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NCPTT Notes

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Partnerships: The Time for Action is Now

"Currently, the United States is losing its prehistoric and historic cultural resources at an alarming rate . . . ." This was a principal finding of the Office of Technology Assessment in a 1986 report. The echo of the 1986 OTA's finding is still heard in 2001. Too few fiscal and preservation professional resources are available to the National Center for Preservation Technology and Training and other preservation programs to stop the erosion of our nation's cultural resources. With each passing year, America's cultural resources are increasingly at risk by vandalism, looting, unplanned tourism, water and air pollution, public apathy, cultural illiteracy and population growth.

Lee H. Nelson Hall. NCPTT recently moved into its permanent home in the former Women's Gymnasium on the campus of Northwestern State University in Natchitoches, Louisiana. After an extensive rehabilitation, the Women's Gym was renamed for Lee H. Nelson, a pioneer in the field of historic preservation technology and a career NPS employee. Constructed in 1923 to provide gymnasium space for students of the Louisiana State Normal School, Nelson Hall is the oldest surviving building on the NSU campus. NCPTT will celebrate with a formal dedication in November.

...NCPTT is making efforts to expand its partnership base...

Strategic Partnerships. In a move to reverse this trend, NCPTT is making efforts to expand its partnership base. In seven years of operation, NCPTT has had numerous grantee partners and several other partners representing non-profit, corporate, federal, state, tribal, private, university, professional and international organizations. Northwestern State University and the National Trust have proven to be two of NCPTT's valued and long-term strategic partners. More such strategic partnerships must be established between NCPTT and other organizations for NCPTT to attain its goal of helping to preserve America's heritage through technology.

The Council for Excellence in Government. The Council for Excellence in Government was formed in 1983 in Washington, DC as a nonprofit organization. The Council has been the principal force behind the expanding e-Government movement and has served as a "convener, catalyst, and communicator" to promote strong leadership and management in the Federal government. It focuses on innovation and results – results that benefit the American public. The Council has brought together potential private sector partners to Federal programs to form cross-sector partnership alliances – alliances that the Council has begun to help NCPTT to create.

A recently signed cooperative agreement between NCPTT and the Council provides for collaboration that will bring potential strategic partners from both the private and public sectors to NCPTT. The cooperative roles of NCPTT and the Council are outlined in the agreement: convening workshops, seminars and conferences with potential partners to identify possible areas of collaboration; identifying potential partners from within the scientific and historic preservation communities; and developing specific

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Partnerships: The Time for Action is Now

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preservation and heritage education projects that incorporate effective leadership and management principles in their design and implementation.

Importantly, the NCPTT-Council cooperative agreement includes the added goal of improving existing NCPTT programs. Several of the Council's e-Fellows participants will evaluate NCPTT's current website and make recommendations for graphic design and content improvement. A team assembled by the council from private and public sectors will work with NCPTT to develop a distance learning program appropriate to delivering online courses for NCPTT's Louisiana Heritage Education Initiative and the Federal Preservation Institute. NCPTT will be invited by the Council to participate in their Tribal Technology Initiative and their Sustainable Development Extension projects.

Forging Productive Partnerships. For NCPTT the time to forge productive partnerships is now. We at NCPTT are excited about our evolving collaboration with the Council. We believe that our NCPTT-Council partnership will significantly expand our partnership base, help NCPTT to keep the public trust, and meet the formidable challenge of our mission: to use technology to serve the future of America's heritage for the benefit of preservation practitioners and for the American public.

Our New Contact Information!

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NCPTT Website to Undergo Redesign

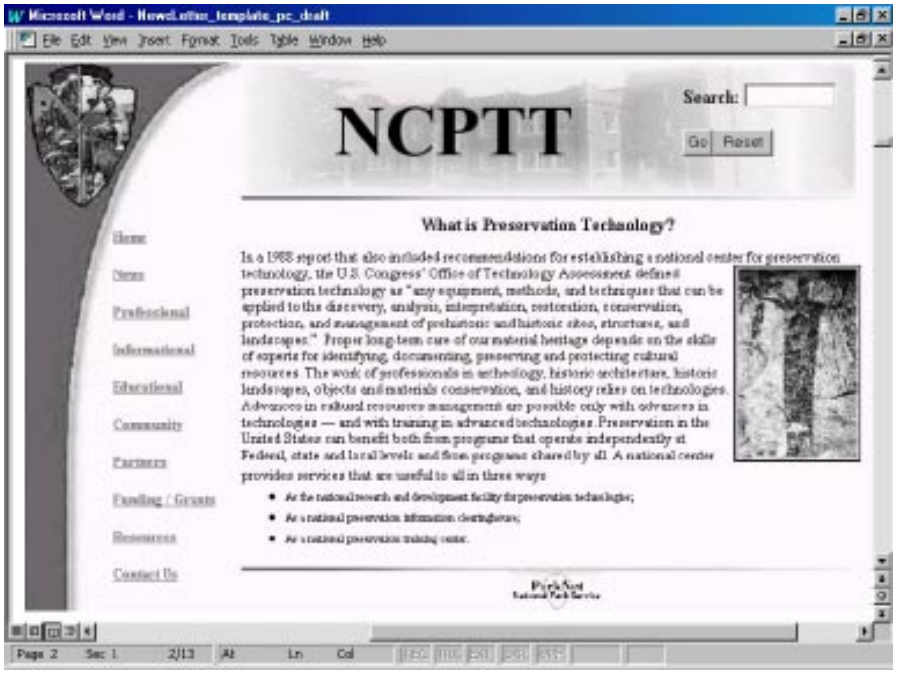
The NCPTT website plays a key role in efforts to disseminate information on technology-based research and ideas concerning preservation to both preservation professionals and the interested public. The current website was developed and launched in 1997. It was state-of-the-art for the time and designed to meet the needs of the Center. It incorporated many innovative ideas and offered useful resources and information.

As the fields of technology and research constantly evolve and new media tools become available for web development, users demand more information at a variety of different levels. NCPTT has hired a webmaster to update and develop its website to meet these ever-increasing demands. New technologies have been developed to provide users with informative content and an enjoyable web experience. New tools allow users to experience information, not simply read it. Incorporating such tools not only ensures that a user has obtained desired information, but also increases the likelihood of longer user sessions and return visits.

Focusing on enhancing navigability and enjoyment with newly available tools, as well as abiding by government regulations and standards, the webmaster will work to make the site accessible to a multiplicity of individual users with varying needs. The new site will have a fresh look and new

As the fields of technology and research constantly evolve and new media tools become available for web development, users demand more information at a variety of different levels.

One of the new website designs under consideration.



sub-sites dealing with education and information resources. The webmaster and design team at NCPTT are working on several variations and demos of the new site. Shown in this article is one example that is being considered.

