



# NCPTT Notes

The Newsletter of the National Center for Preservation Technology and Training

## FPI: What's Your Responsibility to Preservation?

By Constance Ramirez

How can the National Park Service enhance training regarding historic preservation for federal agencies? Who is the audience? What are its needs? How should training be delivered? Where should we start? These were the questions to which Kate Stevenson, associate director of the National Park Service for cultural resource stewardship and partnerships, wanted answers.

She recognized that interagency training was perhaps the principal remaining mandate of the National Historic Preservation Act yet to be fulfilled. In the spring of 2000, she asked me to explore the potential for a significant new training initiative. Thanks to the generosity of the U.S. General Services Administration, I was detailed to the National Park Service to work on this.

As I prowled the halls of the federal agencies, seeking insights, guidance and ideas, I realized there was no historic preservation information on the walls or on the tables of the various offices where senior officials greeted

---

### ... Could it be that senior executives were unaware of the responsibilities given to every federal agency by the National Historic Preservation Act?

---

me. Posters and mugs and leaflets for saving energy, protecting endangered species, equal employment opportunities and alternative dispute resolution techniques were strewn around—yet nothing on historic places or the agencies' preservation responsibilities.



Connie Ramirez displays the FPI brochure at NCPTT's board meeting in November, 2001.

Could it be that senior executives were unaware of the responsibilities given to every federal agency by the National Historic Preservation Act? Could this be a reason why the Federal Preservation Officers have trouble getting funds for their agencies' historic preservation programs, for hiring staff and for integrating preservation requirements with their individual missions?

As I hopped from office to office for the 15-minute meetings, there was never time to talk in-depth about aspects of the National Historic Preservation Act, Section 110, Section 106, or any of the other passages of brilliant legislation. No one had time. In-depth conversations were to be held with the technical staff, since they already knew a great deal on the subject. And, indeed, that was true. Most agencies had at least one person in Washington who had extensive technical knowledge of archeology, historic buildings, adverse

(continued on page 2)

## Conference Series to Address Public Safety in Preservation

Life safety and making public places secure are now paramount issues facing the government and private sectors at all levels. On Jan. 22, 2002, the National Park Service, in cooperation with private and governmental partners, will present a conference focusing on how this environment will affect the historic character of America's cities and towns.

Titled "Balancing Public Safety and the Protection of Historic Places," the conference will include discussion on how to make public places as secure as possible while respecting the historic character of public buildings, structures, landscapes, transportation systems, neighborhoods, and parks. As the first in a series, this meeting will immediately precede the mid-winter U.S. Conference of Mayors meeting and will provide speakers, case studies, and breakout sessions to launch a national dialogue on meeting public safety needs while preserving irreplaceable historic resources.

Major issues expected to be discussed include risk assessment, lessons learned from experience, and commonsense approaches to sensitive protective measures. Speakers have been invited from New York, Washington D.C., the Pentagon, and experts in risk assessment, electronic surveillance,

(continued on page 11)

NCPTT Notes  
January 2002

Editor  
Mary Striegel

Copy Editors  
Lance Ellis  
Andy Ferrell  
Jeff Guin

Designer  
Jeff Guin

Contributors  
Kevin Ammons  
Paul Benson  
Andy Ferrell  
Robert Gilmore  
Deborah Long  
Sheila Richmond  
Mary Striegel  
Constance Ramirez  
Richard Walbauer

NCPTT Notes is published by the National Park Service's Center for Preservation Technology and Training. The mail list for NCPTT Notes is subject to request under the Freedom of Information Act. Persons of organizations not wanting to have mail list information disclosed should unsubscribe.

Send comments to NCPTT Notes or submit articles or notices for consideration to [ncptt@ncptt.nps.gov](mailto:ncptt@ncptt.nps.gov).

Copyright 2002 PTT Publications



National Park Service  
U.S. Department of the Interior

## FPI informs agencies of preservation responsibilities:

(continued from page 1)

effects, and even cultural landscapes.

After reporting my experiences to Kate Stevenson, she decided to establish the Federal Preservation Institute with five major components.

First, we wanted to stay in contact with our primary user group, the Federal Preservation Officers. We created the Federal Training Working Group as the forum to meet monthly to exchange information on important current issues, program developments, and training. A critical feature of each gathering is a short training presentation on a specific topic, such as emerging technologies beneficial to historic preservation. In the first year, 36 different agencies and six organizations, including the National Association of Tribal Historic Preservation Officers, the National Conference of State Historic Preservation Officers, and the National Trust for Historic Preservation were represented at these meetings.

Second, the Federal Training Working Group confirmed our experience that training is least available for senior executives, political appointees, and those engineers, foresters, lawyers and others who are collateral duty professionals. So we decided to make awareness for senior officials our first priority, and, through the collaborative efforts of 18 federal agencies, we produced a briefing brochure, *Historic Preservation: A Responsibility for Every Federal Agency*.

Third, we learned that no one has very much time for training and that the faster we can deliver the essential message, the more likely it will reach its audience. So we decided to develop a series of online "get smart quick" information sites. Rather than have these buried beyond the reach of Google, we entered into a partnership with George Mason University to develop an internet learning portal that is a semantic website connecting users to specific information that they need. The first topic for the "get smart quick" series is

consultation with Native Americans on cultural resource issues that we are developing in collaboration with Northwestern State University of Louisiana.

