Project Summary

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Project Title: REU Site: Interdisciplinary Investigations at New Philadelphia. **Principal Investigator**: Christopher C. Fennell. **Submitting Organization**: University of Illinois, Urbana-Champaign. **Other organizations involved**: Illinois State Museum. **Locations of Research**: Pike County and Springfield, Illinois. **Main Field of Research**: Anthropology. **Sub-field of Research**: Archaeology. **No. of Student Participants**: 9. **Summer REU Site; No. of Weeks on Site**: 10. **International, Ethics, or RET Components**: none included. **Point of Contact**: name: Christopher Fennell; telephone number: 217-244-7309; email: cfennell@uiuc.edu. **Web site**: http://www.anthro.uiuc.edu/faculty/cfennell/NP/

The New Philadelphia project is an interdisciplinary, scientific, and archaeological study of the history of an integrated town established on the Midwestern frontier in the 19th century.

Intellectual Merit -- New Philadelphia was the first town planned and legally registered by an African American in the United States. The town grew as an integrated rural community of craftspeople, laborers, farmers, and their families until a regional railroad company bypassed it in 1869. Through the late 19th century the town slowly disappeared from the landscape as people moved to larger surrounding communities and distant urban areas. Today, the site is situated in plowed fields with only a few remaining building foundations. The goals of this research project are to understand how ethnicity, racism, and developing markets influenced the ways in which individuals and families of this integrated community made choices in shaping their natural, social, and built environments and in developing and practicing dietary, agricultural, and consumer strategies and traditions. This study will add a new perspective to understanding the changing relationships between whites and blacks in an integrated community over the course of the antebellum and postbellum eras.

The project's goal is to incorporate students in the research design, data collection, and analysis of archaeological materials. The University of Illinois, Urbana-Champaign will be the host institution with substantial cooperation from the Illinois State Museum (ISM), DePaul University, the University of Maryland, and the University of Illinois-Springfield. The New Philadelphia Association, a local non-profit group, will also provide support. This cooperative program brings a diversity of professionals and community members together and it will significantly enhance the quality and availability of undergraduate research experiences. The program will be divided into three components: a one-week orientation that includes geophysical surveying of archaeological sites; a four week archaeology field season collecting data; and a five week session at ISM scientifically analyzing data from material culture, faunal, and botanical remains. Students will work in a collaborative effort while also receiving mentorship from an interdisciplinary team of professionals. Students will receive training in archaeological field methods, artifact identification, data cataloguing, and data interpretation, as well as in faunal and macrofloral analyses.

Broader Impacts -- New Philadelphia was added to the National Register of Historic Places as a nationally significant archaeological resource in 2005. This REU program will accept 9 students for 10 weeks, and will recruit a diversified pool of talented students who will participate in all aspects of the research. The project's goal is to increase the participation of underrepresented minorities. Students will be recruited from historically black colleges and smaller colleges at which such research experiences are less available. Participating students will be encouraged to prepare presentations for workshops, conferences, and public exhibitions of the project findings. Project participants will promptly publish reports and underlying data obtained in this project to a broad and diverse array of interested stakeholders and public and professional audiences through the project's internet sites and in future articles and monographs. This project is designed to expand our knowledge about this remarkable community and the contexts of economic, ethnic, and racial dynamics in which it existed.

REU Site: Interdisciplinary Investigations at New Philadelphia

A) Overview.

Project objectives

This proposed NSF-REU sites program will significantly enhance undergraduate education in scientific methods and analyses in a long-term project at New Philadelphia. New Philadelphia stood on Illinois' western frontier from 1836 until the community's demise in the early twentieth century. The primary research goals of the project are: 1) to understand the town's founding and development as an integrated town; 2) to explore and contrast dietary patterns between households of different ethnic and regional backgrounds by examining faunal and botanical remains; 3) to reconstruct the townscape and town lot uses of households from different ethnic backgrounds using botanical data and archaeological landscape features; and 4) to elucidate the consumer choices residents of different ethnic and regional backgrounds made in a frontier context and understand how household choices changed with increased connections to distant markets and changing perceptions of racism.

The project uses state-of-the-art archaeological survey and field methods to locate and recover material culture and archaeobiological remains. The analysis of these data will create a hands-on mentoring process for students in an interdisciplinary setting. Ultimately, these different data sets will be integrated and the students will gain an understanding of the importance of scientific, interdisciplinary research as they examine the growth and development of the town. This research will elucidate how individual members and families of this integrated community made choices in shaping their natural, social, and built environments and in developing and practicing dietary, agricultural, and consumer strategies and traditions.

The New Philadelphia story is both compelling and unique. Most studies in historical archaeology that concentrate on African-American subjects have concerned plantation life and slavery during the pre-emancipation era (Leone et al. 2005). The history of New Philadelphia is very different. It is a chronicle of racial uplift and it is about the success of African-American families and their ability to survive and prosper in a racist society in both the pre- and post-emancipation eras. The New Philadelphia story is about the quest for freedom, life on the frontier, facing racism, and the struggle of a small rural town to survive. This project will also contribute to historical studies of the dynamics of agricultural and market economy developments in this region and time period.

In 1830, a freed African American, Frank McWorter, acquired 160 acres of land in the sparsely populated area of Pike County, Illinois, situated in the rolling hills bounded by the Illinois and Mississippi rivers. McWorter had been born into slavery, but in his lifetime he succeeded in purchasing freedom for himself, his wife, and 14 other family members. In 1836, he planned and legally registered a town of 42 acres in size out of his landholdings, subdivided that property, and sold lots. McWorter then used some of this revenue to purchase the freedom of family members. He encouraged other African Americans as well as those of European descent to move to the town and create a demographically integrated community. New Philadelphia serves as a rare example of an early, interracial farming community on the nation's Midwestern frontier (Chapman 1880; Simpson 1981; Walker 1983, 1985).