Of primary importance in the redesign is aesthetic pleasure combined with logical, utilitarian construction and user-end navigation. The design team has been researching these areas for some time and has gathered necessary information to build the strongest site possible. Clearinghouse work will begin with taking the information currently available, placing it in a larger database, and compiling as much additional information as possible within same database structure.

The redesigned website will also contain new features focused on areas of special interest: **Community** will showcase local history and architecture. **Partners** will focus on joint ventures and partnerships. **Resources** will deal with various forms of functional media for users. These features and many others under development will make the NCPTT site a great web resource for preservation information and resources.

Major "rehabilitation" should be completed by late September or early October, and the site will be strengthened by a rigorous maintenance schedule. The new site will have a great deal more to offer and should be a benchmark for other government websites. Interested users will be able to locate the site at <www.ncptt.gov>. If there are any features or databases you or your organization may be looking for, please contact :

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NPS Junior Rangers

NCPTT is helping to educate the next generation of stewards of our cultural resources. As well as piloting its new Heritage Education Initiative, NCPTT hosted National Park Service Junior Rangers for a morning in late June, facilitating a comprehensive, hands-on tour of the Center. The ten Junior Rangers have been spending their summer developing skills and learning about their heritage through working at Cane River Creole National Historical Park and visiting sites weekly to learn about other natural and cultural resources in the surrounding areas.

For many of the highschool students, being a Junior Ranger has been their first job, as well as an opportunity for other new experiences. Working at the Oakland and Magnolia Plantations for eight weeks with a standard workday of eight and a half hours, they have been cleaning the main house, maintaining fencerows, gardening, and performing other roles necessary to running a historical park.

The Rangers considered their visit to NCPTT a highlight experience. During their visit, the Junior Rangers learned about all of the components of NCPTT and how the integration of these components is necessary to the preservation of America's Heritage. Beginning with an interview of the staff, the Junior Rangers learned that preservation requires a diverse knowledge base as the staff comes from educational backgrounds ranging the gamut of arts and sciences. Then, the Junior Rangers received a more in-depth tour of the facilities with activities corresponding to each component.

The Junior Rangers learned the intricate nature of documenting a building as the Historic American Buildings Survey team led the Rangers in doing field sketches of Nelson Hall. The Rangers' view of preservation was then expanded from single buildings to include overall urban design. Faced with a hypothetical situation of a rapidly increasing population, the Rangers acted as Natchitoches city planners and discussed methods to preserve historic areas and adaptive reuse strategies linked to environmental issues.

A tour of the lab facilities included a discussion of the Environmental Chamber, which simulates environmental conditions. The chamber is used to test the effects of such factors as pollution and weathering on materials, which aids in determining treatments for preservation. The Rangers also completed a rock identification exercise where they learned the importance of accuratly identifying materials so that effective preservation techniques may be employed.

The morning concluded with sessions on Information Management and Heritage Education. The Rangers wrote a collaborative press release on their experience as Junior Rangers and their tour of NCPTT, realizing that being Junior Rangers and getting information out to the public is part of being heritage educators and preserving our cultural heritage.

Louisiana Heritage Education Program

Three teachers working diligently on an exercise concerning early Native American cultures.

Sixteen teachers from Louisiana were recently selected to participate in the Heritage in the Classroom component of the Louisiana Heritage Education Program (LHEP). These highly motivated and enthusiastic fourth- and eighth-grade teachers were recommended by principals and supervisors as the best candidates for the program.

The Louisiana Heritage Education Program is the result of a partnership between NCPTT and Northwestern State University of Louisiana (NSU). The goals of the program are to enhance students' academic achievement, promote stewardship of Louisiana's historic sites, and serve as a national model for heritage education.

Toward achieving these goals, Heritage in the Classroom was developed to aid in the creation of curriculum-based lesson plans that use Louisiana cultural resources information as content. The fourth and eighth grades were targeted because the students in these grades participate in LEAP 21, Louisiana's new criterion-referenced testing program.

The sixteen teachers met for the initial workshop in June at NCPTT. Other partners in the program — the Cane River Creole National Historical Park, Louisiana Creole Heritage Center, Louisiana Office of State Parks, Louisiana Division of Archaeology, and Louisiana Division of Historic Preservation — and NCPTT provided printed and online cultural resources information as content for lesson plans. Teachers also reviewed criteria for a good lesson and evaluated existing online heritage education programs.

At the five-day Summer Institute, the teachers received even more information on those topics identified as historic places — historic structures, archeological sites, and cultural landscapes. At the start of the week, presentations on the three topics served as background information for the rest of the week's activities. A visit to the Louisiana Center for Educational Technology Region VI Teaching, Learning, and Technology Lab to explore educational software programs offered more resources for teachers.

On Tuesday they participated in a number of activities, including a brief lecture on the history of architecture in Louisiana, a walking tour of the historic district in Natchitoches and a review of local National Register sites. A presentation on Reading a Building provided other skills for teachers. A tour of NSU's Cammie G. Henry Research Center at Watson Library offered information on the resources in archives and the use of primary documents for researching history.

Archeology was the topic for Wednesday. Presentations on archeology, the prehistoric Conly Site, and Los Adaes State Historic Site provided much information on ethics, laws, tools, process and other aspects of archeology. A tour of Los Adaes added a hands-on element to the teachers' experience.

Thursday was devoted to cultural landscapes. The teachers toured the Cane River Creole National Historical Park properties — Oakland Plantation and Magnolia Plantation. Commentary on the cultural landscapes along Cane River Lake was provided during a driving tour of the area. Melrose Plantation was the final site visited.

Each day, the teachers worked on lesson plans. Divided into four groups, they worked toward creating a lesson based on what they learned during the week. On Friday, each group presented the lesson with each member presenting one aspect. The lesson topics included sculpture, classical vs.

Victorian architecture, a local historic house museum and the state capitol.

This creating and modeling of lessons presented an opportunity for the teachers to focus on procedure and content in an environment that offered subject matter support and many resources. The experience will aid them when they begin to work individually on their lesson plans.

Other workshops throughout the year will offer the 16 teachers an opportunity for interacting with others in the program. They will also have access to subject matter experts and education specialists. In September, Louisiana Department of Education staff will work with the teachers to assure that curriculum standards are addressed. Staff from NSU's College of Education will aid the teachers in the development of rubrics and other assessment tools. The February workshop will focus on assessing changes in students' knowledge and attitude. The June workshop will provide a forum for the evaluation of the Heritage in the Classroom component.

Another component of the Louisiana Heritage Education Program is the $2,500 Mini Grants program. Over 2,000 announcements were sent to the state's public and private schools. The deadline for the grant application is August 15, 2001. Approximately 20 selections will be made from the applications by September 5, 2001, with money going to the teachers by October 31, 2001. All of the grant projects must be completed during the 2001-2002 school term.

