



NCPTT IN BRIEF

National Center for Preservation Technology & Training • Technology Serving the Future of America's Heritage



Lee H. Nelson Hall
Home of NCPTT

NCPTT advances the application of science and technology to historic preservation. Working in the fields of archeology, architecture, landscape architecture and materials conservation, the Center accomplishes its mission through training, education, research, technology transfer and partnerships.

NCPTT was created by Congress in 1992 to develop and disseminate preservation technologies and to train practitioners in the field. NCPTT promotes preservation technology in the fields of archeology, architecture, historic landscapes, and materials conservation.

NCPTT emphasizes preservation technology research. We support innovative technologies in the preservation of cultural properties and the transfer of technology from arenas not readily identified within historic preservation.

Technology Serving the Future of America's Heritage

NCPTT conducts preservation technology research

NCPTT undertakes research at its in-house laboratories, which include an environmental chamber that allows researchers to test the effects of pollutants on cultural materials. More widely, the Center stimulates new research through its nationwide grants program.



NCPTT provides grants, creates partnerships

NCPTT maintains a broad partnership base that includes National Park Service sites; other federal agencies; state and tribal historic preservation offices; universities; private corporations; and local, state, national and international non-profit organizations. The Center provides direct and competitive grants to promote research and training opportunities in preservation technology.

NCPTT serves as a trainer and convener

The Center develops and conducts regional seminars



NCPTT IS CURRENTLY FOCUSED ON SEVEN RESEARCH PRIORITIES:

1. Protect cultural resources against vandalism, looting, terrorism, and natural disasters
2. Conserve architectural materials of the "recent past"
3. Develop appropriate technologies to preserve houses of worship and cemeteries
4. Monitor and evaluate preservation treatments
5. Study environmental effects of pollution on cultural resources
6. Document and preserve threatened cultural landscapes
7. Develop innovative techniques in dating, monitoring, analysis, and remote sensing of archeological sites and artifacts

and workshops on topics like cemetery monument conservation. NCPTT promotes excellence in preservation by promoting historic preservation training and education opportunities for professionals through projects like the NCPTT Preservation Engineers Initiative.

NCPTT serves as a Clearinghouse and Web Portal



NCPTT's website and publications enable the Center to deliver the latest news about preservation technologies to a variety of audiences. Also, NCPTT supports the distribution of preservation information through its grants and partnerships.

NCPTT teaches preservation for future generations

NCPTT's Heritage Education program conveys to our youngest citizens the power of place and the stories behind our irreplaceable treasures. The program administers activities to enhance the educational experience by teaching students the value of their local heritage. The program also serves as a national model for heritage education.

NCPTT Overview

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Bureau: National Park Service
Members: All
Issue: NCPTT Funding for FY2008

Park/Program: National Center for Preservation Technology and Training (NCPTT)

Key Points:

- NCPTT is the only preservation research and technology center of NPS
- Created by statute: 16 USC Part D
- Stimulates technology transfer from the academic and private sectors
- Provides training to professionals inside & outside of NPS
- Works in all disciplines of historic preservation, and in heritage education
- PTT Grants program stimulates research and new technologies for practical application to repair, rehab, & conservation
- Program is lean, effective, and highly rated by customers
- No similar program exists in the private sector

Background: NCPTT is a one-of-a-kind program in the federal government, leveraging a small investment in federal dollars to provide a significant return to the historic preservation community across the United States. Founded by the 1992 amendments to the National Historic Preservation Act, the Center stimulates technology transfer from the academic and private sectors into the disciplines of archeology, architecture, landscape architecture and museum conservation, providing training and information resources to laymen and professionals working to preserve historic resources around the country.

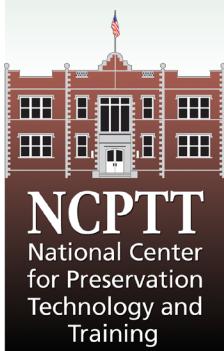
NCPTT's research program, both at its in-house laboratories and through its partners and grants, has generated a substantial body of applied research available to preservation professionals working in and out of the government. The PTT Grants program, which generates many of the Center's research and training projects, has awarded a total of \$7.2 million since 1994 (recent grant awards have been curtailed by erosion of purchasing power of funding). NCPTT's publication catalog exceeds 130 research reports, training manuals, and videos, which are available to order or download from its website. The website, www.ncptt.nps.gov, is actively maintained as a technical repository for the preservation community, and serves as the host site for the Center's paperless grant application program. The Center also regularly sponsors research colloquia, seminars, and training events at its headquarters and at various sites around the U.S.