The town's population reached its peak of approximately 160 people after the Civil War, a size comparable to many of Pike County communities today. However, by the end of the century racial and corporate politics of America's gilded age resulted in the death knell for the settlement: a regional railroad company routed a new line around the town. New Philadelphia's businesses and residents moved away and, by the early 20th century, only a few families remained (Chapman 1880; Ensign 1872; Walker 1983).

Today, most of the original 42 acres of the town site have been returned to agricultural use. Only a few scattered house foundations are visible in the plowed fields. In the summer of 2002 Vibert White, then head of the African-American studies program at the University of Illinois at Springfield (and now affiliated with University of Central Florida) initiated a long-term research project for the entire town of New Philadelphia. The University of Maryland (UM) gathered census data, deeds, and other primary and secondary sources. A collaborative project between the UM, Illinois State Museum (ISM), University of Illinois at Springfield (UIS), and the New Philadelphia Association (NPA) helped to initiate an archaeological pedestrian survey in 2002 and 2003. That work revealed that much of the material remains of New Philadelphia still exist in discrete concentrations associated with known house lots.

Principal investigator Paul Shackel (UM), and co-principal archaeologists Christopher Fennell (University of Illinois at Urbana-Champaign [UIUC]) and Terrance Martin (ISM), then applied for and were awarded an NSF-REU grant for three years of archaeological field school research, laboratory analysis, and instruction at the site in 2004-2006 (Grant #0353550). Undergraduate students from across the nation enrolled in those field schools and benefited from very productive excavations during 2004-2006 at New Philadelphia. Under the direction of Michael Hargrave (U. S. Army Construction Engineering Research Laboratory), a geophysics specialist, field school students conducted electric resistivity and electromagnetic surveys, which indicated likely locations for foundation remains or other artifact concentrations below the surface. With the guidance of supervising archaeologists Fennell, Martin, and Shackel, the students then conducted excavations, completing numerous five-foot-square units and uncovering several intact archaeological features, including the remains of house foundations, business activities, storage spaces, cisterns, and wells.

Federal and state census records, tax records, and deeds provide extensive data about the town's residents. However, such historical documents do not provide a specific spatial map of household and merchant locations. Archaeological surveys and excavations can map those locations in much greater detail to provide a richer data set for the social history of this community. The 1836 plat provides a plan for the town, including a grid pattern of streets, alleys, and lots, but the question remains as to whether this design was followed as the town developed. Indeed, newspaper reports during the town's existence indicated that town residents often did not adhere to planned property lines in their building activities. Excavations at the town site in 2004-2006 also uncovered early structures for which documentary evidence from deeds and other historical records provided no indications.

A number of archaeological survey and prospection methods have been employed previously at the New Philadelphia town site by collaborating researchers. These survey methods have included a pedestrian survey and surface collection of a large portion of the town site. Hargrave has conducted 6.5 acres of surface-based geophysical surveys at the town site to date, utilizing electric resistivity and magnetic gradient sensors. Due to the large size of New Philadelphia as platted, it is not practical to attempt surface-based geophysical surveys of the entire town site.

In June, 2007, the National Center for Preservation Technology and Training awarded a grant to Fennell, as principal investigator, to test the usefulness of low-altitude aerial surveys employing high resolution thermal imaging at New Philadelphia. This method will be employed at the town site for a new and specific purpose: determining whether this technology can detect the grid pattern of an historic town site buried beneath 1-2 feet of agricultural fields and prairie grasses. Tommy Hailey of Northwestern State University in Louisiana and Bryan Haley of the University of Mississippi have pioneered the techniques to be used in combination in this survey, and they will collect and process the survey data utilizing a powered parachute ultralight aircraft and a high resolution thermal camera. The exact timing of the survey will be determined based on ground cover, weather, and soil moisture conditions during the coming year.

The data sets from this aerial thermal survey will be geo-referenced and integrated using spatial mapping programs, such as Geographic Information Systems (GIS) software, and the creation of mosaic imaging representations. The survey results can then be examined in relation to a geo-referenced version of the 1836 town plan and other comparative data from archaeological investigations. The results of this aerial survey project will also be published in articles to be submitted to peer-reviewed journals. If successful, this technique will provide an extremely useful resource for applications on numerous similar sites throughout the nation. With additional funding from the NSF-REU program, a new group of undergraduates can participate in ongoing archaeological research efforts and receive training in the ways we can employ the results of cutting-edge scientific methodologies.

Utilizing the results of archaeological and documentary research conducted in 2004-2006 under the earlier NSF-REU grant, our research team succeeded in nominating the entire town site of New Philadelphia to the National Register of Historic Places as a nationally significant archaeological resource in August, 2005. The plan presented here for future archaeological investigations at the town site is designed to further enhance our knowledge about the social dynamics of this remarkable community and its surroundings while conserving the site for future generations of visitors and researchers.

Targeted student participants

Undergraduates interested in an interdisciplinary articulation between history and scientific archaeology will be recruited for this program. The project has developed an impressive relationship between the cooperating institutions and the local and descendant communities. Volunteer participation has been overwhelming and there appears to be a strong and continuing need for a rigorous program in scientific archaeology in this region of the country. Because New Philadelphia is about the challenges of combating and overcoming racism, this REU project will continue to attract minority students and we will focus recruitment efforts on historically black colleges and universities. This project is also located in one of the poorest regions of Illinois, and it is difficult for local undergraduates to receive this type of training. Therefore, regional colleges and universities will also be targeted since many are institutions where research programs are limited. Our goal over the three-year period is to have the majority of the REU undergraduates be students from these categories.

The NSF-REU program also generally recommends targeted recruitment of women for projects involving a discipline in which females are underrepresented. Our past experience in conducting archaeological field schools, and recent surveys of archaeology as a discipline, indicate that such targeted recruitment of women is not necessary in a project such as this. With Fennell (UIUC) as the principal investigator for this project and grant proposal, most of the students will come from outside of the University of Illinois and they will be selected through a competitive application process that includes the focused recruitment efforts described above. Additional details concerning our plans for student recruitment are set out below.