These grants will aid teachers in developing innovative, creative activities that enhance student appreciation of Louisiana's resources. Any fulltime, pre-K through 12 teacher in a Louisiana school system is eligible to apply. Projects are not limited to social studies classes; multi-subject and multi-grade activities are encouraged. Some ideas include researching the history of the school, a Kid's Register of Historic Sites in Louisiana, and a virtual tour of historic sites in a parish.

The third component of Louisiana Heritage Education Program involves incorporating heritage education into the education curriculum. NCPTT staff is collaborating with staff from NSU's Department of Social Sciences and College of Education to redesign social sciences and education courses.

The redesigned courses will contain information gathered through work with teachers in the other components of the Louisiana Heritage Education Program. By addressing students enrolled in education programs before they become teachers, the program will equip them with skills and knowledge before they reach the classroom.

The NCPTT began its work in heritage education by sponsoring a survey of state historic preservation offices and other statewide heritage organizations conducted by the Center for Historic Preservation at Middle Tennessee State University. The result was *Focus on 2000: A Heritage Education Perspective*. Published in 1997, this publication documented the history and status of heritage education in this country and provided planning guidelines and a state-by-state look at service and program providers.

Guided by the information produced from the survey, the NPS and NCPTT launched the national *Heritage Education Distance Learning Initiative* in the spring of 2000. The concept behind the initiative is the development of a model heritage education project using the evolving technologies in distance learning to reconnect children and citizens with history and sense of place. Louisiana was chosen as the location for the pilot program.

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Heritage Education Teachers visiting the Roque House.

NCPTT Welcomes New Staff

Professionals from across the United States and the world have joined NCPTT to pursue its mission. NCPTT is also hosting a HABS team that is documenting several buildings in and around Natchitoches, Louisiana
(see related story on page 6).

Fai Au comes to NCPTT through the Student Conservation Association. She is a native of New Orleans, where she graduated from Benjamin Franklin High School. Currently, Fai is a student at New York University and pursuing a bachelor of the arts in fine arts and mathematics. Fai is assisting with the Center's Heritage Education Program.

Kathryn Hallett is pursuing a master of arts degree in conservation science at the Royal College of Art in London, England. Kathryn is working with the Environmental and Materials Research Program on the NCPTT/Dupont Water Repellants study.

Rodney Harrison holds a B.S. degree in psychology, a M.Ed. in educational technology, and an Ed.S. in educational leadership and instruction. He has worked with various departments at Northwestern State University on computer and web development issues. Rodney's work at NCPTT centers on the continued development and maintenance of the NCPTT website.

Andrew Sanders is pursuing a bachelors of architecture degree at Louisiana Tech University. He received a 2001 excellence in design award and has received several awards for excellence in design studies. Andrew's work at NCPTT will focus on the development of a graphic identity for the center that will allow for greater community involvement and recognition.

Deig Sandoval holds a Ph. D. from the University of Arkansas at Fayetteville in chemistry and an M. Sc. in chemistry from Pittsburgh State University. Dr. Sandoval will be dedicating half of his time to research on effects of air pollutants on building materials at the NCPTT research facilities and the other half to teaching at Northwestern State University in the chemistry and physics department. Dr. Sandoval has taught at University of Texas - Pan American, Interamerican University of Puerto Rico and Simon Bolivar University in Caracas, Venezuela, and has published several papers in chemistry.

The Roque House is part of the Cane River National Heritage Area.

Cane River National Heritage Area

In 1994, Congress established the Cane River National Heritage Area in Natchitoches and Sabine parishes in Louisiana. The Heritage Area is a largely rural, agricultural landscape known both for its historic plantations and its multi-cultural heritage. Historically, the region is home to several cultures, including French, Spanish, African, American Indian and Creole.

The Heritage Area was established to preserve and promote the rich resources of the region, and to provide a cultural and historical context for Cane River Creole National Historical Park. The Park consists of two units located at Oakland and Magnolia Plantations in Natchitoches Parish. The Heritage Area encompasses roughly 45,000 acres along Cane River Lake. Its central corridor begins just south of the City of Natchitoches and extends along both sides of Cane River Lake for 35 miles. Along with the two park units, the Heritage Area includes seven National Historic Landmarks, three State Commemorative Areas and many historic plantations, homes and churches.

The Heritage Area's management entity is the Cane River National Heritage Area Commission. Nineteen commissioners appointed by the Secretary of the Interior represent an array of local and state organizations and institutions. Commission co-chairs are Robert B. DeBlieux and Saidee W. Newell.

The Cane River National Heritage Area Commission is pleased to be collaborating with the National Center for Preservation Technology and Training in several areas. The emphasis both organizations place on preservation and education makes them natural partners. The Commission hired a new executive director, Nancy I. M. Morgan, in February. Since Morgan began, she has been working with Dr. Robert Stearns, executive director of

NCPTT, and other members of the NCPTT staff to forge the direction the partnership will take.

The Commission particularly is excited about the work that NCPTT is doing in the field of heritage education. In April, Morgan met with the Heritage Education Coordinator, Sheila Richmond to discuss the Commission's role in the heritage education initiative introduced this year by NCPTT. Also, Morgan and Richmond attended a heritage education workshop sponsored by the Louisiana Preservation Alliance in June 2001. Other participants included representatives from the Center for Historic Preservation at Middle Tennessee State University, the Louisiana Division of Historic Preservation, and several educators from the region. Morgan anticipates that the Commission will work with area volunteer organizations and educators to facilitate the heritage education initiative on the local level.

In April, the NCPTT participated in a meeting of the Alliance of National Heritage Areas. Representatives from 19 of the 23 National Heritage Areas visited Natchitoches for the Alliance's annual spring meeting. During the meeting, held on the campus of Northwestern State University of Louisiana , Alliance representatives received a tour of Nelson Hall from architect Wayne Coco, Coco and Company, and Dr. Robert Stearns. In addition, Frances Gale, Training Directork, and Stearns spoke on the NCPTT's mission and potential funding opportunities at a lunch workshop during the three-day meeting. Stearns and Gale emphasized the fact that the historic preservation needs of the 23 National Heritage Areas could provide excellent testing ground for NCPTT programs.

Currently, NCPTT and the Commission are collaborating with the Historic American Building Survey (HABS) on a 12-week project concerning architectural resources in the Heritage Area. The $45,000 project is jointly funded by the Commission and HABS, and the International Council on Monuments and Sites is providing scholarships for two international team members. The architectural team's office is located on the top floor of Nelson Hall.