Fourth, we recognized that there are "hot topics" in preservation that spring up. Federal agencies need information and training that improve their responsiveness and can contribute to timely identification of sound alternatives in problem-solving. So, we are initiating a series of conferences in January 2002 on "Balancing Public Safety with Protection of Historic Buildings." The focus will be integrating protection of historic places into preparedness plans. Speakers from Congress, the Architect of the Capitol, federal agencies, and state and local leaders are participating in this dialog.

Fifth, and finally, we are identifying the specific historic preservation tasks common to Federal Preservation Officers and their staffs so that training in the necessary knowledge and skills can be obtained. We want to identify currently available training as well as ways to address training gaps. This work builds on previous interagency work at the National Park Service and will be available to all on our website in about a year.

Though the Federal Preservation Institute is brand new, we hope it is well on its way to respond to the mandates in the National Historic Preservation Act for the Secretary of the Interior and the National Park Service to take a leadership position in development of training for federal agencies. Through the work of Kate Stevenson, the Institute has been staffed, its needs integrated into the budget, and its programs are expanding. For more information, e-mail us at: [NPS\\_FPI@nps.gov](mailto:NPS_FPI@nps.gov).



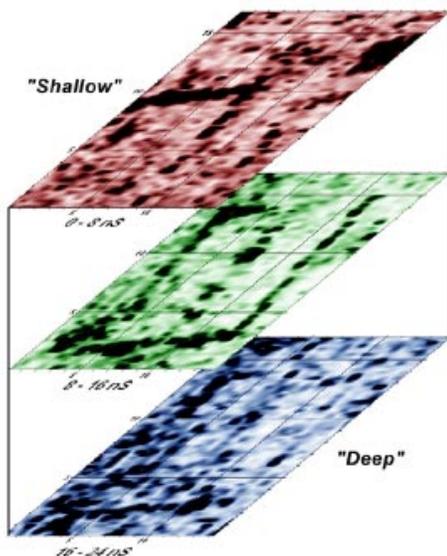
Constance Ramirez is director of the Federal Preservation Institute: (202) 343-9569 [constance\\_ramirez@nps.gov](mailto:constance_ramirez@nps.gov).

# What Lies Beneath: Workshops Focus on GPR

For many people, their introduction to the concept of ground penetrating radar came at the beginning of the movie, *Jurassic Park*, when scientists used pulses to locate and view the buried fossils of dinosaurs. But ground-penetrating radar is used in a wide variety of archeological and preservation-related applications as well.

In November 2001, the U.S. Department of Agriculture's Forest Service hosted the first of two user workshops on interpreting archeology ground penetrating radar data. The workshop was held at the University of Arkansas in Fayetteville, Arkansas. A 2001 PTTGrant made the workshops possible.

Ground penetrating radar is a tool for archeologists and historic preservation researchers to discover and map archeological sites, historical features, and artifacts. The technique is becoming popular because it is fast, accurate, and can produce images of buried remains.



This 3-D graphic represents the goal of the workshop: to produce plan views of the archeology at various depths below the surface. The data were collected during the workshop by the participants using GSSI equipment. They are from the historic Mount Comfort Church, 1840s-1863. Besides serving as a church, it was used as a school in the 1840s and a field hospital during the Civil War, during which it burned. Today, there is no surface evidence, though immediately below the surface lie the brick remnants of the historic foundation, detectable and mappable through GPR.



Kenneth L. Kvamme, workshop host from the University of Arkansas, Fayetteville, provides general instruction to participants.

**... Ground penetrating radar is a tool for archeologists and historic preservation researchers to discover and map archeological sites, historical features, and artifacts ...**

The focus of the workshop was hands-on interpretation of ground penetrating radar imagery. Participants collected data from a field test site and processed and imaged the data. Participants were required to have some previous experience in collecting ground penetrating radar data and in image processing.

Ken Kvamme, from the Department of Anthropology and Center for Advanced Spatial Technologies at the University of Arkansas, was the host of the workshop. Additional facilitators included Dan Delea (Geophysical Survey Systems, Inc., North Salem, NH), Larry Conyers (Department of Anthropology, University of Denver, Denver, CO) and Dean Goodman (Geophysical Archeometry Laboratory, University of Miami Japan Division, Japan).

The first day of the workshop included surveying and sampling strategies for collecting field data at historic Mount Comfort Church and Cemetery. Participants learned to setup grids, determine settings for filters, gain and



Photos courtesy of Ken Kvamme

Dan Delea, instructor from Geophysical Survey Systems, Inc., instructs University of Arkansas graduate student Jenny Bales in the use of the GSSI SIR-system 2000.

resolution, and reviewed potential problems and solutions associated with collecting data. In the afternoon they began processing and interpreting data. Participants learned techniques for background removal and cleaning up the data. In addition, they looked at data migration techniques.

The second and third days of the workshop focused on further data processing options and useful software packages, such as Quickdraw, GPR\_Slice, and GPR Sim. They also compared their results with other techniques such as electrical resistivity and magnetometry. To learn more about the workshop, visit <<http://www.uark.edu/depts/anthinfo/GPR-workshop.htm>>.

A second workshop is planned for spring 2002 and will be held at the University of Georgia, in Athens. Individuals interested in participating in the workshop may contact Dr. Kent Schneider, manager, Heritage Education Program with the USDA Forest Service, (404) 347-7250, e-mail: [kaschneider@fs.fed.us](mailto:kaschneider@fs.fed.us).

