

***Center for Undergraduate Research and Creative Activities
North Georgia College and State University
Dahlonega, Georgia
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Research Proposal

Faculty Member Name: Dr. Jack T. Wynn
Email address: jtwynn@northgeorgia.edu
Department: History and Philosophy

Title of Proposal: *Duckett Site Soil Flotation and Plant Analysis*

End date for proposed activities: December 30, 2011

Description of Proposed Project:

This project will train NGCSU student Jason King to retrieve and do initial sorting for biological analysis of plant remains in soil samples excavated from the Duckett Archaeological site. Resulting paper(s) by King and Archaeobotanist Leslie Branch-Raymer should be published in archaeological journals.

A crew of students from North Georgia College and State University, the University of West Georgia, and Kennesaw State University, along with members of the Blue Ridge Archaeology Guild conducted archaeological test excavations at the Duckett site (9HL554) in northern Hall County in late May and early June, 2011. Goals of that project were to define the area, time period of occupation, and general content (possible functions) of the site. This project was conducted entirely by volunteers as a learning experience in archaeological research under the direction of Dr. Jack Wynn, of NGCSU. Three of the NGCSU students, including Jason King, to be involved in this project, were on History and Philosophy Department Internships, and produced term papers describing their parts in and interpretation of the project's discoveries. Currently these papers are being revised for publication.

Nearly 30 soil samples from the prehistoric Middle Woodland

people who occupied the site around A.D. 150-450 were collected. From these samples plant remains can be identified to determine their importance to the Duckett site people. This project's purpose is to complete the recovery and identification of these possibly domesticated plants from the site.

Significance of the proposed work:

Currently southeastern archaeologists feel that during this Middle Woodland period, Native Americans in northern Georgia were hunter-gatherers who were just beginning to domesticate local plants and farm them with some regularity. Charred remains from Duckett site campfires may indicate whether these people were in fact farming, and specifically which plants they had selected for special attention. Plant identification has been done for a few mostly large, complex sites in north Georgia in the past 15 years. However, very little is known about plant uses by isolated hunter-gatherer groups who might have been experimenting with domesticated agriculture. Duckett site soil samples give us a great opportunity as students and professionals to learn about this vital step in the adaptation to plant domestication in Southern Appalachia, and contribute to the literature about this interesting and important topic in both archaeology and biology.

This summer, the students designed and built a flotation tank, used to separate charred remnants of plants and other light materials from heavier artifacts and the soils. Jason King initiated testing of the flotation system on three bagged soil samples, and these were examined cursorily by a professional Archaeobotanist, Leslie Branch-Raymer, of New South Associates in Stone Mountain, GA. She identified four different plants from the samples presented to her, and was enthusiastic that more detailed examination of the other samples was likely to produce additional data on the question of plant domestication at the site.

Goals and expected products:

When approached about this proposed project, Ms. Branch-Raymer readily agreed to teach Jason and others more about flotation and better methods to recover plant remains. She will also do formal plant identification, once a preliminary gross sorting of the "light fraction" was completed. By this, she said that Jason could sort out the roots and larger chunks of charcoal from the dried samples under strong magnification, allowing her to concentrate on identifying genus and species of charred seeds and other plant parts. Both steps are time-consuming. She also offered to share authorship of the report with the student, and give an on-campus presentation on the process and results if we desired.

Project Plan, including Undergraduate Involvement:

The following steps are planned to carry out the recovery and identification of the plant remains from the Duckett Site. Only one student is currently expected to participate in the project, Jason King, who has agreed to do the work this fall, following on the summer's field and lab work at Duckett Site.

1/ Complete flotation and drying of the remaining 20+ gallon-bags of soils taken from the features (fire and trash pits), and the cultural layers found in certain of the shovel tests. This will be done by the student, Jason King, and may be done on-campus or at Ms. Branch-Raymer's laboratory in Decatur.

2/ Train the student in the process of flotation and sorting of materials retrieved from the process. Jason will need to go to Ms. Branch-Raymer's laboratory probably three times during the semester.

3/ Conduct the initial gross sorting of materials retrieved. This is the most time-consuming part of the project. Having the student do this will save the cost of Ms. Branch-Raymer's time for doing the more complex plant identification. The student will learn to identify some plants and plant parts, and be paid for his labor in this part of the process.

4/ Submit the sorted samples to Ms. Branch-Raymer for plant identification. We expect to submit two or three groups of samples as he sorts them, probably one set a month, based on source locations in the site and type of materials found. This will give us staged preliminary results, on which the student can do additional background research on such questions as "What plants do we have here, what were their possible functions, and how do they compare to other known sites of that time period?"

5/ Prepare a joint final report by the student and Ms. Branch-Raymer on the project results, for peer-reviewed journal publication. It is expected that this project will produce a student presentation at state-wide Society for Georgia Archaeology meetings, and possibly elsewhere.