In addition to being the HABS team's home for the summer, Nelson Hall is the site of the project's opening and closing events. On June 4, members of the team were sworn in as federal employees for the summer. Stearns gave the opening address for the event, followed by remarks by Morgan; Paul Dolinsky, chief of HABS; and Laura Soullière, Cane River Creole National Historical Park superintendent. Soullière performed the swearing-in ceremony at the event, which was attended by representatives from NSU, the Commission, and the media. Stearns, Morgan, Dolinsky and Soullière are planning the HABS project's closing reception and exhibition, scheduled for August 22 in Lee Nelson Hall.

The offices of the Cane River National Heritage Area Commission are at #1 Rue Beau Port, Natchitoches, Louisiana. For more information, please contact:

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Historic American Building Survey Begins Cane River Documentation

NCPTT is playing host for 12 weeks this summer to a team of architects and historians working on a project for the Historic American Buildings Survey. The HABS team is in the Natchitoches area beginning the long-term project of the Cane River Survey, working within the Cane River National Heritage Area to develop a better knowledge of the structures within the Heritage Area. The project began with Blaine Cliver, Chief of HABS/HAER (Historic American Buildings Survey/ Historic American Engineering Record), who developed an interest in the area because of its wealth of unique cultural resources and strong community support for historic preservation. It was Cliver who suggested that HABS and the Cane River National Heritage Area Commission co-sponsor the 12-week project to document Heritage Area structures. The commission embraced the project as a way to record the Heritage Area's architectural history, and to bring national recognition to the region.

The project encompasses the documentation of a variety of local buildings important both for their architecture and for their local cultural significance. Included are the Texas and Pacific Railroad Depot in Natchitoches, an early 20th century station that is being proposed as a new African-American museum for the town; the Carrol Jones house, an early 19th century plantation house that has recently been listed on the National Register and is privately owned by a local family; a small slave cabin that represents a unique construction method, a type of building that rarely survives today; and the Marie-Therese Coin-coin house, the original home of the mother of Augustine Metoyer, the patriarch of the local Creole culture. The team will also be adding to the existing collection of HABS drawings of Oakland Plantation, part of the Cane River Creole National Historical Park, documenting a few of the many outbuildings that have not yet been a part of the HABS process.

These buildings are all being documented in the standard HABS method with a complete set of field sketches and measurements that are translated into drafted, scaled drawings. The final drawings of most buildings, including plans, elevation, sections and details, will be done by hand in ink on mylar, though the railroad station drawings will be produced on AutoCAD. The team's four architects are producing this work.

Serving as field supervisor and architect for the HABS team is **Caroline Wright**. Originally from Briggs, Texas, 40 miles north of Austin, Caroline graduated from Tulane University in New Orleans in May 2001. From the Tulane School of Architecture she earned a bachelor's degree in architecture with a Certificate of Preservation Studies and a minor in art history. This is Caroline's second HABS summer project; in the summer of 2000 she participated in the North Philadelphia Survey Project, documenting six significant buildings in a transitional neighborhood of the city. Caroline was chosen specifically for this project because of the relationship with Louisiana's architecture and culture she gained from studies at Tulane.

Edward Pillsbury comes to Natchitoches from Virginia Polytechnic Institute and State University, where he is working on a bachelor's of architecture degree. He is originally from Randolph, a small town in northern New Jersey. This is his first experience documenting historic structures, although he does have experience drafting both by hand and on computer.

The two remaining architects are both international interns who came through ICOMOS, the International Council on Monuments and Sites. HABS and ICOMOS have a long-standing tradition of bringing students and practitioners from around the world to the United States to participate on projects each summer.

Kati Maksay comes to NCPTT from the city of Cluj, in the Transylvanian region of Romania. After completing her studies in the Faculty of Architecture at the Technical University of Cluj

in 1999, Kati began working for both the SIT Architecture Studio and the Transylvania Trust Foundation, the regional organization for the protection and restoration of the built heritage of Transylvania. She participated in the documentation of historic structures in Torocko, Romania, and completed a special course for the conservation and restoration of architectural heritage and historical sites offered by the Catholic University of Leuven, Belgium. Kata was selected by US/ICOMOS to participate in the International Summer Exchange Program by working with the HABS team on the documentation of the Cane River Creole heritage.

Maciej Gruszecki is a third-year student at the Institute of Architecture and Urban Planning at the Technical University of Lodz, Poland. He has previously participated in the documentation of the 17th century Schloss Arenfels in Bad Hoenningen, Germany, and the 19th century wooden convalescent buildings in Kosov, Ukraine. He was selected by US/ICOMOS to participate in the HABS project in Natchitoches.

Along with the drawings, a history of many of these structures is being produced, with both descriptive information and the findings of archival research. The historian completing this work for the Cane River Survey is **Jon Wilson**. Jon earned his BA degree in early American history from Occidental College and his MA degree in southern history at the University of Mississippi. Starting this fall, Jon will be attending the Graduate School of Architecture, Planning, and Preservation at Columbia University, where he will study preservation and architecture. Last summer, Jon was the architectural historian on the HABS project at Graeme Park, a historic malt-house, in Horsham, Pennsylvania.

At the conclusion of the project, the drawings and histories, along with the photographs to be taken later by HABS's staff photographers, will be entered into the archives of the Library of Congress for public use. There is the hope in Natchitoches that this summer's project is just the beginning of a series of summer survey projects of the Cane River's important structures.

Caroline Wright sketching the Maison de Marie Therese.

Conservation of Electronic Media

Partially supported by NCPTT, the Electronic Media Group of the American Institute for Conservation held their annual session in Dallas, during the AIC Annual Meeting, June 2-3. Three themes structured the sessions: digital tools for the conservator, website preservation and file formats for text file preservation.

Digital Tools

Two NCPTT-funded projects were presented. John Burke, Head of Conservation Oakland, Museum and Webmaster for EMG rolled out the JAIC Online website, where all but the last two years of the AIC Journal are searchable and online at <http://aic.stanford.edu/jaic>. Tim Vitale Paper, Photography and Media Conservator, and Chair of EMG, presented the Albumen Website, <http://albumen.stanford.edu>, which is a conservation information resource tool, with science, technology, early literature, seminal texts, conservation treatment forum and gallery for albumen photography (1850-1890) online. The site was co-created with Paul Messier, Photography and Media Conservator, Boston Art Conservation and past Chair of EMG.

Website Preservation

Website preservation is easily the most complex and the newest preservation discipline. Unlike other fields of conservation, conservators have the opportunity, this time, to stay abreast of the artifact creation process alongside the development of its preservation. There are no best website preservation practices, and very few actual preservation efforts. Libraries and archives have been archiving website content, but preservation is still more hope and best guess, than proven technology.