NCPTT's base federal funding has remained level at approximately \$2.0 million since 1994.

Base Funding	Heritage Education
FY 2002 \$1,972,000	\$250,000
FY 2003 \$1,959,000	0
FY 2004 \$1,943,000	0
FY 2005 \$1,931,000	0
FY 2006 \$1,912,000	0
FY 2007 \$1,922,000	0

Current Status: Included in President's FY07 budget with COL adjustment.

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NCPTT Materials Research

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NCPTT's Materials Research Program works in partnership with parks, laboratories, government agencies, universities and others to understand how cultural objects deteriorate with time.

The program's goals are (1) to understand cultural resources decay, (2) to develop and evaluate new treatments to protect cultural resources and (3) to disseminate scientific results and preservation technologies through presentations, publications, and training for preservation professionals nationwide. A special interest within the program is the study of outdoor air pollution effects on cultural materials. Research projects are developed internally at the NCPTT Environmental Exposure Facility located on the campus of Northwestern State University, Natchitoches, Louisiana, and externally through cooperative and interagency agreements, contracts and grants.



Partnering to Protect

The Materials Research Program seeks partnerships within both the public and private sector to collaborate on projects of mutual interest that advance preservation technology. For example, The U.S. General Services Administration (GSA) is responsible for Federal Properties across the country including many historic buildings. Currently they are establishing policies for the maintenance and treatment of terrazzo flooring found in many of these buildings. They lack the expertise to scientifically evaluate treatments. Together, the Materials Research Program and the GSA have joined to study and evaluate treatments such as vitrification of terrazzo floors.

In order to understand the complex interactions of air pollution with materials, the Materials Research Program helped to develop a unique recirculating exposure chamber that allows us to expose materials such as stone or metal samples to air pollution under controlled conditions. Using this chamber, the uptake of pollution on surfaces can be measured. Researchers can look at how different features of the material affect pollution deposition and develop new treatments to minimize damage to materials. Currently, the program has initiated partnerships with organizations like DuPont Corporation to test new treatments for limestone and marble. The treatments may include stone strengtheners, pollutant repellents, or surface protectants.

Meeting the Needs of Preservation

In addition to our laboratory research, we actively look at preservation issues in the field. For example, the program is examining technical issues associated with the preservation of historic cemetery monuments. New technical approaches in cemetery preservation range from advances in databases and geographical information systems to new treatments to deter biological growth on stone. As we evaluate new treatments and methodologies, we seek field test sites for further trials. Based on our research, we offer cemetery monument conservation workshops advancing the latest knowledge in cemetery preservation.

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NCPTT Architecture and Engineering

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NCPTT's Architecture and Engineering Program (AEP) encourages research and partnerships with organizations and institutions working to advance preservation technology for buildings and other structures.

Preservation Engineering

NCPTT is working with partners to develop a preservation engineering curriculum and to prepare instructional materials for professional development courses. The program is designed so that any engineer with preservation experience can teach the courses, with each instructor personalizing and adapting the course material with their own experience and to address the background and experience of the participants.

The Professional Development Program for Engineers in Historic Preservation is targeted at engineering professionals from the architectural, civil, structural, and mechanical engineering disciplines; technically-oriented architects; and technically-oriented graduates (MS) of historic preservation programs.



Sustainable Approaches to Historic Preservation

The environmental impact of pollution on our built environment is one of NCPTT's six research priorities. Interpreting this broadly, Architecture and Engineering is focusing on sustainable practices that can greatly reduce the effects of the built environment on the natural world. Sustainable methods also address the preservation of threatened cultural landscapes, another of NCPTT's research priorities.