Intellectual focus

Through the scientific analysis of archaeologically retrieved data, students in this REU project will discover that social group boundaries in any community are fluid and students will employ the techniques of archaeology to investigate how these boundaries have been transformed over time (McGuire 1982:161; Rodman 1992). In a place like New Philadelphia that developed as an interracial town, defining such boundaries becomes increasingly difficult since it appears to be a small community in which neighbors intermarried and residents supported and traded with each other. However, oral histories have indicated that the lifeways of town residents were impacted by racial tensions and social hierarchies of the surrounding region. Placing our archaeological work within the context of the changing meaning of race is essential for knowing how groups in this community became racially identified and how racial conflicts shape American society (see Delle et al. 2000; Omi and Winant 1994).

Most studies in African-American archaeology and material culture have dealt with the pre-emancipation era (Epperson 1999; Ferguson 1992; Kelso 1986; Singleton and Bograd 1995; Upton 1988; Vlach 1993). An archaeological study of New Philadelphia will allow students in the REU program the opportunity to examine the development of a pre-emancipation era community in which slavery was not practiced and a community that continued to exist into the twentieth century. New Philadelphia provides a unique case study since it survived as an integrated community for about a century. Anthropologist Mary Douglas (Douglas and Isherwood 1979) notes that on a periphery, such as a frontier setting, differences and deviation from the norm are often acceptable. But once those frontier settings are encompassed by a semi-periphery or core area, the material culture and behavior becomes standardized. The same may be true for the frontier context of New Philadelphia. The community developed as an integrated town from the 1830s, a circumstance that was not the norm in the core eastern establishment. But when the Illinois frontier closed, racism, a phenomenon found throughout antebellum America, set limits to the town's growth. Racism influenced the social and economic interactions between residents within the community as well as with residents outside of the town. It will be important for students to examine the archaeologically retrieved data and the social history of the town and look for variability in the archaeological record and see how the material culture may have changed as racism influenced the development and everyday lives of the inhabitants of New Philadelphia.

Understanding the role of consumerism and consumer behavior in a multiracial community will be a key issue for this study. Several scholars have examined how ideals of consumerism filtered into rural and frontier communities (Purser 1992; Schlereth 1989; McMurry 1988). Consumption practices varied across regional boundaries as well as through ethnic, class, and gendered groups. For example, a study by Mullins (1999) shows how members of an urban black community strategically participated in consumer society in ways that circumvented local racism and confronted class inequalities. An analysis of rural consumption by REU students in a place like New Philadelphia will reveal the complexities of how mass-produced products infiltrated this rural community and it will show how consumption patterns shifted as concepts of racism changed.

New Philadelphia grew as a multi-racial community surrounded by a region marked by racial strife and violence. Archaeological excavations at New Philadelphia will examine, among other things, the ways in which racism could have impacted the lifeways of town residents. With pro-slavery and abolitionist violence and riots occurring at locations nearby, one might expect that similar instances of violent events occurred within this town as well. However, excavations to date of several household and merchant locations within the town, dating from the 1850s through the late 1800s, show no evidence of riots or arson (Shackel et al. 2006). One might hypothesize that racial tensions within the town would lead to a pattern of segregated housing, with white and black residents occupying different portions of the town's space. Similarly, one might speculate that racial tensions would lead to assemblages of housewares and types of personal property that were distinct as between the homes of white and black residents. However, archaeological surveys and excavations to date show that houses and merchant sites associated with both black and white families were interspersed with one another and largely clustered in the north and central part of the town's platted space (Hargrave 2006; Shackel et al. 2006). The types of household belongings, such as ceramic housewares, are also similar across the residences of both whites and blacks (Shackel et al. 2006). These preliminary results are based on excavations of only a miniscule fraction of the overall space of this 42-acre town, however, and need to be tested with further archaeological investigations.

Many instances of the impacts of racism in the United States have occurred in more structural and indirect ways than in overt declarations of prejudice or in open acts of violence and malevolence (Leone et al. 2005; Omi and Winant 1994; Orser 2001). Such structural and indirect forms of racism have been conceptualized as manifestations of "aversive" racism, in which members of a dominant social group channel social and economic activities away from the members of a group targeted by racial prejudices.

This aversion of social and economic interactions and opportunities is often detrimental to the targeted group (e.g., Gaertner and Dovidio 1986; Kleinpenning and Hagendoorn 1993; Kovel 1970). Such aversive racism very likely led a regional railroad company to bypass New Philadelphia in 1869, resulting in correlating evidence of consequent population decline in the community over the following decades.

Organizational structure

Using GIS computer programs and analysis, the archaeology team has laid historic plats and maps over the current landscape in order to determine the boundaries of the project area for archaeological surveys (Beasley and Gwaltney 2003; Gwaltney 2004; Hargrave 2006). Research efforts using deeds, tax records, census data, and recorded oral histories have provided a detailed overview of the town's population of households, craftsmen, merchants, farmers, and laborers. Geophysical surveys and an aerial survey employing high-resolution thermal imaging will aid in identifying the exact locations of archaeological remains, features, and the ruins of structures below the surface. The likely occupants of each lot at different time periods can be determined and we are aware of the residents' ethnic and occupational backgrounds as reported in the census, as well as other related social information.

Since we can determine the ethnic and social backgrounds of the occupants of each town lot with a substantial degree of confidence, it will be possible to conduct scientific research concerning the different occupants by concentrating our research efforts on specific town lots. This lot-specific research will allow us to create a comparison of the faunal, botanical, and material culture remains of the different households. Therefore, we plan to divide the students into teams. Each team will develop a research design, retrieve archaeological data (material culture and archaeobiological remains), clean and catalog the materials, undertake data entry, and analyze artifacts and archaeobiological data from individual town lots. Therefore, all of the student teams will be responsible for the data retrieval and analysis of specific lots. Student teams will work closely in a mentorship environment with UIUC, DePaul, and ISM staff and other senior personnel in order to acquire the necessary skills to perform scientific research. Each student will "specialize" in one form of analysis and they will report on their findings at the end of the course. This information will allow students to work as a team to reconstruct the landscape and lifeways of residents of this historic town.