Website content consists of files that are served to the client over the Internet. These files can be found, saved and then scheduled for preservation using standard file migration technologies. Website preservation is, however, much more. Software is needed to deliver and view web content. The server side software consists of the server, such as Apache or Microsoft NT Server; script interpreters for Perl, ASP, Java or PHP; and executable programs that are run from

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Lichen Encrustation of Rock Glyphs Poses a Conservation Dilemma

Petroglyphs and pictographs created on exposed rock surfaces by native peoples are particularly vulnerable to damage due to changes in the environment. NCPTT is supporting a collaborative study of one troubling aspect of conservation of rock glyphs (rock art) – growth of lichen over surfaces previously free from them. Conditions more suitable for lichen growth may be due to human activities that increase atmospheric contents of water and CO_2. Changes in lichen growth at several glyph sites in the United States have been observed.

Once lichen is established at a rock glyph site, the question for many site managers is whether to remove it. The decision to remove lichen is generally predicated on a desire to make the glyph images available for photographs so as to ensure a permanent record is available for research. Another reason is simply to provide better viewing for the visiting public. However, the prime consideration is to preserve rock glyph images, even if they are obscured by the lichen, in the hope that future technology will solve problems that we can not. In an effort to provide the conservation community and rock glyph site managers definitive information about the lichen removal question, we have undertaken research on the effects of lichen on rock surfaces found near rock glyph sites. Rock cores from lichen-encrusted and lichen-free areas in the vicinity of rock glyph sites on public and private lands throughout the central United States have been collected. These are being studied by scanning electron microscope imaging, chemical analysis and X-ray diffraction. This article summarizes the results of our studies at one site area in northeastern Wyoming.

The northeast Wyoming rock glyphs were created on friable, poorly consolidated Cretaceous sandstone. The fresh sandstone is cemented by illite and kaolinite. Over the course of thousands of years, the rock has weathered and developed a ~1mm thick crust that is cemented by a wide variety of mineral species. As is commonly the case in assemblages that form at ambient temperatures, the minerals are fine-grained and poorly crystalline. Chemical compositions have been obtained for this study by microanalysis of volumes of cement, though multiple grains are averaged. X-ray diffraction studies of the powdered rock yield little information beyond the presence of quartz.

The cementation is radically different in similar but lichen-encrusted surfaces, as established by microanalysis. We believe this is the result of the complex interaction of the lichen products with the rock surface. At this particular site, the original weathered rind has been destroyed and replaced by an assemblage of different chemical composition; but, as before, mineral grains are extremely small (<1mm) and the rock is volumetrically dominated by quartz.

Despite our current lack of knowledge of the mineralogic constitutions of these very different surfaces of the rock, some conclusions pertinent to rock glyph conservation can be made. The original weathered rind that was established in equilibrium with the ambient environment has been destroyed. This stabilized surface would have receded into the rock slowly, perhaps permitting preservation of the rock glyphs for thousand of years. What are the consequences of lichen growth on the surface of the substrate?

Crustate species of lichen, like those found at this site, grow on the surface of the rock, but they produce hyphae that, like roots, invade the substrate. The sandstone is a perfect medium as it has a large pore volume that allows the hyphae to penetrate several millimeters into the rock. Lichen produces an array of acids that attack or dissolve some minerals and chelate some ions that are transported back to the main body of the lichen thallus. Quartz grains are resilient; but the cement is more susceptible to attack. The lichen, therefore, de-consolidates the substrate but must simultaneously re-cement it or suffer the consequences of destroying the material it is using for a foundation. Those elements not required for its metabolism or that

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Effects of Acid Rain

Mary F. Striegel, NCPTT's Environmental and Materials Research Director, was an invited speaker at a 2-day conference on the effects of acid rain held in Washington, D.C., May 2-3, 2001. Mary addressed the state-of-knowledge on acid rain and cultural materials. She reviewed progress in the field and emphasized the permanence of alterations to outdoor sculpture, historic buildings, and significant monuments from exposure to air pollution.

Scientists and policymakers agreed that more must be done to address the problem of acid rain. The conference, organized by the Center for Environmental Information, brought together a wide range of stakeholders from 25 states and Canada, and covered an overview of the impacts of acid rain as well as policy discussions on how to best address the problem.

Senators Hilary Clinton and Charles E. Schumer called for stronger emission cuts and a bipartisan effort to address the acid rain problem.

Rep John Sweeney emphasized the importance of addressing the problem as a national issue.

Rep. Sherwood Boehlert chaired a hearing of the House Science Committee that took place in conjunction with the conference. Dr. Charles Driscoll of Syracuse University, who provided testimony at the hearing, reported the results of acid rain research published last month in the journal *BioScience*. According to Dr. Driscoll, sulfuric and nitric acid have acidified North American soils, lakes, and streams, stressing or killing terrestrial and aquatic plants and animals. "Despite marked reductions in sulfur deposition, present regulatory standards are insufficient for protection and recovery of sensitive ecosystems," said Driscoll.

Dr. James Galloway of the University of Virginia, told the conference, "It is critical that scientists and policymakers alike take seriously the 10-fold increase in nitrogen emissions that has occurred over the past century. We now know that each nitrogen molecule not only contributes to acid rain, but also adds to ground-level ozone, over-fertilization of ecosystems and climate change."

John Kinsman of the Edison Electric Institute noted that the electric utility industry is only part of the source of emissions that cause acid rain, but is the only one that is regulated to prevent these emissions. Despite the fact that electricity production is up, emissions from utilities have decreased.

The conference was co-sponsored by 54 federal and state agencies, national associations, organizations, companies, and research institutions. They include the U.S. Environmental Protection Agency, National Park Service, U.S. Fish and Wildlife Service, U.S. Geological Survey, Electric Power Research Institute (EPRI), Edison Electric Institute, American Gas Association, New York State Energy Research and Development Authority, American Fisheries Society, Ecological Society of America, American Lung Association, Resources for the Future, Adirondack Council, Environmental Defense, World Resources Institute, and the Department of Foreign Affairs and International Trade, Canada.

For more information, see <www.rochesterenvironment.org>

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exceed its requirements are, therefore, precipitated in a mineral zone at and below the lichen-substrate interface. A mineralized zone is thus created near the surface of the rock. This is not equivalent to the weathering rind og the rock. First, it has a different chemical and mineralogic composition. Second, it is a "cap"- beneath this layer is a layer of poorly consolidated sand stone, infiltrated by lichen hyphae
So what do these results tell us about conservation of lichen-encrusted rock glyphs? Physical removal of the lichen is likely to do one of two things:

1) Peel off the rock glyph layer with the lichen

2) Expose a lichen-mediated surface to abiogenic weathering with unknown (but suspected malign) consequences.

Once lichen has been established on a rock glyph, we are faced with equally undesirable alternatives. Based upon our study of samples from northeastern Wyoming, we do not recommend removal of the lichen at this particular site. At the moment we cannot recommend an alternative treatment, although methods to consolidate the hyphae-rich strata are under consideration. One benign alternative is to ascertain the conditions that are supporting lichen growth and to modify the microenvironment near the glyph images to slow the growth of lichen. The effects of such environment modifications would need to be evaluated against the consequences to other resources. The alternative of rock glyphs disappearing under lichen, however unappealing, may be a wiser choice for the time being.