Through this initiative NCPTT aims to unite proponents of preservation and of the sustainable design movement. This discussion may lead to workshops and training seminars to help professionals find common ground between preservation and sustainable design.

Summer Institute

NCPTT's Summer Institute offers professionals the opportunity to earn continuing education units (CEU) and reaches out to top architecture and engineering faculty and students across the nation. NCPTT's Architecture and Engineering component began the Summer Institute in July 2004 with courses developed as a result of the Engineering Initiative. The Summer Institute has matured to include courses by the Center's Materials Research and Archeology and Collections programs.

AIA/HRC Preservation Education Task Force

Based on NCPTT's efforts related to the preservation engineering initiative, NCPTT has been invited to partner with the AIA/HRC's Preservation Education Task Force to provide direction for a multi-year initiative to better integrate historic preservation into the basic curriculum of undergraduate architecture degree programs and to explore opportunities for focused preservation education at the graduate level.

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NCPTT Archeology and Collections

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NCPTT's Archeology & Collections Program seeks to foster and develop technological innovations and applications that enhance the preservation of archeological sites, landscapes, materials, and collections.

Eons of the human past are unknown but for the record people left in the ground and across the landscape. Industrial and technological developments of the last two centuries have threatened this record to an unparalleled degree. Even the process of doing archeology takes its toll on the very resources from which we seek to learn about the past. Modern technological innovations have, however, given us the capability of protecting these finite materials and places in ways that once were unimaginable.



Grants

The Center awards grants to further its mission. In the Archeology & Collections program area, these include:

- 2005: Five in areas of conservation, satellite prospection, training, and radar prospection
- 2006: One in three-dimensional laser scanning
- 2007: Twenty currently under review

Research

Several research projects are underway. Highlights include:

- Cost effectiveness of laser total station versus robotic laser total station cartography
- Use of commercial laser particle size analyzer to develop a new dating technique (in partnership with Washington University, the Louisiana SHPO, and University of Minnesota)
- Comparison of techniques used to consolidate bone artifacts

Training

Several training events are on the horizon. Highlights include:

- Prospection in Depth: unique opportunity to learn geophysical prospection techniques, GIS, and GPS
- Geoarcheological Analyses: only course in archeological geology available to professionals
- Technologies of Heritage Education and Archeological Interpretation: only course that examines the technological overlaps in archeological education and interpretation
- Remote Site Surveillance: proposed workshop examining how technology can protect sites in hard-to-monitor locations

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NCPTT's Heritage Education program curriculum was developed to encompass the primary subjects of math, English language arts, science and social studies, using culture and heritage resources as the method of delivering the lessons.

The program's lesson plans focus on four types of culture and heritage resources: cemeteries, churches, main streets and agrarian units (i.e. plantations). These lesson plans can also be applied to elective courses such as art, business and journalism.



The program is supported by the State of Louisiana, Northwestern State University (NSU), the National Park Service (NPS) and other heritage based organizations. Numerous teachers and administrators also support this effort. Heritage Education - Louisiana was developed as a grassroots program which has lent it credibility and longevity in the state. A study conducted by researchers at NSU during the program's development determined that heritage education increases a sense of culture and heritage resource stewardship among students who participate in the program.

While the preliminary work that has been done in Louisiana is substantial, an additional effort is now being mounted to move this program into the next phase. The Heritage Education program at NCPTT was planned as a national program to be active in all 50 states as well as Washington D.C. The next efforts will be to develop professional contacts in other states and regions, locate culture and heritage resources appropriate to the curriculum and identify teachers and administrators who value heritage education as a unique learning opportunity for their students.

A critical component of the Heritage Education program is that of developing Partnerships between NCPTT/NPS and those interested in supporting Heritage Education. Official Partnerships come in two important forms for Heritage Education. The first is the sharing of resources and knowledge. Some institutions have already made significant headway in the development of resource depth, while others have "corporate knowledge" of heritage education that is invaluable to the process of building an extensive heritage education program.

The second significant form of partnership is one that provides fiscal support to the program. Grants, monetary donations, in-kind donations and other types of funding are vital to identify in order to develop Heritage Education program's to their fullest potential. Partnerships with government, private enterprise and individual donors are all considered appropriate directions worth investigating.



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