# Preservation Professionals Gather for Forum

By Andy Ferrell

Following the dedication of Lee H. Nelson Hall, NCPTT held a two-day forum, "Charting NCPTT's Role in Preserving America's Heritage in the 21<sup>st</sup> Century." Preservation professionals from across the United States came together for an informal town meeting with NCPTT leadership and staff to lay the groundwork for a business plan that will ensure the Center's future success.

Thirty-nine participants in the forum had an opportunity to voice their opinions in five facilitated sessions.

Topics within sessions included:

1. Technology and Historic Preservation in the 21<sup>st</sup> Century – What's Needed?
2. Who? What? Where? Technology and Research – Where Is It Happening?
3. Defining NCPTT's "Market Niche" – We Can't Do It All
4. A New Way of Doing Business – How Best Can NCPTT Serve Its Mission? and
5. Developing NCPTT's Business Plan: A Road Map for Preservation Technology in the 21<sup>st</sup> Century.

Over the past seven years, NCPTT has served the historic preservation community in several different ways: as a research and training facility, a clearinghouse for information on preservation technology, and a source of grant funding. Now, NCPTT is reflecting on the past with an eye toward refining the Center's evolving role in developing and delivering preservation technology to meet the needs of the preservation community in an ever-changing world.

Participants recognized that preservation is very different today than it was 50 years ago when Lee Nelson and a small group of professionals created the public policy that became the basis for the practice of historic preservation in America. The field is practiced in a wider, more inclusive context in the 21<sup>st</sup> century.

Following the National Historic Preservation Act of 1966, preservation moved away from historic house museums and toward historic districts and entire cultural landscapes. As preservation embraced a greater variety of buildings, landscapes and objects, a greater diversity of people embraced preserva-



Above: Mary Striegel, NCPTT materials research director, performs her demonstration "Fun With Microscopy" for forum guests. Below: Jim Judge, NCPTT board member, facilitates one of the forum discussions.

tion. In more recent times, preservation professionals are considering early 20th century buildings and problems inherent in their often-innovative building materials and systems.

Similarly, the digital revolution has had a tremendous impact on historic preservation. Greater numbers of people have access to the information superhighway and demand immediate access to preservation information in an understandable and easy-to-use format. Therefore, the efficient dissemination of preservation information is critical.

NCPTT's mission is to use technology to address the growing number and variety of preservation/conservation problems. Forum participants acknowledged the need for NCPTT to re-focus resources on the core business of preservation technology. All research, training, and information management projects, grants, publications, workshops and conferences are best used to support the development and/or application of technology for preservation. In addition, technologies must be developed to the point that they are ready for use by practicing preservationists and conservators.

While assisting the development of technologies is a critical function of NCPTT, the results of those efforts must be effectively communicated to be



meaningful. Forum participants discussed the potential for creating a centralized hub through NCPTT for preservation technology information. Drawing upon content from the forum discussion, NCPTT is currently reworking and updating its website to provide pertinent information in an intuitive, user-friendly format.



Andy Ferrell is public outreach coordinator at NCPTT: (318) 356-7444  
andy\_ferrell@ncptt.nps.gov

# Building Dedication Recognizes Legacy of Lee H. Nelson

By Kevin Ammons

On November 7, nearly 200 guests and dignitaries gathered on the south lawn of Lee Nelson Hall, in Natchitoches, Louisiana, for the building's formal dedication. Nelson Hall became home to NCPTT in June 2001 after a multi-million dollar renovation.

Named for a pioneering preservation architect in the National Park Service, the structure is the oldest building on Northwestern State University's campus and formerly served as the Women's Gymnasium.

Laura Soulliere, superintendent of the nearby Cane River Creole NHP, served as the event's emcee. Joining Soulliere in the ceremony were Rev. John Karle, Christ the King Lutheran Church; Randall Webb, NSU President; Katherine Stevenson, NPS associate director for cultural resources stewardship and partnerships; Robert Collins, Louisiana deputy state historic preservation officer; Wayne McCullen, Natchitoches mayor; Neville Agnew, PTT board chair; Robert Melnick, dean of the School of Architecture and Allied Arts at University of Oregon; Chief Rufus Davis, Caddo-Adai Tribe; and Lois Nelson, wife of the late Lee Nelson.

While Robert Melnick's keynote address dealt with Nelson's life work in the field of preservation, others remembered him as a friend, and colleague. All agreed that Nelson would have been proud to know that his long-standing idea for a national center devoted to preservation technology had finally come to fruition in a historic building.

After the formal ribbon cutting, dedication participants were invited to attend several tours highlighting the rehabilitation of Lee Nelson Hall and the work of NCPTT. Wayne Coco, AIA, project architect for the rehabilitation of Lee Nelson Hall, presented a slide presentation on the building project. Mary Carroll, NCPTT information management director, demonstrated the Clearinghouse portion of the NCPTT website. Mary Striegel, NCPTT materials research director, made a presentation on microscopy in

one of NCPTT's labs while ElizaBeth Bede, NCPTT Dupont fellow, demonstrated the environmental chamber in another lab. The final presentation was a laser cleaning demonstration by Meg Abraham of the Los Angeles County Museum of Art.