Time table

This REU project is proposed for 10 weeks, and it will be divided into three stages.

1) Introduction to the field methodology (Week 1).

The first week will be divided between the ISM's Research and Collections Center (RCC) in Springfield and the New Philadelphia site near Barry. At the RCC students will receive a project orientation and introduction to laboratory techniques and methods for analyzing historical material culture. On the first day Fennell, Martin, and Anna Agbe-Davies (DePaul University) will greet the students and provide an introduction to the project. They will provide an overview of the history of the site and the archaeology work that has been completed. They will discuss field methodology, site sampling strategies, and the project's data retrieval protocols. Students will receive a tour of the RCC laboratory and collection storage facilities from Martin and other museum staff.

Past speakers in the 2004-2006 NSF-REU program, including Gerald McWorter (Prof. Abdul Alkalimat of the University of Toledo and UIUC), Vibert White, Kamau Kemayo (UIS), and Charles Orser, Jr. (Illinois State University), will be requested to provide introductory talks on the dynamics of racism in American history and society. Paul Shackel will speak to the students about the history of the project and the significance of New Philadelphia. Descendants of the African American families who resided in New Philadelphia, including the McWorters and Butlers, will also be present to share their perspectives with

the students at the orientation and during the field and laboratory phases of the project, as will descendants of European-American residents of the town.

The orientation session will also include presentations from several ISM professionals and collaborating participants. Dr. Bonnie W. Styles, ISM Director, will present an overview of ISM's history and programs in education and research. Dr. Michael D. Wiant, ISM Curator of Anthropology and Director of the Dickson Mounds Museum, will discuss the extensive archaeological research that has been carried out in regard to American Indian populations in Illinois and in the Illinois River valley. Dr. Erich K. Schroeder, ISM Associate Curator of Information Technologies, will share his research on frontier settlement and demography in Illinois and demonstrate how he integrated nineteenth-century Land Office Records with GIS data sets. Mr. J. Terry Ransom, co-founder of the Illinois Underground Railroad Association, will introduce REU students to research on the Underground Railroad in Illinois.

REU students will also receive an orientation to historical documentary research. They will learn how to identify, acquire, and critically evaluate primary and secondary resources in order to develop a sense of the history of New Philadelphia and the surrounding regions. Historian Claire Fuller Martin, a Research Associate at ISM-RCC, will accompany REU students to the State archives in Springfield and the court archives in Pike County and guide them in the use of documentary resources.

At the end of the orientation, students will be divided into teams, and they will discuss which town lots they will excavate and analyze. Staff members will discuss the importance of research designs, and each team will develop a research design for their specific units of study.

Field work at the New Philadelphia site will begin during the first week. Michael Hargrave will conduct a geophysical survey of specific lots at the New Philadelphia site. Utilizing magnetic field gradient and electrical resistivity survey methods, Hargrave will demonstrate first hand to the REU students how a noninvasive subsurface approach can help field investigations be more efficient in the discovery of buried architectural structural remains, refuse pits, and fence lines (see Hargrave 2006; Hargrave et al. 2002). Subsurface anomalies will then be considered for ground testing by the field school students and the techniques evaluated for their successful application at the New Philadelphia site.

2) Excavation at New Philadelphia (Week 2-5).
Using archaeological survey data, the results of geophysical and aerial thermal surveys, and documentary evidence, students and supervising archaeologists will identify discrete concentrations of artifacts and likely structural remains within specific town lots. The historical research performed to date indicates how the town was settled and who owned and occupied each town lot. Combining these sets of data provides a focus for the continuing geophysical surveys. All of these data will provide the foundation for student team excavations. Students will work in teams of three or more and each team will excavate within a specific town lot under the supervision of Fennell, Martin, Agbe-Davies, and field assistants.

3) Laboratory work at the ISM-RCC (Weeks 6-10).
Each team will be responsible for the cleaning, labeling, identification, and computer entry of the materials recovered from their own town lot excavation. After this initial processing has been completed, students will then work as a team to analyze artifactual, archaeozoological, and archaeobotanical materials that they recovered. Each student will be responsible for presenting his or her research as part of a symposium at the end of the tenth week.

The time at the RCC will be divided between artifact processing and analyses, on the one hand, and scheduled exhibit tours and guest lectures. Tours of the State Museum will emphasize the interdisciplinary nature of modern museum exhibit design and provide students with information on the cultural and natural history of the region. At other times, ISM professionals and collaborating

participants will provide an overview of their respective fields of study. When the students come to the ISM-RCC after the field work, many of these professionals will mentor students as they analyze materials from the excavations. The professionals' expertise will provide an interdisciplinary focus for the field school along with personal guidance and instruction during the second five weeks of the project.

The following overviews will be presented by ISM professionals: Dr. Eric C. Grimm, ISM Curator and Chair of Botany, Head of the Quaternary Studies Program, will discuss climate changes in Illinois and the Midwest, how microscopic fossils are used to understand the past, and the implications of these findings for the Global Warming debate. Dr. Jeffrey J. Saunders, ISM Curator and Chair of Geology, and Dr. Chris Widga, Assistant Curator of Geology, will review Pleistocene fauna in Illinois and the Midwest, ice age extinctions, and the implications of paleontological research for our understanding of the first human inhabitants of the New World. Dr. Robert E. Warren, ISM Curator of Anthropology, will talk about zoogeographic and cultural implications of freshwater mussels in Illinois and the Midwest and how shells from archaeological and geological sites can be viewed as paleoenvironmental indicators. Ms. Dawn E. Cobb, ISM Research Associate in Human Osteology, will present a lecture on human osteology and how human remains reveal details about past lifeways. Ms. Marjorie B. Schroeder, ISM Research Associate in the Landscape History Program, will direct students on the analysis of plant remains from archaeological sites. Dr. Terrance J. Martin, ISM Curator and Chair of Anthropology, will direct students in analyzing the animal remains from the New Philadelphia site. Martin will also emphasize the curation of archaeological collections and ethical considerations of collections management.