Additional results of the project:

This project will produce much-needed data on the plants utilized by the Duckett Site inhabitants of 1500-2000 years ago, and the process of selection and domestication of local plants. It will contribute to the training and support of an NGCSU student in a distinctive research skill. Resulting reports will publicize the cooperation between segments of the University and between the University, local amateur archaeologists, and the private sector

professionals in the fields of Archaeology and Biology.

Scheduling:

It is expected that the laboratory portion of this project can be completed by the end of the current year. If necessary, report preparation and revisions may be continued into 2012, and reports presented in the Spring 2012 professional meetings. Jason will be expected to work on the project 8-10 hours a week during the fall, and work and communicate with Ms. Branch-Raymer as needed throughout the project. Dr. Jack Wynn, of the History and Philosophy Department, will supervise the activities of the project both on-campus and as needed elsewhere.

PROPOSED BUDGET

ITEM COST

Student worker, Jason King	120 hours @ \$8.50
Benefits on \$1,020 @ .0765	78.03
Decatur	3 trips to in bursement, est. 390 mi @ 25 mpg
Leslie Branch-Raymer, Contract Archaeobotanist and Instructor	
Instruction in processes, report prep, 4 da. @ \$100.00	400.00
Plant Identification, 5 hrs @ \$100.00/hr	500.00
100.00	Equipment and
Equipment and supplies – NGCSU	Bags, screens,
kits, storage envelopes 150.00	NGCSU Biology Dep
offered the	temporary use
sorting for the dried samples. N/C	work space will be
provided by the	History and Philo
Total Costs	\$2,304.19

Timeline: (Note: all dates are approximate, and keyed to the student's activities):

- Oct 3, 2011. Set up tank and drying facility and begin Flotation of Feature 6 soil sample bags
- Oct 10. Begin examination and sorting of first dried samples, from Feature 6 (fire pit?)
- Oct 28. Submit first set of sorted dried samples (F-6) to Ms. Branch-Raymer for plant identification
- Oct 31. Begin sorting second set of dried samples, from Shovel Tests
- Nov 14. Conduct literature search on specific plants identified by Ms. Branch-Raymer, for application to Duckett Site occupants, and Woodland time period
- Nov 28. Submit second set of samples to Ms. Branch-Raymer for

identification

Dec 12. Submit third set of sorted samples to Ms. Branch-Raymer for analysis and identification.

Dec 13. Begin report preparation on research findings (Student and Contractor, joint authors)

Dec 23-30. Complete draft report for local peer review, then prepare to submit to *Early Georgia* for publication after January 1, 2012.

(Ms. Branch-Raymer is a well-recognized expert in Archaeobotany, with publications over 27 years.)

Staff specialty responsibilities from the web page of New South Associates, Inc, of Stone Mountain, GA., a Cultural Resources Management Company. Copied August 29, 2011.

LESLIE E. BRANCH-RAYMER, M.A., RPA
Archaeobotanist and Archaeologist

Leslie Branch-Raymer, RPA, serves New South Associates as an Archaeobotanist and Director of the Subsistence Studies Program, which is a specialized consulting service offered to other cultural resource consultants, providing integrated archaeobotanical and zooarchaeological analysis and reporting for projects in the eastern United States. As Subsistence Studies Director, Ms. Branch-Raymer is responsible for marketing subsistence studies analysis services, proposal preparation, project management and administration, direction of specialist analysts and laboratory technicians, and archaeobotanical analysis and reporting. Ms. Branch-Raymer received her B.A. in History from Furman University at Greenville and her M.A. in Anthropology from the University of Oklahoma. She is a Registered Professional Archaeologist (RPA) with over 27 years professional experience, and has been with New South Associates since its inception in 1988. Ms. Branch-Raymer is the author or co-author of 170 archaeobotanical reports, 42 cultural resource reports, 10 professional publications, three archaeological research designs, and one traditional cultural property assessment. She is a member of the Georgia Council of Professional Archaeologists and the Society for Georgia Archaeology. She has conducted work for the U.S. Army Corps of Engineers, the National Park Service, the U.S. Forest Service, the U.S. Fish and Wildlife

service, several Departments of Transportation, and a variety of other public and private clients. She has worked in over 20 states and the District of Columbia. Ms. Branch-Raymer has conducted and reported field archaeological research, performed numerous detailed studies of prehistoric ceramic assemblages, prepared exhibits on Georgia prehistory for state museums, assessed archaeological collections for NAGPRA compliance, and conducted training workshops in archaeobotanical method and theory. Ms. Branch-Raymer has wide-ranging experience in Historic Period Euro-American, African-American, and Native American archaeobotanical studies in support of projects mandated by the NHPA and NEPA, and specializes in African-American Archaeology, emergent Mississippian subsistence systems, urban historic foodways, landscape archaeology, and prehistoric ceramic classification.

*Note: Ms. Branch-Raymer is in the process of setting up a separate consulting company under her own name. When that company is formally established, we will be notified of a new company name, mailing and billing address. Her overheads will be somewhat less than those required by the current company, New South Associates, Inc. This will allow her to donate additional time to this project, as needed. We have a 10-page Curriculum-Vitae for Ms. Branch-Raymer; if CURCA wishes we can supply it.