This reaserch is being undertaken by Debra Dandridge who is pursuing her Ph.D. thru a joint progam with the University of Houston and Texas A&M, <ddandridge@tamu.edu>.

Preserving Stained Glass Windows

NCPTT, in collaboration with Enermodal Enginering, Inc. (Denver), has recently developed a computer software program (WINVENT) to calculate the temperature distribution across the center of a stained glass window with exterior protective glazing installed. The program models a typical protective glazing installation for a stained glass window under both unvented and vented conditions where a vertical channel is created along the entire length of the glazing system. Analysis of the data generated by WINVENT can be used to access the long-term impact of protective glazing on stained glass windows and associated structural supports.

Protective glazing

Protective glazing is a secondary layer of glass or plastic installed over the exterior of a stained glass window. Protective glazing has been promoted as an effective means of protecting stained glass windows against vandalism and severe weather and of improving thermal performance. Recently, however, concern has been expressed that it may be causing serious damage to many stained glass windows across the United States by increasing condensation and heat build-up in the air space and by preventing maintenance. This has led to recommendations to eliminate protective glazing when possible and, when necessary, to vent the airspace, preferably to the exterior, to encourage air circulation.

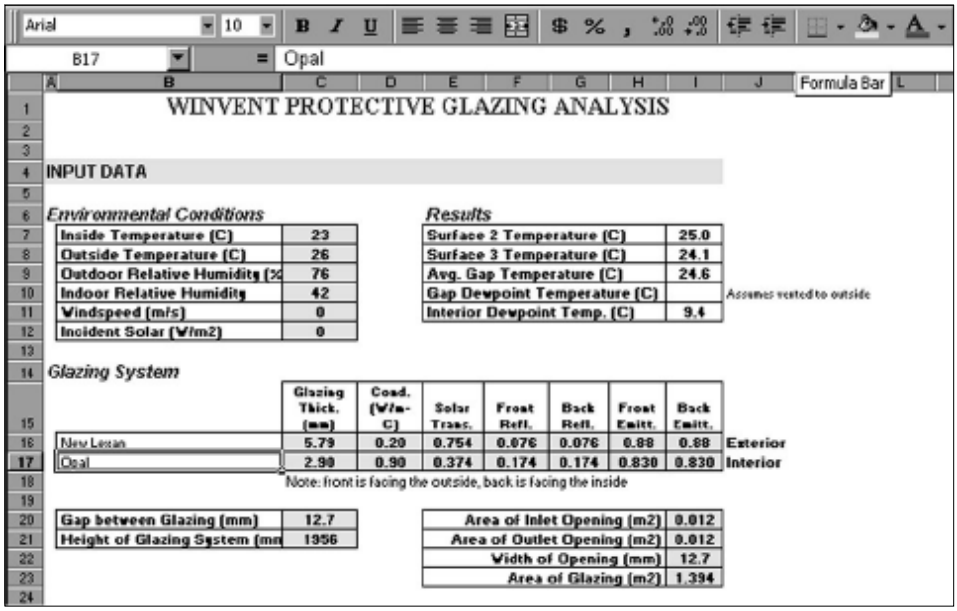
Until recently, few scientific studies have been conducted in the United States to assess the impact that protective glazing may have upon the long-term preservation of stained glass windows. Though much research has been conducted in Europe on this topic, it has focused primarily on moisture-related issues typically found in northern European climates. In Europe, the corrosion of unstable medieval stained glass windows is a significant problem. Atmospheric pollutants, microbial growth and condensation destroy the glass structure and damage the painted glass. The installation of protective glazing is a way of modifying the microclimate of the window that is constantly exposed to an aggressive environment.

In contrast, post-industrial (ca. 1850) stained glass made in the United States is extremely stable and resistant to corrosion. Condensation is primarily a problem because of its impact on wood members and painted surfaces. While regional climate and the use of air conditioning can impact venting choices, venting to the interior is often not a viable option for most American churches. The cost of remounting the stained glass window within the window frame to accommodate vents is prohibitively high. Venting, if adopted at all, is generally to the exterior.

WINVENT

In order to assess the impact of installing protective glazing on stained glass windows in churches in the United States, NCPTT has developed a Microsoft Excel® Spreadsheet (WINVENT) that calculates the temperature distribution across the center of a double-glazed window. The program incorporates a number of different convection correlations for the airspace (interspace) between the glazing layers in order to simulate vented and unvented conditions. The spreadsheet also allows the user to change the sky condition from clear to cloudy and to input different glass types, gap widths and glazing heights. In addition to calculating temperature distribution across the glazing layers, the spreadsheet also calculates the dewpoint temperature within the interspace created by the installation of protective glazing and predicts the appearance of condensation on different glazing surfaces.

In order to assess the impact of installing protective glazing on stained glass windows in churches in the United States, NCPTT has developed a Microsoft Excel® Spreadsheet (WINVENT) that calculates the temperature distribution across the center of a double-glazed window.



WINVENT PROTECTIVE GLAZING ANALYSIS

INPUT DATA

Environmental Conditions

Inside Temperature (C)	23
Outside Temperature (C)	26
Outdoor Relative Humidity (%	76
Indoor Relative Humidity	42
Windspeed (m/s)	0
Incident Solar (W/m2)	0

Results

Surface 2 Temperature (C)	25.0	
Surface 3 Temperature (C)	24.1	
Avg. Gap Temperature (C)	24.6	
Gap Dewpoint Temperature (C)		Assumes vented to outside
Interior Dewpoint Temp. (C)	9.4	

Glazing System

	Glazing Thick. (mm)	Cond. (W/m-C)	Solar Trans.	Front Refl.	Back Refl.	Front Emitt.	Back Emitt.	
New Lexan	5.79	0.20	0.754	0.076	0.076	0.88	0.88	Exterior
Opal	2.90	0.90	0.374	0.174	0.174	0.830	0.830	Interior

Note: front is facing the outside, back is facing the inside

Gap between Glazing (mm)	12.7
Height of Glazing System (mm	1956

Area of Inlet Opening (m2)	0.012
Area of Outlet Opening (m2)	0.012
Width of Opening (mm)	12.7
Area of Glazing (m2)	1.394

To evaluate the thermal performance of vented stained glass windows with protective glazing, WINVENT allows the user to select different convection correlations to represent air movement on the interior, on the exterior and between the glazing and glass under both unvented and externally vented conditions. The one-dimensional heat transfer analysis is performed by iteratively solving for the temperature distribution across the glazing system. The user inputs the indoor and outdoor air temperatures and relative humidities, incident solar radiation and outdoor wind speed.