Instructional commitment

UIUC, ISM, DePaul, UIS, UM, and NPA have already made extensive institutional and organizational commitments to the project. Christopher Fennell will provide overall coordination of the field project and development of student research projects. Anna Agbe-Davies will provide oversight in all aspects of the project. Vibert White and Paul Shackel, who began this research initiative of the New Philadelphia project, will continue to provide critical advice and guidance. Terrance Martin will assist with the field work component, coordinate laboratory activities at the ISM-RCC, supervise students in identifying and analyzing animal remains from New Philadelphia in the zooarchaeology laboratory, and introduce REU students to systematic museum collections and the ethics of archaeological collections management. This work will be conducted collaboratively with ISM staff members. Marjorie Schroeder will supervise students in flotation processing of standard volume soil samples from cultural features at the New Philadelphia site and the identification and interpretation of recovered plant remains. Robert Warren will assist students in identifying any freshwater mussel shells that may be encountered during the excavations. Although prehistoric materials are not the focus of the research at New Philadelphia, Michael Wiant will help students evaluate isolated prehistoric artifacts or intact prehistoric features that may be encountered. The collective expertise of the ISM's interdisciplinary staff provides a unique and special quality in that they strive to augment the institution's leadership on issues of diversity, cultural differences, environmental and social sustainability, and other social and environmental issues.

The NPA has worked extensively with the landowners of the property and they have received permission to perform archaeological work on the town site. They have also been instrumental in the past in coordinating needed logistical support for the project, and they have agreed to help coordinate these activities for the REU project. Students will stay at a lodge outside of Barry, Illinois, approximately 6 miles from the site, where they will receive food and lodging. Students will receive lodging at UIS housing facilities while stationed at the ISM-RCC.

B) Nature of Student Activities.

This archaeology project serves as an excellent opportunity for students to participate in many aspects of a scientific research program. Students will be divided into teams and they will work collaboratively on assigned town lots in New Philadelphia. Prior to excavations, and in consultation with faculty mentors,

each student will create a flexible research design and learn about the different sampling strategies used in archaeology. It is important that the students recognize that different forms of data retrieval are suited for different research questions.

Fieldwork and data retrieval

Our archaeological survey data includes extensive information obtained from systematic pedestrian and shovel test pit surveys as well as targeted geophysical surveys conducted in 2004-2006. Additional data will be obtained in the coming year through a low-altitude, aerial thermal survey of the entire town site. By incorporating and comparing these survey data sets through GIS overlays and analysis, we will continue to identify specific areas in the town site that contain discrete archaeological deposits. This information along with the collection of deed and census data provides the research team with a good idea about the general settlement of the town site and locations for excavation. New geophysical surveys performed by Michael Hargrave and the students will also provide additional data. During the five weeks of field work students will study these diverse data sets while they prepare a site for excavation, learn archaeological excavation methods, excavate according to stratigraphy (when appropriate), describe site sediments, collect archaeobotanical samples, perform note taking, take accurate measurements, creating scale drawings, learn field photography, and do mapping with a computerized laser transit (called a total station) and a highly accurate GPS locational device.

The fieldwork will be done using engineers scale since it is the most commonly used form of measurement in historical archaeology. The work will proceed in two steps. First, a form of systematic sampling using 5ft x 5ft excavation units will be used to retrieve data from the town lot. Once we get a good sense about feature locations and artifact densities, students will proceed with a large block excavation using multiple 5ft x 5ft excavation units. Since the area is mostly plowed, and cultural stratigraphy does not exist in plow zone, we expect these excavations to proceed quicker than those performed at sites with more complex stratigraphy. Features will be bisected and excavated according to stratigraphy, and the systematic collection of soil and sediment samples for flotation will be performed in order to retrieve archaeobiological data.

Lab work and analysis

The laboratory work and analysis will be performed at ISM-RCC with museum staff members serving as mentors (see attached commitment letter). As soon as students enter the lab, each team will be asked to revisit their research designs and see if they need to modify any of their research questions based on the materials collected or which they could not collect in the field. Each team will clean, label, and identify archaeologically retrieved data. This process will be followed by data entry. Students will also learn curation documentation standards and stabilization procedures for archaeobiological specimens. Mentors will show students how to process soil samples through a flotation device in order to recover archaeobotanical remains, small-scale animal remains, and very small artifacts such as glass beads. The plant remains will be sorted and identified under the direction of Marjorie Schroeder. Terrance Martin will assist REU students with the identification of animal remains and demonstrate various ways of categorizing anatomical elements as cultural entities (skeletal portions and butchering units), recognizing natural modifications (e.g., carnivore and rodent-gnawing) and cultural modifications (burning, sawed or chopped margins, and knife-cuts), and quantifying faunal assemblages in terms of specimen counts, minimum numbers of individuals, and biomass. Teams will also analyze ceramic and bottle glass in order to obtain a vessel count for another type of supporting data for food consumption. Each team member will become proficient in one form of analysis (faunal, macrofloral, material culture) and this work will be the basis for his or her final report and presentation.

While it is necessary that students participate in the initial data processing phases of the project it is also important that they participate in the higher-level analysis of the study in order to gain a well-rounded experience in the scientific and archaeological data analyses. At all times mentors will be involved in the

project in order to ensure that all work meets professional standards. The development of collegial relationships and interactions is an important part of the project. For 10 weeks students will work together in a collaborative fashion, using scientific methods to develop a research design, collect data, and analyze it. While we want to encourage a sense of team work, mentors will always be present showing students how to develop methods, analyze data, and think about the results of their work. We believe that the proposed plan will ensure the development of student-faculty interaction and student-student communication.

Presentation of information

At the end of the course student teams will make a public presentation of their results. ISM staff, members of the local archaeology community and the local press will be invited to a half-day symposium to listen to and discuss the results presented by each team member. The presentation will allow for the dissemination of new information as well as group assessment and critique of the work. This presentation will introduce students to public speaking and it will help them develop skills to communicate scientific results to a public audience. After this presentation and discussion, student teams will assess evaluations and create a strategy on how to best present this work to other audiences. Avenues of subsequent student publications include reports disseminated on our public internet sites, posters or research paper presentations at professional meetings, and work toward articles to be submitted to professional journals. Mentors will be available through the following year and able to assist students who wish to further enhance or expand upon their reports and presentations.