Events began on November 6, 2001 with a cocktail buffet at Nelson Hall. After the buffet guests were treated with a concert gala celebrating America sponsored by NSU's Creative and Performing Arts Department.



Kevin Ammons is program analyst for NCPTT: (318) 356-7444 kevin\_ammons@ncptt.nps.gov



Lois Nelson (center) cuts the ceremonial ribbon along with NSU's Randy Webb and NPS's Kate Stevenson.

## Transcript of Lois Nelson's Remarks, Nov. 7, 2001

Honored guests and friends. On behalf of my family, we thank everyone for coming to this dedication. It is a great honor and privilege for our family to be here.

The germ of an idea born about 35 years ago in Philadelphia has actually happened. Lee's idea for a national preservation technology center was nurtured and brought forth periodically during the 1970's and 80's, never quite getting past the talking stage.

In 1992, Congress provided for the creation of such a center with support by Senator Johnston. With the help of Northwestern State University of Louisiana past President Robert Alost and current President Randy Webb, National Park Service people such as Blaine Cliver, John Robbins, Pat Tiller and others, the idea was brought to fruition and now has a permanent home in this historic building.

It is most fitting that the National Center for Preservation Technology and Training finds itself in a historic structure and it's certainly a use of the building that would have made Lee proud and happy.

Technology and training are almost synonymous for Lee and his interests. He had envisioned a career in the teaching field, but he was fascinated by technology, especially innovative treatments for historic structures using new materials. Fortunately for preservation, he was able



to pursue both interests throughout his career.

As more architects became interested in entering the historic preservation field, it became important for them to receive the necessary training to build skills needed in the care and treatment of historic structures. He felt that a center dedicated to historic building technology and research could find answers

to the preservation problems architects face. In the meantime, he put his efforts into educating those architects and the public about historic preservation. This was accomplished through the development of the "Secretary of the Interior's Standards for Historic Preservation Projects," the "Preservation Briefs" series, the "TechNotes" series and many other articles and papers. He was a mentor to his staff and encouraged them to research a topic, write about it and share it with others.

Our family is very pleased that you have honored Lee's contributions through the rehabilitation and renaming of this historic building. It is our hope that Lee's dream for the center and his written efforts will inspire those who work in this place as they endeavor to find new ways to preserve historic structures and to share that information with others.

Thank you all very much.

## Spray Finishing Workshop Scheduled

DeVilbiss and Binks Spray Products has partnered with Owens Community College to present a Spray Finishing Technology Workshop. This three-day intensive training program is scheduled for Feb. 20-22, 2002, in Toledo, Ohio. Classes meet from 8:30 a.m. to 4 p.m. daily and include both classroom and hands-on sessions. Two continuing education units will be awarded. Attendees should be involved with industrial, contractor, or maintenance spray finishing applications, or spray equipment sales and distribution. Topics for the Spray Finishing Technology Workshop include:

- Equipment types and selection
- Equipment set-up, operation, and maintenance
- Surface preparation and defect analysis
- Material selection
- Safety and regulatory concerns

To register, contact the Owens Community College Center for Development and Training, toll-free at (800) 466-9367 ext. 7357. For additional information please contact Dr. Richard A. Kruppa, workshop coordinator, by e-mail at [sprayworkshop@netscape.net](mailto:sprayworkshop@netscape.net) or by phone at (603) 778-2481. Information is also available online at [www.owens.cc.oh.us/CDT](http://www.owens.cc.oh.us/CDT)

DeVilbiss and Binks pioneered the development of spray finishing equipment more than 100 years ago and continue to refine and improve processes for spray finishing. The Center for Development and Training at Owens Community College is dedicated to partnering with industry to provide focused education and training programs for traditional and non-traditional students.

## Schools Get a New Lease on Life

One of the keys to relieving America's overcrowded and crumbling schools already exists in communities around the country. Two respected organizations are recommending that communities renovate historic schools in their area for additional space rather than rely entirely on new construction.

The Council of Educational Facility Planners International (CEFPI) and NCPTT aim to place the choice of renovating historic neighborhood schools on the same level as new construction in the decision process that deals with issues of capacity and conditions of school buildings.

"Innovation and renovation can go hand-in-hand when modern practices in construction and technology are used in these rehabilitation projects," said Regie Teague, CEFPI president.

---

**"Innovation and renovation can go hand-in-hand when modern practices in construction and technology are used in these rehabilitation projects."**

---

"Historic schools are not only valued landmarks but also community anchors around which neighborhoods and young people grow," says Mark Gilberg, NCPTT's applied research and technology transfer director.

A cooperative agreement between CEFPI and NCPTT has been forged to share the knowledge and influence of

Located in the historic center of Winchester, Massachusetts, this 25,000 square foot addition to the historic McCall Middle School reflects the neo-classical appearance of the original building.

The new space, designed by HMFH Architects, Inc., Cambridge, MA, provides students with a brand new library/media center, eight new classrooms, and four science rooms.

McCall Middle School was awarded the Project of Distinction Award at the recent Council of Educational Facility Planners International conference in Denver, CO.

each organization. As stated in the cooperative agreement, "Historic neighborhood schools have touched the lives of millions of Americans, yet these treasured icons and community institutions are being abandoned, demolished, and replaced at an alarming rate. These national landmarks are disappearing along with the surrounding community where neighborhoods and young people grow."