WINVENT calculates the total solar transmittance, absorptance and reflectance of the glazing system from the average solar properties of the individual glazing samples. This approximation has a negligible impact on the results because neither the stained glass nor protective glazing is spectrally selective.

To verify WINVENT, data was collected in-situ from a single stained glass window with exterior protective glazing installed. The predicted temperature distribution across the different glazing layers was compared with measured data collected from the stained glass window with and without protective glazing. Data was collected under extremely hot and humid conditions known to promote condensation on cool glazing surfaces. Good agreement between model and the measurements was observed.

For information regarding WINVENT contact:
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Conservation of Electronic Media

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CGI calls. Some 3-5 years from now, the developing complexity and fast-paced evolution of hardware and the OS will render tomorrow's platforms incapable of running current server software, etc. Preservation will require protocols for preserving or emulating hardware and software. The client side of the website viewing process uses Netscape, Opera, Internet Explorer or other browsers to display the HTML code, interpret JavaScript and manage plugins. Flash, Shockwave, RealNetwork and QuickTime are common plugins that allow viewing of multimedia sites with Flash (spl and swf) and Shockwave (.dir, .dxr and .dcr) content. Historic browsers, plugins, consoles and etc., 10 years from now, will undoubtedly require hardware/OS emulations; their creators must be supported by the preservation community, now.

Benjamin Wile, Curator of Media Arts, San Francisco Museum of Modern Art; Jill Sterrett, Head of Conservation SFMOMA and EMG Program Chair; and Steve Dye, Media Technical Manager discussed SFMOMA's effort to begin the preservation of websites. Through a series of presentations by library and archives preservation professionals, SFMOMA has sought to learn their methodology. As a result SFMOMA developed a "from the ground up" methodology, through commissioning websites, so they will (1) have full rights to the content, (2) know how the sites were created technologically and (3) know how they are "served" to the clients.

Mona Jimenez Video and Media Archivist, Materia Media, Brooklyn, NY, reported on her work at Rhizome, an online community space for archiving and presenting contemporary art, providing forums for critical dialog and the preservation. Rhizome is pioneering web preservation efforts through its "ArtBase," which uses an acquisition database to documents art works, artist intent and their presentation environment. The documentation format is related to the video cataloging template developed by Jim Hubbard, and administered by Jimenez, for the IMAP (Independent Media Arts Preservation) organization and adds extensive artist-intent data fields, along with data and file preservation links.

The Website Preservation Panel, chaired by Paul Messier brought together many of the disparate themes into a few evolving truths. Conservators and Curators are sharing roles in electronic media preservation. Collecting by institutions — libraries, archives, graphic design [collections] and fine arts collections, varies by type and is based on needs being defined now. Website preservation is being seen as a spectrum of protocols with Brewster Kahle's Internet Archive backing up the full Internet every two months on one end; the hapless website creator who is saving work for their portfolio, somewhere in the middle; and institutions such as SFMOMA is investigating preservation of complex multimedia websites at the other end.

Two basic strategies are emerging "shoot it and stuff it" and the "game preserve." Shoot it and stuff it entails capturing what you can today through screen shots and downloads, so that there will be something in the future. The game preserve paradigm seeks to maximize the "habitat" of the historic website and perpetuate it through time. The collector's task is to sort through the mass of web material and interpret content while culling for future consideration. It is an unfortunate fact: if you don't collect today, it

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Conservation of Electronic Media

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won't be here tomorrow. There is no such thing as benign neglect for website preservation, which institutions have enjoyed for material culture. Conservators are brought in to make artifacts whole again; in the future, this won't be an option.

Text File Preservation

In the EMG Digital Discussion Group, several hands-on electronic media practitioners presented talks and a panel discussed preservation of electronic text files. The half-day discussion was begun by the session organizer, Tim Vitale, with an overview of text in a wide variety of format wrappers. Electronic text is a collection of alphanumeric characters and symbols. When viewed in a plain text editor such as EditPlus (not a word processor), all of the proprietary machine language added in the various file formats can be seen, along with the text. When preserving, text can be raw, as in files with the .txt extension, or held in proprietary formats such as .wpd, .doc, .rtf, or .pdf, which may not be accessible in the future.

John Burke provided an overview of XML (extensible markup language). Similar to HTML, both of which are subsets of SGML (standard generalized markup language), XML is much more powerful because the markup tags can be defined by the user through the use of a DTD (document type definition). Burke recommended, and it was agreed, that EMG will begin a Conservation DTD. XML-marked-up text is sent through a transform engine to be formatted for viewing. Marked-up content remains untouched and ready for transform into any other format, indefinitely. Browsers will soon read the XML the same way browsers read HTML today. XML text will be viable for several decades, if archived or saved.

Bob Futernick, Assistant Director of the Fine Arts Museums of San Francisco, discussed the creation of databases for collections management and administration. It became clear how databases hold information; add new value to existing content by adding new content with the same identifier, create data structure and, all the while, keep track of everything. The unformatted text blocks are associated with an identifier such as an accession number, data entry number or data object.

Mark McCormick-Goodhart, Wilhelm Imaging Research, presented and demonstrated the use of PDF (portable document format) for preserving text and image files. Rather than a proprietary structure that formats text or images, the PDF wrapper holds text and images in its original format, all within a super structure that provides security and structure (fonts, color profiles and metadata). Because PDF has become a tool in the prepress industry, it is assumed to be readable for many tens of years.

Walter Henry, media preservation coordinator at the Stanford Libraries, Webmaster for CoOL and participant in the JAIC Online and Albumen Website projects, compared text file format alternatives. PDF, XML, SGML and database (text block) were examined. It was shown that raw text and SGML-enabled text (HTML and XML) have great value because they can be repurposed as required. Formatted text files need data management for their preservation. Databases are "text" preservation tools because they hold unformatted text blocks and are designed to be functional (between different software and platforms), relational and migratable.

Tim Vitale, Chair EMG/AIC and Conservator in private practice, Emeryville and Oakland, CA, 510-594-8277 <tjvitale@ix.netcom.com>.

NCPTT Announces FY2001 PTTGrants Recipients

NCPTT is pleased to announce awards for the 2001 PTTGrants Program, which supports work in archeology, historic architecture, historic landscapes, objects and materials conservation, and interpretation. For the fiscal year 2001 PTTGrants program, proposals were requested in the following four project types —

PTTGrants type 1	Information management
PTTGrants type 2	Training and education
PTTGrants type 3	Research
PTTGrants type 4	Environmental effects

PTTGrants are awarded competitively. The total amount for new and returning grants for FY2001 is $441,684.