Other student activities

During the course students will visit several historic sites and museums in order to acquire a better understanding of the historical context of New Philadelphia. While working at New Philadelphia students will visit two sites. One site is Nauvoo, an early Mormon settlement (1839-1845) on the Mississippi River, situated about 90 miles north of New Philadelphia. The second site, Hannibal, is located 25 miles west of New Philadelphia. While associated with the life of Mark Twain, the city's historic exhibits also address issues of daily lifeways in a mid-nineteenth century river town that served as a marketplace for enslaved laborers until the end of the Civil War. There is also a strong connection between Pike County and Abraham Lincoln since he practiced law in the county courthouse. While the students are working at the ISM-RCC in Springfield they will visit Lincoln's New Salem State Historic Site, 20 miles north of the city. New Salem is an outdoor museum that provides interpretations of daily life on the Illinois frontier and it is a place where Lincoln once lived. These historic sites and museums all provide information about the Illinois frontier. However, they also furnish examples of how historic places and museums make choices in interpreting and presenting facets of the past to broad, public audiences. An examination and comparison of these methods will contribute to the student's understanding of interpreting the past to a wider audience.

Dickson Mounds Museum near Lewistown and the Cahokia Mounds State Historic Site near Collinsville are devoted to the late prehistoric American Indian Mississippian culture. Exhibits devoted to the Lewis and Clark Expedition are accessible to REU students at the Lewis and Clark Interpretive Center in Hartford, Illinois (near the location of their initial encampment at Camp River Dubois) and at the Museum of Westward Expansion located beneath the Gateway Arch in St. Louis (operated by the National Park Service). Also in St. Louis is the Old Courthouse, the oldest National Park Service area created because of its association with African-American heritage and the site of the Dred Scott Trial. The site also includes other exhibits celebrating the contributions of African Americans to the development of St. Louis.

C) The Research Environment.

Christopher Fennell has extensive teaching experience with undergraduate courses in the subjects of anthropology and archaeology, including intensive field schools in historical archaeology, and courses in

archaeological survey methods, landscape analysis, and cultural anthropology. At UIUC, he has received awards and recognition for excellence in teaching undergraduates. Fennell's research expertise includes theories and methods for regional analysis of rural settlement patterns and related issues of social and economic developments over time, studies in African diasporas in North America, and archaeological and historical analysis of African-American history. He served as a co-principal archaeologist of the NSF-REU program at New Philadelphia in 2004-2006 (Grant #0353550), and he has been the project director for archaeological excavations of rural farmstead site in Virginia, and a church and school house in the town of Harpers Ferry, West Virginia. Fennell is also a co-founder and the editor of the *Plymouth Colony Archive Project*, a public history internet project recognized as an "outstanding" resource by the National Endowment for the Humanities, in which he has edited and published articles authored by numerous undergraduate students. He is a co-founder and the editor of the *African Diaspora Archaeology Newsletter* (ADAN), which provides a focal point for archaeological studies of African diasporas. Fennell has edited and published articles by graduate students from the United States, Europe, and Africa in the ADAN, and actively solicits collaborative papers for publication by professionals, graduate students, and undergraduate students.

Terrance Martin has taught courses on North American prehistory and North American Indians for the last ten years as an adjunct professor at UIS. He has also supervised more than twenty museum interns from the UIS Applied Study Training program as well as Illinois College in Jacksonville. He served as mentor for two senior thesis projects by anthropology students from Illinois State University, and he has been on masters thesis committees for students at UIS, Southern Illinois University-Carbondale, and Western Michigan University. He regularly conducts zooarchaeology workshops for archaeology field schools including those sponsored by Illinois State University, University of Notre Dame, Western Michigan University, the Michigan State University Museum, the Chippewa Nature Center (Midland, Michigan), and the National Estate-Museum of Military History and Nature "Kulikovo Field" in Tula, Russia. Martin served as a co-principal archaeologist of the NSF-REU program at New Philadelphia in 2004-2006 (Grant #0353550), and he has presented research papers co-authored with undergraduate and masters students at the Midwest Archaeological Conference and the Annual Conference on Historical and Underwater Archaeology.

Anna Agbe-Davies is an Assistant Professor of Anthropology at DePaul University, where she teaches undergraduate courses, such as scientific techniques in archaeology, quantitative reasoning, the anthropology of race and gender, applied anthropology, and African diaspora archaeology, as well as a field school in archaeological methods. Her commitment to excellence in teaching is evident in her extensive community service in developing new techniques for effective teaching about the subjects of archaeology and African-American history to college and primary school students. She similarly has contributed to important efforts to improve educational environments and curricula through research and publications and as a member of the Diversity Initiatives Task Force of the Society for American Archaeology and as a member and former Chair of the Gender and Minority Affairs Committee of the Society for Historical Archaeology. Agbe-Davies also draws on her experience as an archaeologist for an outdoor history museum to provide students with hands-on learning opportunities in which they can interact directly with interested members of descendant and local communities. Her current research in the city of Chicago examines an early twentieth-century African-American community in that city, providing a very useful comparison with the data from New Philadelphia.

For Paul Shackel, the teacher/student experience must go beyond the classroom in order to make the student's learning experience enjoyable and profitable. Research opportunities allow for the development, growth, and professionalization of undergraduates. Undergraduates have been a big part of the UM archaeology research program. Shackel has taught several field schools, and several dozen students have worked with him on various projects with a cooperative agreement with the National Park Service, National Capital Region. Many students have used data from these projects to present papers

and posters at local and national professional meetings, and some have published articles in society newsletters and journals.