CEFPI and NCPTT will collaborate to author, edit and publish a revised version of the *Appraisal Guide*, incorporating case studies on the rehabilitation of historic schools as an instrument for appraising historic school facilities. These two organizations, each regarded as an authoritative organization in its field, are working together to share their expertise in order to improve educational opportunities for students.

NCPTT will provide technical information on the rehabilitation (renovation, alteration and conversion) of historic schools, including assessments, in the following areas: structural soundness, operational and maintenance efficiency, conditions of mechanical systems, and compliance with safety codes and accessibility.

The trend of building shopping mall-sized schools outside towns alienates students, encourages sprawl and weakens the sense of community. CEFPI and NCPTT are asking schools and towns to look at existing resources, and are offering recommendations to do so in the most practical way.



Photo by Anton Grassl

# Heritage Education Partners for Learning

By Sheila Richmond

Two goals of the Louisiana Heritage Education Program (LHEP) are to enhance education and to instill a sense of stewardship in students. Toward accomplishing these goals, within the past year, LHEP has conducted workshops for teachers, sponsored a Mini Grants program for teachers, aided in the redesign of a college-level course, and begun the development of a heritage education website. None of these endeavors would have been possible without our partners.

Northwestern State University of Louisiana (NSU), on whose campus NCPTT is located, has proven to be a most valuable resource. For workshops for the teachers, NSU provided meeting rooms and opened computer labs for teachers to use. Staff at the Cammie G. Henry Research Center provided a tutorial on using archives. The Louisiana Creole Heritage Center, Regional

---

**... LHEP has conducted workshops for teachers, aided in the redesign of a college-level course, and begun the development of a heritage education website.**

---

Folklorist Program, and Department of Social Sciences provided material and staff for a tour of the Cane River area. Archeologists from Department of Social Sciences provided materials, presentations, and a site visit. Both the Education Technology and Electronic Learning departments provided guidance for the development of the website. Staff at the College of Education presented workshops, aided teachers in developing lesson plans and assessments, and are working on the redesign of courses.

The Louisiana Department of Education has also been a prominent contributor to LHEP. Staff have helped to conduct workshops, provided printed and online resources for teachers, and have aided teachers in the ap-



Jonathan Fricker (left), deputy state historic preservation officer, and Laura Soulliere (right), superintendent of Cane River Creole National Historical Park, are among the partners who help make Louisiana Heritage Education a reality.

plication of curriculum standards and the development of assessments. The Louisiana Center for Educational Technology has offered guidance for lesson development and online presentation. The Region VI Service Center provided their lab and a brief tutorial in INTECH (INtegrating TECHNOlogy in the Student-Centered Classroom). Even schools around the state have in some aspect partnered with LHEP by allowing their teachers to participate in the program.

In the preservation community, several state agencies have been most helpful. The State Historic Preservation Office, combined with the Office of Cultural Development (OCD), has provided printed material and presentations for workshops and online resources. Administrative duties for the LHEP Mini Grants program are provided by the Division of Archeology, OCD. The Louisiana Office of State Parks also provided material and allowed site visits during the summer institute for teachers. The Louisiana Preservation Alliance, a National Trust statewide program, provided scholarships for teachers to their workshop and has disseminated LHEP informa-

tion. The nearby Cane River Creole National Historical Park, a national park and valuable resource, provided material, presentations, and site visits.

Although some of these partnerships are of a formal nature with proper paperwork and signatures, most are informal, cooperative endeavors, fueled by the shared vision of heritage education. All provide guidance and advice when asked, materials and resources when needed, and a network of information not matched by any single organization.



Sheila Richmond is heritage education coordinator at NCPTT: (318) 356-7444  
sheila\_richmond@ncptt.nps.gov

# How to Keep Your Silver Sterling

By Deborah Long  
*Objects Conservator  
Gerald R. Ford Conservation Center  
Nebraska State Historical Society*

In the course of caring for silver objects on display in the home, one recognizes the necessity to do more than simply provide preventive care measures. Objects that have been damaged, mis-handled, or have become tarnished often do not accurately reflect the appearance originally intended by the artist or maker. Procedures discussed in this article are for decorative silver objects that are on display and/or in use in the home. They are not appropriate for ethnographic or archeological materials.

While the procedures listed below are sometimes necessary, they should not be undertaken lightly, because permanent damage to an object could result from their misapplication. Consult a conservator in order to assess all the issues relating to the care of the specific object in question.

## Examine The Object

The structural integrity of your object is of paramount importance due to the amount of handling required by these procedures. Periodically, it is prudent to examine an item that is still in use to make sure it can safely withstand the stress associated with use. Look for cracks, weak areas, old repairs, and loose or missing parts. Once you have thoroughly examined the structural condition, consider the surface of the object.

---

## ... When examining the surface, to determine if there is an original surface coating ...

---

When examining the surface, determine if there is an original surface coating. In some cases this is simple. Other coatings, however, may not be so easily seen. An important type of decorative and protective surface often applied to silver alloy objects is patina. A patina is a thin chemically induced layer of rela-



Photos courtesy of Deborah Long

Terry Weisser and Chandra Reedy learn how to clean silver at a workshop sponsored by NCPPT at the Gerald R. Ford Conservation Center in Omaha, Nebraska.

tively stable corrosion on the surface of an object.

