Undergraduate Research Academy (URA)

Application for Student Fellowship

SEND TO CAMPUS BOX 1300
BY NOON, WEDNESDAY, MARCH 19, 2003
(Please type)

1. Name_ Jennifer D. Wilkey
3. Local Address
4. Local Telephone
5. e-mail

2. ID#

6. Academic Major_ Anthropology/Studio Art
7. Hours Completed_ 100.00
8. GPA (4-point scale)_ 3.97

9. Nominated by_ Dr. Julie Holt
10. Reviewed by: (Please print)
   Faculty Mentor_ Julie Holt
   Department Chair_ Dallas Brown
   Ivy Cooper

11. Title of Research Project
   Determining the Function of Stumpware in the American Bottom through Experimental Archaeology

Please send the original plus 10 copies of the proposal, including budget justification and cover page.

12. Budget Summary
   Total: $ 800.00
   Commodities: $ 530.00
   Contractual Services: $ 200.00
   Travel: $ 70.00
   Other (specify): $ __

13. Valid nominations must carry all of the following approval signatures with dates:

   a. Clearances (as appropriate):
      Animal Care
      Human Subjects
      Toxic Waste

   b. Student
      [Signature]
      3/18/03

   c. Faculty Mentor
      [Signature]
d. Department Chair

Dr. Valley L. Brown 3/18/03

e. Dean of College/School

David Sterling

f. Undergraduate Research Academy Interview

Cindy Rausdale 3/14/03

SIUE Undergraduate Assessment -&- The Undergraduate Research Academy

Box 1300 voice: 618/650-2640 e-mail: deder@siue.edu FAX: 618/650-3633
ABSTRACT: The abstract is a brief, comprehensive summary of the content of the proposal in about 150 words in plain language. Reviewers receive their first impression from this abstract. The information needs to be concise, well organized, self-contained, and understandable to persons outside your academic discipline.

Stumpware is an archaeological ceramic style present in the American Bottom area of Illinois and adjacent areas of Missouri from around AD 850 to 1320. These vessels have a funnel-shaped interior with holes penetrating vertically or horizontally. However, little is known about this unique vessel. I plan to determine a possible function or functions for stumpware vessels through experimental archaeology. This will be done through the reproduction of this ceramic style. I plan to make and fire a variety of stumpware in a traditional manner. Then, I will experiment with the possible purposes for these vessels. This will include hypothesized functions such as holding round pots during firing, salt production, maple syrup production, and hominy (a type of maize meal) production. I will also create a comparative collection of stumpware vessels excavated by Illinois Transportation Archaeological Research Program in order to capture the variety seen throughout the American Bottom. The final product of this project will include an academic paper, slide show on power point, and a possible museum display in the Anthropology department of photographs, vessels, and descriptions of the process.

Upon submitting this proposal, I verify that this writing is my own and pledge to fulfill all of the expectations of the Undergraduate Research Academy to the best of my abilities. I understand that failure to do so may result in return of fellowship money to the University and forfeiture of academic credit and honors recognition.
I am able, willing, and committed to providing the necessary facilities and to take the
time to mentor this student during this project. I verify that this student is capable of
undertaking this proposed project.

Signature of the Faculty Mentor

This project is within the mission and scope of this department, and the department fully
supports the faculty mentor and student during this venture.

Signature of the Department Chairperson

I testify that all necessary research protocols (human, animal, toxic waste) have been
fulfilled, and I support this proposed faculty-student scholarly activity as within the
mission of the College/School.

Signature of the Dean of the College/School
Introduction and Significance

I grew up in Illinois with Cahokia in my backyard. In the summer of 2001, I had my first experience with archaeology through a field school run by Dr. Julie Holt. My interest was sparked and I have been actively involved doing archaeology since then. My interest in art and creating has existed since childhood. It was this combined interest in both fields of study that brought me to this project.

Stumpware is an archaeological ceramic type from the American Bottom. It is a footed vessel with a funnel shape interior and usually has a hole going through it (see attached illustrations). It is quite an unusual vessel compared to the rest of the ceramic assemblage. One would think that this unique style would be of special interest and that scholars in the field would be working to determine its function. However, this is not the case. While a variety of stumpware types have been unearthed, no one has figured out its purpose. However, I wish to address this challenge.