The ISM staff features 13 individuals with Ph.D.s, 13 with masters degrees, and 10 with bachelor degrees. Of the 16 state-funded curatorial staff in the art and science section of ISM, 14 have Ph.D.s or masters degrees. Many art and science section staff members serve as adjunct professors at area colleges and universities. Curators and administrative staff are members of professional organizations and are active as officers, committee members, and presenters at professional meetings. Staff present lectures, workshops, and special programs and are often invited to be speakers by universities, museums, and professional organizations in the U.S. and abroad. They also participate in state and local civic organizations pertaining to their areas of expertise.

The UIUC will provide a laser transit/total station and a GPS mapping device with sub-meter accuracy for this project. Screens, flotation machine, shovels, and other routine archaeological equipment that will be required for excavations will be provided by ISM, UIUC, and DePaul. Laboratory space for washing and analyzing the excavated materials will be available at the 97,000 sq. ft. RCC in Springfield. This facility provides a state-of-the-art environment to protect the Museum's vast collections and high quality research laboratories and offices for anthropology, botany, geology, and zoology. The RCC is a major research center and integral component of the ISM's educational and outreach programs. It also houses a scientific library, conference rooms, and Technology Learning Center (TLC). The TLC is used for teacher training, school programs, and public programs, and it uses technology to connect people with the ISM's collections.

D) Student Recruitment and Selection.

This REU project will target undergraduates at historically black colleges and universities nationwide. Such schools within the region include Chicago State University, Harris-Stowe State College, Lincoln University-Missouri, Kentucky State University, Central State University, Wilberforce University, Fisk University, Knoxville College, Lane College, Lemoyne-Owen College, Tuskegee University, and Tennessee State University. We will contact the administrators and faculty members in relevant programs and departments at historically black colleges and universities nationwide through targeted letters, personalized email, and telephone calls.

This REU project will also recruit from smaller, under-funded colleges in the area. New Philadelphia, in west central Illinois, is situated in one of the poorest regions in Illinois, and there is very little opportunity for local students to experience and participate in a large-scale project like the one being proposed. These schools include Illinois College, MacMurray College, Hannibal LaGrange College, Quincy University, and Western Illinois University.

Our goal over the three-year period is to have the majority of the REU undergraduates be students from these categories. Therefore, the majority of the students will be from outside of the UIUC and they will be selected through a competitive application process aided by focused recruitment efforts. We also understand that NSF-REU requires that students must be citizens or permanent residents of the United States or its possessions.

E) Project Evaluation and Reporting.

Materials submitted by students for evaluation by faculty mentors include a final research report. This report will detail the student's team research design, data collection, analysis, and interpretation as well as the student's specific research project. Part of the evaluation of each student's performance will also include individual research presentations. In addition to taking notes for their field and laboratory observations, students will also be expected to keep a journal. Students will keep a daily record of what they had observed during the day, and make notations about the decision making process.

The strengths and weaknesses of the project and course design will also be evaluated. Students will provide quantitative and qualitative assessments of the course at a mid-point and at the end of the ten-week period. They will be asked to evaluate the project design, curriculum, instructional organization, and the ways in which any of these elements can be improved within the time period of their own experience and also in subsequent years of the project (NSF 2002). These implementation and progress evaluations will help us analyze the success of the project in achieving its goals.

We will also work to evaluate the impact of the project on students and their ongoing engagement with interdisciplinary research in the sciences. We will mail follow-up questionnaires to students in each of the three years following their participation in the program, to obtain information on the career development of program alumni. Questionnaires will help to evaluate the impact of the program on student career trajectories and their continued interests in science or a science-related field.

F) Results from Prior NSF Support.

Shackel (as principal investigator) and Fennell and Martin (as co-principal archaeologists) were awarded an NSF-REU grant for three years of archaeological field school research, laboratory analysis, and instruction at the site in 2004-2006 (Grant #0353550). The program in 2004-2006 applied the same overall research objectives, organizational structure, intellectual focus, plan of student activities, student recruitment strategies, evaluations, and program schedule as described above for this current proposal. Based on the archaeological and documentary research conducted through this project under the earlier grant, the entire town site of New Philadelphia was added to the National Register of Historic Places as a nationally significant archaeological resource on August 11, 2005. New Philadelphia has also been the focus of a lesson plan published by the National Park Service's program of "Teaching with Historic Places" in 2006. Future REU students will benefit from the experience of contributing additional archaeological data that will assist in efforts to nominate the town site and related features of the landscape as a National Historic Landmark.

In our 2004-2006 NSF-REU program, our recruitment efforts were very successful in attracting students of diverse heritage backgrounds and students from small colleges and historically black universities and colleges to participate. Applications in the 2004-2006 period came from students at dozens of such colleges, and our enrolled students included numerous individuals of African-American, Native-American, Asian-American, Latin-American, and European-American heritage. Our enrolled students came from historically black colleges and universities (e.g., Tuskegee University and Lane College), small local schools (e.g., Quincy University and Hannibal-LaGrange College), and liberal arts colleges, at which such scientific research opportunities were not otherwise available. We received 30 to 50 applications for each summer's field school from students across the nation. Our enrolled undergraduate students came from colleges and residences in Alabama, Arkansas, California, Florida, Illinois, Indiana, Iowa, Louisiana, Massachusetts, Michigan, Minnesota, New York, Ohio, Puerto Rico, South Carolina, Tennessee, and Texas.

Each of the 27 students who participated in our program benefited greatly from the training and education they received. A few examples will illustrate such student successes, and many others could be provided. A student of African-American heritage from Tuskegee University concentrated her studies on African-American history, and followed up her work at New Philadelphia by applying to graduate programs in history. With the training she received in the NSF-REU program, and a supporting letter of reference from one of our co-principal archaeologists, she was admitted to Ohio State University's graduate program. A second student, of Latin-American heritage, followed the New Philadelphia program by making the town's history the subject of her participation in the Ronald E. McNair Scholars Program at her college. She traveled extensively as part of the McNair program, delivering talks and presentations on the significance of the New Philadelphia story in American history. Based on such successes, she has

since graduated and is now teaching social studies to grade school students. A third student made gender dynamics in New Philadelphia the subject of her senior honors thesis at Oberlin College, and graduated with honors. She performed so well in learning the intricacies of archaeological methods during the field school that she returned to serve as a team supervisor, and has since been hired by a professional archaeology firm. As a result of participating in our field school in 2004, a fourth student shifted her undergraduate focus to archaeology, and will begin graduate school in anthropology, with a focus on historical archaeology, in the Fall 2007 semester. A fifth student, of African-American heritage, has similarly benefitted from our field school experience and training and is now enrolled in a graduate school program in anthropology, with a focus on African diaspora subjects. A sixth student, of Asian-American heritage, has obtained employment with the Archaeological Institute of America while completing her undergraduate studies. As a seventh, and last example: another member of our past field schools, who is of African-American and Latin-American heritage, has since obtained employment in an archaeological laboratory and participated in an international scholars program examining archaeological sites in China. A number of our students also co-authored papers on New Philadelphia that have been presented at professional archaeological conferences.