Another type of coating sometimes found on silver is a gold layer over part of the object. This coating is variously called parcel gilt, vermeil, or gold wash. This type of surface is extremely thin and very easily damaged or lost. Aggressive cleaning and polishing techniques can cause it to be lost entirely.

If the object is determined to be structurally sound, proceed with caution. Materials and techniques used should be extremely gentle to avoid causing unnecessary deterioration. Avoid the use of commercial polishes, as many contain corrosive chemicals such as ammonia or harsh abrasives that can permanently damage delicate surfaces.

The materials and techniques listed below have been tested by conservators and found to be safe and effective when used in a careful and sensitive manner.

## Preparation

Provide a clean, well-ventilated work area for the cleaning process, including a padded work surface, adequate light, and sufficient ventilation to remove fumes. Place a clean piece of cotton flannel, soft muslin or other soft cotton

on the table as a work surface. Wear a clean white cotton smock or apron to protect your clothing. Use thin films of clear polyethylene to mask out any nonmetallic elements, such as wooden or ivory handles, to protect them during cleaning.

## Cleaning

Remove any loose dirt or dust by dusting lightly with a soft brush. Do not use dusting cloths as they will not reach into small crevices, and can scratch objects if trapped grit is rubbed over surfaces. Be very careful not to scratch the surface of your object.

Old polish residues trapped in recessed areas are a common problem found when cleaning silver. Many commercial polishes contain waxy components that cause the abrasives to be stuck to the surface. These can usually be removed by applying a few drops of dilute detergent solution. Gently agitate with a soft sable paintbrush to help loosen embedded material, then rinse thoroughly with clean cotton swabs dampened in distilled water. Avoid scratching the surface with old polish and accumulated grime. Change swabs often to reduce risk and use a rolling rather than rubbing motion.

In some cases, light tarnish can be removed from silver or copper alloy objects by simply wiping the surface with cotton moistened with diluted detergent solution, then rinsing with clean, distilled water. In order to determine if your silver needs polishing, test clean a small area with detergent solution and examine the results to see if this is necessary. If polishing is not needed, wipe the object gently with pieces of flannel or loose cotton dampened with detergent solution, changing them frequently to prevent surface abrasion. Rinse the surface by wiping it with clean cotton dampened with distilled water and allow the object to dry completely in a warm, dust free environment.

### Polishing

If polishing is necessary, mix a small amount of precipitated calcium carbonate (do not substitute ground chalk or whiting as it will scratch) and detergent solution together in a shallow dish. The mixture should be approximately the consistency of cream.

Apply a small amount of polish to the object with a small piece of clean flannel or a wad of loose cotton, rubbing gently in a circular motion. Replace the cotton or flannel often as you work so that you are not merely grinding the removed tarnish and used calcium carbonate back into the surface. A cotton swab may be lightly used to remove tarnish in recesses, although complete removal of tarnish is undesirable.

It takes very little calcium carbonate to polish an object—a common mistake is to use too much. Keep in mind that

even the finest polish is an abrasive that works by removing a microscopic layer of silver from the surface of your object. The more often you polish, the faster you will remove surface detail and crispness of design.

Once polishing has been completed, remove residues by rinsing the surface with cotton dipped in clean distilled water. At this point, change the pads on the table and change your gloves so that you are working on a clean surface. Dry the object thoroughly by wiping with a clean, dry, piece of flannel.

If your silver is for purely decorative purposes and you want to display it, you may want to apply a protective coating to keep it from tarnishing too quickly.

### Apply a Protective Coating

In the home environment, silver can be protected from water and air borne pollutants with a simple coat of wax. Apply a small amount of microcrystalline wax to a soft clean dry cloth or very soft brush and rub it over the entire surface of the object. Do not apply too much wax. Wait a moment and buff the wax with clean pieces of old silk or nylon stockings. These materials will not leave lint trapped in the wax. Wax has a flat plate-like structure and buffing helps align and compress the plates for a more complete and protective coating. If you accidentally leave unbuffed wax on the surface too long, apply a small amount of fresh wax to soften the dried wax and buff immediately.

To maintain the wax coating, periodically dust the object with a soft

### Silver Cleaning Resources:

Unbleached cotton flannel is available from Testfabrics, Inc.

Latex gloves are available in many hardware stores and medical supply companies.

Precipitated calcium carbonate and Renaissance® Wax can be purchased from Conservation Support Systems, Santa Barbara, California, (800) 482-6299.

Selvyt® buffing cloths and natural bristle buffing brushes are available from jewelers supply companies.

natural bristle brush and check for evidence of tarnishing. The wax should provide good protection for approximately one year, depending on the environmental conditions and the amount of handling the object receives. When tarnish is noted, remove the old wax with mineral spirits and reapply as described above. For objects on permanent display, consider having a conservator professionally clean the object and apply a stable organic resin coating.

### Safety Issues

When working with solvents, always follow all recommended safety precautions noted on the containers. Mineral spirits are strong, reactive chemicals and their fumes are be harmful to your health if not used as instructed. Always be aware of the location of the nearest fire extinguisher when working with flammable solvents and waxes.

---

## Your Silver May Tell a Story

By Paul L. Benson

*Nelson Atkins Museum of Art and*

Robert S. Gilmore

*General Electric Research and Development*

The hallmarks on objects made from silver or gold can reveal much about the history of the piece. The name of the master smith, the town where he worked, the date of manufacture, taxes paid on the piece, and the quality of

the metal can all be determined by reading the hallmarks.