I plan to reproduce stumpware using traditional methods. With these reproductions, I wish to experiment with the possible functions of stumpware. Stumpware vessels are very different from the bowls or jars normally found and their function must also be something very different.

Literary Review

Bareis and Porter describe stumpware in American Bottom Archaeology. Stumpware appears during the Range phase (ca. AD 850-900) of the Emergent Mississippian Period (1). It is a prominent ceramic type until the Lohmann Phase (ca. AD 890-1320) of the Mississippian Period when it starts to disappear (1). No stumpware is present in the archaeological record after the Lohmann Phase. The vessels are unusually tempered (material added to reduce air pockets in the clay) with limestone, grog (crushed up ceramics and water mixture), grit (sand), or a
combination of both. The exteriors are usually cord-marked (markings left from cordage used to keep the vessel's shape during firing) and the interior is plain. The interiors are funnel-shaped. Most have holes that run vertically or horizontally and go all the way through the vessel (1). Stumpware from the George Reeves site illustrates these characteristics (2).

There is little research available on the function of stumpware, but at least five untested hypotheses exist. Bareis and Porter suggest that stumpware may have been used for funnels due to the interior shape and the basal holes (1). Brown believes that stumpware vessels were used in salt production. They could have been used to support evaporating pans of salt water or to hold drying salt and serve as salt molds. He supports his argument with Old World and New World salt production refuse and sites the Kimmswick saline as providing evidence of salt production in Jefferson County, MO (3). Kelly, Ozuk, and Williams propose that stumpware was used for supporting round-bottomed cooking jars during firing in their research on the Range Site. The feet on the stumpware could be used to hold the vessels with the opening to the ground and the holes would allow for the pot to be turned while firing. Stumpware could also be used on its side for firing at lower heights (4). Galloy, Parker, and Babcook suggest the use of stumpware in hominy (a corn meal) production in their article on the Bivouac Site (5). The idea is not developed any further, however. Don Booth suggests stumpware was used in maple syrup production. He believes that practices would be similar to those used by Southwestern Native American groups (Personal communication).

This research is a form of experimental archaeology. Lewis Binford explains this concept in his book In Pursuit of the Past. Experimental archaeology recreates processes and material from the past to better interpret the archaeological record (6). This is a part of Binford's middle range theory as described in Working in Archaeology. Middle range research serves to connect the present to the past. It uses methods like ethnographic studies, experimental archaeology, and historical documents to do so. Through this, one can apply theory to the archaeological record, which is only material (7). Experimental archaeology also serves to create
a stronger bond to the culture being investigated by performing an activity as that culture would have.

**Hypothesis**

By reproducing stumpware vessels, I will be practicing a form of experimental archaeology. Through this process of reproduction, I will narrow the possible functions of stumpware by testing the following hypotheses.

Based on research and communication with local archaeologists, I have found five possible uses for stumpware. One purpose may be to hold round-bottomed bowls. This purpose seems simplistic and unnecessary to me. There is no clear reason at this time why a bowl needs to be kept above the fire and heated evenly. The second possibility is that stumpware was used in salt production to hold pans and as salt molds. This could be a valid possibility because corn and salt are both required for a balanced diet and enter the scene at the same time that stumpware does. However, this does not explain why stumpware is found in village settings away from the saline. Thirdly, stumpware may have been used in the production of hominy to hold up the vessels of corn. This seems logical as well, since corn and stumpware appear at the same time in the archaeological record. However, it would be hard to find evidence for this in the archaeological record. The fourth possibility is that stumpware was used in maple syrup production. This would be a difficult point to prove as well, due to the lack of evidence for this in the archaeological record, but ethnographic records from the Southwestern Native Americans may provide insight. The final possibility suggests that stumpware was used as funnels due to their shape and the holes that penetrate them. This seems to be a likely possibility, especially in combination with the salt production explanation. Stumpware could be used to hold salt and the holes would serve to funnel the water away while drying. However, not all stumpware vessels
have holes that penetrate all the way through. The fact that stumpware vessels were so poorly made leads me to believe that whatever their purpose was, it was intended for short term use.