We solicited student evaluations of the program at the end of each summer's field school, and were pleased to receive very favorable assessments and feedback. We implemented students' suggestions for ways to improve the field school. For example, students in the first summer suggested we email operational manuals directly to each enrolled student before the start of the field school, rather than distributing those documents during the orientation session. They also emphasized how much they valued the training they received in use of survey equipment, such as the total station, and they provided feedback on a speaker series we had organized. Numerous suggestions such as these helped us to further refine the field school program.

We have promptly published reports and underlying data obtained in the 2004-2006 program to a broad and diverse array of interested stakeholders and audiences, including professionals and students in archaeology, history, and African-American studies, descendant community members, and local community members. We have published these reports and extensive archaeological, geophysical, and documentary data sets through our public archaeology web sites, available at <http://www.anthro.uiuc.edu/faculty/cfennell/NP/> and <http://heritage.umd.edu/CHRSWeb/New%20Philadelphia/NewPhiladelphia.htm>. These publications and diverse data sets on our internet sites are being used by college instructors as undergraduate lesson plans for research methods in history, archaeology, and African-American studies. We have created these extensive internet resources for the use of other researchers, stakeholders, and broad public audiences in a way that significantly contributes to the available "cyberinfrastructure" of interdisciplinary research, a goal also strongly promoted by the NSF-REU program.

Our published reports and data compilations include: 2004 Archaeology Report; 2005 Archaeology Report; 2006 Archaeology Report; 2004-2006 Geophysics Survey Report; 2005 Shovel Test Survey Report; 2002-2003 Field Walkover Survey Report; Hadley Township Census Data; New Philadelphia Census Data; Deed Records of New Philadelphia; Report of Newspaper Archival Transcriptions; Report of Oral History Transcriptions; Hadley Township Tax Assessments for New Philadelphia; New Philadelphia National Register Nomination; and Maps, Surveys and Plats related to New Philadelphia. Members of our project have also published articles about archaeological investigations at New Philadelphia in the following publications (among others): *Illinois Antiquity*; the *Society for American Archaeology Record*; *Living Museum*; *Outdoors Illinois*; the *Society for Historical Archaeology Newsletter*; and the *African Diaspora Archaeology Newsletter*. In addition, the results of the New Philadelphia project have been presented through papers and posters at a number of professional archaeological conferences, including those of the Society for American Archaeology, Society for

Historical Archaeology, Midwest Archaeological Conference, and Illinois Archaeological Survey. A number of those papers were co-authored by undergraduate students who participated in the NSF-REU field schools, including studies entitled "Archaeozoology at New Philadelphia" and "Ethnic Identities and Consumption Patterns: A Minimum Vessel Count Analysis at New Philadelphia."

We are now working on publishing a collection of articles in a specially edited issue of a peer-review journal and are at work on other articles and books. Our findings and interpretations to date are currently scheduled to be published in an official monograph series reviewed and published by the Illinois State Museum. This publication series, entitled the *Illinois State Museum Reports of Investigations*, utilizes ISM and external peer reviewers, and has previously published studies by distinguished scientists such as Patty Jo Watson, Melvin Fowler, Jane Buikstra, and George Milner. In addition, we are submitting articles for a specially edited issue on New Philadelphia to *Historical Archaeology*, the peer-reviewed journal of the Society for Historical Archaeology.

The tremendously productive NSF-REU site program conducted at New Philadelphia in 2004-2006 received extensive news coverage across the nation. Articles published in the *Archaeology* Magazine, *Smithsonian* Magazine, *Associated Press*, *Chicago Tribune*, and *Los Angeles Times* reached combined readerships of millions of Americans. PBS, NPR, and network news programs broadcast television and radio coverage of this NSF-REU program to tens of thousands of viewers and listeners. The New Philadelphia site was also featured in the Illinois Archaeology Awareness Program's 2005 outreach campaign, with NSF-REU students and artifacts from New Philadelphia a focus of that program's promotional poster, entitled "Archaeology and African-American Heritage: Places on the Pathways of Freedom." As part of this Awareness program, thousands of copies of that poster were distributed to educational and heritage organizations throughout the region. Such public outreach efforts have dramatically increased many Americans' knowledge of the remarkable history of New Philadelphia and of the tremendous opportunities provided by such NSF-REU programs. Our professional publications have been complimented by a large number of popular publications and significant media attention for the project. This diversity of venues for the dissemination of research findings reflects the commitment of the participants to civically engaged archaeology and accountability.

We are applying for a second NSF-REU grant for three more years of research and hands-on learning for undergraduates at New Philadelphia in view of the remarkable success of the first grant-funded program, and because more research is needed to fully address the key research questions we are pursuing at this 42-acre site that held a community that existed for several decades. While our targeted surveying and excavation methods have proven highly successful, we have only excavated approximately 2,300 square feet of the town surface, which represents less than one percent of the town's spatial extent. Challenging research questions concerning the impacts of ethnic, racial, and market dynamics on household development and the social and economic relationships among town residents can best be addressed with increasingly robust data sets. By providing undergraduate students with three more years of training and education, we hope to compile larger data sets with which to address these research questions in the most complete manner we can, and also to further contribute to the overall success of the NSF-REU program.