The history of an object, and to some extent, its value, is intrinsic in the ability to read and decipher the various marks found on them. This information is of great importance to curators, historians, collectors, and even social anthropologists who can trace the movements of individual smiths and sometimes entire families through their

hallmarks. Without these marks the objects can be appreciated only like archeological objects taken out of context, i.e., they are still appreciated for their beauty but they have no history.

The use of hallmarks on precious metal objects has a long and sometimes troubled history. The first recognized use of hallmarks was on Byzantine silver objects dating from the sixth

(continued on page 11)

# FPI/NSU developing website on Native American Issues

By Richard Walbauer

The Federal Preservation Institute (FPI), a program of the NCPTT, in cooperation with Northwestern State University of Louisiana, is developing a website to provide essential information about historic preservation and Native American issues. The website will identify available legal mandates; policy statements and guidance; summarize available technical assistance and training; and provide contact information for tribal governments and federal agencies.

The Federal Preservation Institute hosts monthly meetings of Federal Preservation Officers from a broad range of government agencies. These officers are responsible for developing, maintaining, and implementing cultural heritage programs within their agencies' missions. They identified improvements in consultation with Native Americans as a high priority need for their programs.

Federal Preservation Officers frequently consult with tribal groups on the preservation of Native American cultural resources. They must meet the requirements of laws such as the National Historic Preservation Act (NHPA) and the Native American Graves Protection and Repatriation Act

---

**The variety of laws and development of groups responsible for the preservation of Native American cultural heritage provides new opportunities to improve interactions and activities through a web-based knowledge center.**

---

(NAGPRA) in the context of the government-to-government relationship between the United States and tribes.

In addition, federal preservation officers must be aware of a broad range of ordinances enacted by tribal governments. Many tribes have offices and organizations that manage heritage preservation. Also, there are now more than 30 Tribal Historic Preservation Offices that operate preservation activities under the guidelines of NHPA.

The variety of laws and development of groups responsible for the preservation of Native American cultural heritage provides new opportunities to improve interactions and activities through a web-based knowledge center.

The Federal Preservation Institute's

Native American Consultation website may play an important role in fulfilling this need. FPI is currently collecting available information and organizing it for review and comment. Information will be sorted into simple categories such as legislation, sample agreements, case studies, glossary, and links and contacts. FPI is also seeking information about preservation consultations with tribes. If you have available documents, publications, websites, reports, or other useful information that you are willing to share, please contact the institute. FPI is particularly interested in hearing about your valuable learning experiences that resulted in improved formal policies and procedures.

## *If you can help ...*

Please send information to:  
Richard Walbauer,  
Federal Preservation Institute  
National Park Service (NCAP-330),  
1849 C Street, NW  
Washington, DC 20240,  
e-mail: richard\_walbauer@nps.gov  
202/343-4113.

## Carroll assumes new role with NPS

Mary S. Carroll, NCPTT's information management program director, has accepted a position as archeologist within the Archeology and Ethnography Program of the National Park



Service's National Center for Cultural Resources. In her new position, Carroll will work with parks to ensure NPS compliance with the Native American Graves Protection and Re-

patriation Act (NAGPRA).

Carroll will begin her new position in Washington D.C. on Dec. 17, 2001. The Archeology and Ethnography Program provides national coordination for the protection, preservation, and interpretation of America's archeological and ethnographic resources in the National Park system and beyond. For more information about the Archeology and Ethnography program see [www.cr.nps.gov/aad](http://www.cr.nps.gov/aad).

Carroll served as NCPTT's information management program director for seven years. Her work in-

cluded overseeing the development and implementation of NCPTT's award-winning website: [www.ncptt.nps.gov](http://www.ncptt.nps.gov).

During Carroll's tenure, NCPTT funded numerous IM activities focusing on 1) delivering substantive preservation-related information via the World Wide Web, 2) applying innovative computer technologies to the management and dissemination of information, and 3) developing strategies for long-term preservation of and access to digital information.

# Silver Tells a Story:

(continued from page 9)

century AD, although their meaning has not been clearly defined. In 1260, France became the first European country to use hallmarks as an indicator of silver followed by England in 1300. In England, the importance attached to these hallmarks was substantial as seen in the penalties attached to altering or incorporating a master's legitimate hallmark into the work of another smith: heavy fines, imprisonment, loss of body parts, transport, and death.

Silver's susceptibility to tarnishing requires a thin layer of metal must be removed each time it is polished to return the metal to its bright lustrous finish. Through time then, enough metal may be removed that the hallmarks can become illegible or may disappear altogether, resulting in the loss of important historic information.

Fortunately, when the hallmarks are stamped into the metal, the metal deforms. When the surface image is worked away, information may still be saved in the residual deformation of the metal beneath the surface.

Scientists can use sound waves to image residual deformations within a metal. An acoustic beam is focused on the surface to be studied and the reflected sound waves are analyzed. Changes in the amplitude of the sound waves are measured and imaged on a CRT screen. This method is non-contact and no samples are taken from the metal. Therefore, even though the hallmark may be completely polished-off, it may still be possible to recover an image of it.

