functional analysis of attributes. *The Kiva* 40(1-2):101-112.

Wright, Rita P.
1991 Women's Labor and Pottery Production in Prehistory. In *Engendering Archaeology: Women and Prehistory*, Joan M. Gero and Margaret Conkey, eds., pp. 194-223. London: Basil Blackwell.

**12/7 – Term Paper Presentations**

**12/14 – Term Papers Due**