Information Management

Online Geographic Information Systems for Great House Archeological Sites in the Southwestern United States

Georgia State University Research Foundation, Inc., Atlanta, GA

$25,416

In the fall of 1999, the NPS and university partners sponsored a seminar that brought together archeologists who study the prehistoric great house architecture of the Southwestern United States. Each participant contributed to an extensive database representing the state of knowledge of these archeological features. The project team will develop this information into an internet-accessible Geographic Information System database. This project will benefit archeologists and other preservation specialists working with the Chacoan archeological record, and it will inform the public interested in these intriguing sites.

Developing Inter-Governmental Data Sharing between States and Tribes: New Mexico and the Pueblo of Zuni

Zuni Heritage and Historic Preservation Office; State of New Mexico, Office of Cultural Affairs, Santa Fe, NM

$29,416

As tribes obtain THPO status, their relationship with SHPOs regarding archeological data becomes important. This project will develop a model for data-sharing between SHPOs and THPOs and implement that model between New Mexico and the Pueblo of Zuni. This project will create a template for states and tribes regarding archeological data sharing.

Training & Education

Interpreting Archeology Ground Penetrating Radar Data: A Users Work Shop

USDA Forest Service, Southern Regional Office, Atlanta, GA

$19,531

Ground-penetrating radar is emerging as the non-invasive geophysical tool of choice by many archeologists and historic preservation researchers to discover and map archeological sites and historical features and artifacts. The technique is becoming popular because it is fast and accurate, and it can produce images of buried remains unlike those of any other geophysical method. Two workshops will be conducted to bring together investigators to explore imagery interpretation results and failures.

Historic American Landscape Survey: Development of a National Program

American Society of Landscape Architects, Washington, DC

$19,950

A Memorandum of Understanding has been established between the American Society of Landscape Architects, the National Park Service and the Library of Congress to support the recently established Historic American Landscapes Survey. To develop a strategic plan for HALS, three symposia will be held to engage experienced professionals from academia and private and public practice to discuss and implement two aspects: landscape documentation guidelines, and creating scopes of work for four types of HALS projects.

America's Cultural Heritage Underwater

Montana Public Television, Bozeman, MT

$40,000

Researchers will produce episodes 3 and 4 of the series America's Treasures Underwater, innovative programming dealing with America's underwater heritage for national PBS broadcast. The videos will strive to enhance protection and preservation of America's underwater cultural resources through raising public consciousness, and to preserve stock underwater videographic footage for future researchers, land managers and the American public.

Applied and Fundamental Research

The Powered Parachute as an Archaeological Aerial Reconnaissance Vehicle

Northwestern State University, Natchitoches, LA

$39,964

The powered parachute, a unique type of experimental aircraft, has the potential of providing a means of acquiring large-scale, high-resolution aerial images of archeological sites that is cost-effective and has unlimited geographic mobility. Digital photography, digital videography, and thermal imaging will be employed to evaluate the PPC's efficiency in acquiring archeological data. This project will provide the archeological community with a new research technique of enormous value, applicable in virtually any geographic setting.

Appraisal of the Usefulness on Integrated Geophysical Methods to Detect and Define Buried Structures Associated with Iron Furnace Plantations in Pennsylvania

Institute for Research and Community Service, Indiana University of Pennsylvania, Indiana, PA

$39,991

Researchers will test and compare the appropriateness of a variety of geophysical methods for the discovery and evaluation of buried structures associated with iron furnaces. High-resolution geophysical surveys using ground-penetrating radar, electrical resistivity, and magnetic gradiometry will be combined with archeological excavation on a single archeological test site. This is a significant new case study in archeological geophysics and has important implications for future investigations of similar sites.

Computer-based Methodologies for Investigating the History of Significant Cultural Landscapes

University of Vermont, Burlington, VT

$36,188

This project will assess the value of computer-based technologies, such as digital image processing, geographic information systems and global positioning systems, for reconstructing the history of cultural landscapes. These technologies will be used to identify extant landscape features and land use patterns from different time periods based on historical aerial photography, maps, surveys and recent satellite data.

Environmental Effects of Outdoor Pollutants on Cultural Resources

Suitability of Medical Chelating Agents for Stain Removal in Architectural and Art Conservation: Laboratory and Field Tests

San Francisco Museum of Art, San Francisco, CA

$39,863

The effectiveness of highly specific medicinal chelating agents will be compared to chelating agents commonly used to remove metallic stains from stone. Researchers will perform visual and chemical tests on (1) powdered calcium carbonate (2) limestone or marble samples and (3) buildings. These tests will inform the development of future conservation methods.

Preventive Conservation for the Practicing Conservator

Conservation Center, Institute of Fine Arts, New York University, New York, NY

$19,965

This project will lead to the publication of a textbook for conservators that provides a comprehensive overview of the principles and practices of preventive conservation. The book's foundation will be a compilation of a currently widespread body of information, followed by case studies and methodological examples.

Improved Sol-Gel Consolidants for Stone, Phase 3

Princeton University, Princeton, NJ

$43,800

The project team will develop new consolidants to correct two deficiencies of currently available materials: (1) cracking of the consolidant from dying shrinkage, and (2) poor match between the properties of the consolidant and those of the stone. Both goals will be achieved by using sol-gel processing to incorporate a concentrated suspension of colloidal oxide particles into a gelling matrix. The resulting materials are expected to provide better protection against deterioration by environmental effects.

Protection of Metallic Monuments from Biodeterioration, Phase 2

Harvard University, Cambridge, MA

$43,800

Coating materials used to prevent the corrosion of metallic monuments are susceptible to microbial attack. Researchers will test coatings for their ability to withstand microbial attack and investigate the use of biocides as a preventative ingredient in coatings. The ultimate goal of this research is to recommend biodegradation resistant coatings.

Development and Testing of Organic Coatings for the Protection of Outdoor Bronze Sculpture, Phase 3

North Dakota State University, Fargo, ND

$43,800

In this program, electrochemical characterization methods will be utilized to evaluate the corrosion protection provided by coatings under conditions that simulate exposure to atmospheric pollution. Researchers will also perform initial consideration of delivery techniques for the use of any new coatings compositions developed in this manner for field use.

National Park Service
U.S. Department of the Interior

National Center for Preservation Technology and Training
645 College Avenue
Natchitoches, Louisiana, 71457

EXPERIENCE YOUR AMERICA

United States Department of the Interior

The mission of the Department of the Interior is to protect and provide access to our Nation's natural and cultural heritage and honor our trust responsibilities to tribes.

National Park Service

The National Park Service preserves unimpaired the natural and cultural resources and values of the National Park System for the enjoyment, education and inspiration of this and future generations. The Service cooperates with partners to extend the benefits of natural and cultural resource conservation and outdoor recreation throughout this country and the world.

NCPTT

NCPTT promotes and enhances the preservation and conservation of prehistoric and historic resources in the United States for present and future generations through the advancement and dissemination of preservation technology and training.