Imaging has been accomplished using the scanning acoustic microscope (SAM) at the Schenectady, New York, facilities of General Electric Research and Development. SAM uses a technology first proposed in 1929 but not fully developed for subsurface imaging until the early 1970's.

The imaging process uses short electrical pulses applied to a transducer to create the acoustic beam at ultrasonic frequencies. Then the acoustic beam is focused either on the surface or beneath the surface of the object. An im-

## History Rediscovered



Image 1:  
Sterling Silver coupon  
with hallmarks



Image 2:  
Coupon with hallmarks  
polished off



Image 3:  
Coupon with  
recovered image of hallmarks

age is acquired by raster scanning the ultrasonic beam across the object and acquiring echo amplitudes along the scan lines. The echo pulse is captured by the transducer and is converted into an electrical pulse with the amplitude of the pulse modulating the brightness on a computer screen to create the image line-by-line.

High frequencies are used to create the images. Because air is too thin to transmit the acoustic beam at these frequencies, a liquid carrier must be used to carry the acoustic beam between the object and the transducer. This means that the silver object must be placed in the liquid carrier. A perfluoro hydrocarbon medium was chosen instead of the usual water medium because of its superior acoustic properties in our application. This liquid is non-corrosive to both silver and gold and is environmentally (ozone) friendly.

Images 1-3 demonstrate the quality

of the image recovery possible with this method. A sterling silver coupon was hallmarked by a trained silversmith and then the marks were polished-off just to the point where they were no longer visible.

By processing the surface waves produced by the acoustic pulses on the silver an image was obtained of the invisible (polished-off) hallmarks. The word individual letters in the word "sterling" could not be resolved due to their small size and the overlapping deformation created when the silver was struck.

Experimentation on a small number of silver objects from various time periods has generally produced good results but further tests need to be performed on a larger sampling of objects to determine the limits of the imaging process. Co-author Benson is very appreciative to both the NCPTT and Robert Gilmore of General Electric for their generous funding of this project.

## Safety Workshop:

(continued from page one)

historic collections protection, and security and preparedness planning. Those who may benefit from this conference include mayors and other public officials; federal, state, and city security and historic preservation staffs; public entities, and the private sector.

Assisting the National Park Service in presenting this conference are the Advisory Council on Historic Preservation, the National Trust for Historic Preservation, the American Institute of Architects, the U.S. Conference of Mayors, the U.S. Army Corps of Engineers, and the Associa-

tion of Partners for Public Lands.

Persons interested in registering should send an e-mail with their name, telephone and email address to [nps\\_fpi@nps.gov](mailto:nps_fpi@nps.gov). There will be a registration fee (\$185) that will include continental breakfast, lunch, and afternoon refreshments. A block of rooms has been reserved for conference participants at the Capitol Hilton Hotel in Washington, D.C., for the night of Jan. 21st.

Questions or recommendations for topics and speakers may be sent to Constance Ramirez at [nps\\_fpi@nps.gov](mailto:nps_fpi@nps.gov) or by telephone at 202-343-9569.



**National Park Service**  
**U.S. Department of the Interior**

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

Official Business  
 Penalty for Private Use, \$300

---

First Class Mail  
 Postage and Fees  
**PAID**  
 National Park Service  
 Permit No. G-83

---

## 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.*

### National Park Service

Fran P. Mainella, *Director*  
 Katherine H. Stevenson,  
*Associate Director, Cultural  
 Resource Stewardship and  
 Partnerships*

### NCPTT

Pat Tiller, *Acting Director*  
 Dr. Mark Gilberg, *Applied Research and  
 Technology Transfer  
 Program Director*  
 Dr. Mary F. Striegel,  
*Environmental and  
 Materials Research  
 Program Director*  
 Kevin Ammons, *Program Analyst*  
 ElizaBeth A. Bede, *DuPont Fellow*  
 Lance Ellis, *Information Technology  
 Administrator*  
 Andy Ferrell, *Public Outreach Coordinator*  
 Jeff Guin, *Education Intern*  
 Rodney Harrison, *Webmaster*  
 Angela Leger, *Receptionist*  
 Sheila Richmond, *Heritage Education  
 Coordinator*  
 Andy Sanders, *Public Outreach Intern*  
 Deig Sandoval, *NSU/NCPTT Joint Faculty*  
 Brooke Slemmons, *Information Management  
 Intern*  
 Mary Ellen Servello, *Executive Secretary*

### Preservation Technology and Training Board

Dr. Neville Agnew, *Chair  
 The Getty Conservation Institute*  
 Dr. James Huhta, *Vice Chair  
 The Center for Historic Preservation  
 Middle Tennessee State University*  
 E. Blaine Cliver, *Secretary of the Interior's  
 NPS/HABS/HAER Representative*  
 F. Blair Reeves, FAIA  
 School of Architecture, University of Florida  
 Dr. Alferdteen Harrison,  
*Margaret Walker Alexander  
 National Research Center*  
 Dr. W. James Judge,  
*Fort Lewis College*  
 Dr. Elizabeth Lyon  
 Mr. Nicholas Gianopoulos,  
*Keast & Hood Co.*  
 Gerri Hobby  
 Ms. Christy McAvoy,  
*Historic Resources Group*  
 Norman Koonce, FAIA  
*American Institute of Architects*  
 Roy Graham, FAIA  
 Catholic University  
 Eddie Tullis,  
*Creek Indian Enterprises*