Materials, Procedures, and Timeline

This spring I will begin background research for this project. I will speak to fellow archaeologists in this area about stumpware and their theories on possible functions. Illinois Transportation Archaeological Research Program has a large site with a high amount of artifacts being recovered. I have gained permission to document the variety of stumpware that has been excavated. This will include taking notes about the vessels, as well as photographing and drawing the stumpware. This will create an archaeological collection for me to study and evaluate for variations and styles.

During the summer, I plan to take a primitive ceramics class with Paul Dresang. This class will provide me with a basic knowledge of techniques for creating and firing primitive ceramics. I will begin to construct my own pit fire on campus in the late summer and begin creating my own vessels soon after. I will continue to research my topic with trips to the Illinois State Museum and Kampsville to speak with archaeologists and view collections.

During the fall, I will continue to make stumpware vessels and experiment with their uses. I will try to include as many variations of stumpware as possible. I will document my progress through notes, as well as photographs and video. During this time, I will also begin writing my senior paper.

In the spring semester, I will complete my paper and create my presentation for both the URA and senior assignment presentations. This will include a slide show of images and video from the actual process of creating and testing the stumpware. I also plan to create a display in the Anthropology department. This will include the actual recreated vessels, data, drawings, and photographs from the project.
A variety of materials will be necessary to complete this project. Clay will be necessary for the creation of vessels. Grit, limestone, and shell will be needed for tempering the pieces. Cord will be used to hold the vessel's shape during firing. Wood will be used for starting fires. Bricks will be needed to create a boundary around the pit fire to prevent damage. Dust masks will be used for smoke protection while I am firing the pieces. Salt water, corn, and syrup will be needed for experimentation of production processes. Film and video tape will be necessary for the documentation of the project and of the stumpware collection. Close-up 58mm filters will be needed for close up focus of the stumpware documentation. A cable release will be used to take pictures while I am working and cannot be behind the camera. Zip disks will be used for saving the slide show and edited pictures and video. A museum board will be needed for presentation and paper will be needed to print my final paper and drafts. Gas and food money will be used for trips to Kampsville and the Illinois State Museum for research. Film processing and printing will also require financial support.

The focus of this project is on the process of experimental archaeology more than obtaining results. Testing the hypothesized functions for stumpware will not verify how stumpware was used. Philosopher Karl Popper argued that one could never verify any hypothesis because it is logically impossible. So, the issue of verification is not seen as a problem. By falsifying some of the proposed hypothesises, however, I will narrow the possibilities and perhaps come a little closer to the “truth”. This research will be significant because it will provide a better understanding of prehistoric stumpware use, and it is also theoretically significant because it demonstrates the utility of experimental archaeology.
References


Budget Justification

Commodities

(1) clay for recreating the stumpware $125.00
(2) limestone for temper $5.00
(3) grit (sand) for temper $5.00
(4) film (slide and print) for documentation $100.00
(5) wood for starting fires $25.00
(6) cordage for holding the shape of vessels during firing $5.00
(7) brick for a pit fire boundary to protect it from damage $15.00
(8) zip disks for storing slide show and edited video and photographs $100.00
(9) museum board for final presentation in the URA and senior project $15.00
(10) Close-up 58mm filters for close up documentation of stumpware $60.00
(11) dust masks for protection during firing vessels $2.50
(12) shell for temper $10.00
(13) salt water for salt production experiment $5.00
(14) video tapes for documentation $25.00
(15) corn for use in hominy production $2.50
(16) syrup for maple syrup production experiment $10.00
(17) paper for printing of paper and drafts $10.00
(18) cable release for documentation of process $10.00

Total: $530.00

Travel

(1) gas to travel to Kampsville and Illinois State Museum for research $30.00
(2) food while in Kampsville and at Illinois State Museum $40.00

Total: $70.00
**Contractual Services**

(1) film processing for documentation  \( \$100.00 \)

(2) printing of film for documentation  \( \$100.00 \)

Total:  \( \$200.00 \)

**Total Budget**  \( \$800.00 \)
Plate 24. Emergent Mississippian stumpware.