



Museums for America
Sample Application MA-30-13-0010-13
Project Category: Collections Stewardship

Henry Francis du Pont Winterthur Museum

Amount awarded by IMLS:	\$133,810
Amount of cost share:	\$199,235

Attached are the following components excerpted from the original application.

- Abstract
- Narrative
- Schedule of Completion

ABSTRACT

As its highest conservation priority, Winterthur Museum requests funding to support a two year project to study and treat its Chinese export lacquer furniture and object collection. Part of the lucrative American China trade that began in 1784, these elegant imports manifested the taste and sophistication of those wealthy enough to afford them. With one of the most comprehensive collections of Chinese export lacquer produced for the American trade, these pieces are significant focal points in the collection that contribute to the public's understanding of the Chinese influence on American design, the role of the China Trade in American commerce, and the passion for antique Chinese lacquer in the early 20th century. Many of Winterthur's 33 pieces of export lacquer are, however, in poor condition and several have been withdrawn from exhibition due to growing instability.

Although Winterthur has highly-skilled furniture and object conservators, they have been cautious about undertaking treatment of the lacquer collection because of the complex problems, specialized skills and knowledge required for treatment, as well as the lack of scientific research specific to Chinese export lacquer. After identification of this collection as a high priority, Winterthur conservators undertook an item-by-item survey in consultation with lacquer experts and concluded they would need additional training to competently and responsibly treat the complex and increasingly unstable collection. While training is available in European programs, expertise in the US is very limited. To address questions posed by conservators, Winterthur's Scientific Research and Analysis Laboratory (SRAL) consulted the Getty Conservation Institute, which has been in the forefront of lacquer characterization and conservation research. At their suggestion, Winterthur added a pyrolysis unit to the GC-MS that performs detailed analysis of lacquer components. Additionally, as part of a preventive conservation project, a Winterthur/University of Delaware Art Conservation Program (WUDPAC) student undertook an environmental survey of the China Trade Room, known for both its Chinese export furnishings and its problematic environment, discovering that significant environmental upgrades, some already underway, are necessary.

The proposed project will involve treatment and analysis of Winterthur's highest priority Chinese export lacquer objects by a multi-disciplinary team composed of Winterthur conservators, scientists, and curators and a lacquer conservator hired for the project, resulting in significant knowledge transfer and increased capacity for Winterthur staff as well as object stabilization. As a long term benefit, Winterthur staff will use this increased capacity to stabilize the rest of the collection after the grant and enhance instruction of Winterthur/University of Delaware Art Conservation students. As graduates, these students will carry this training to other institutions, helping to increase US capacity and expertise in the treatment of Asian lacquer. Using Winterthur's collection and relevant examples from the Philadelphia Museum of Art and the Peabody Essex Museum, SRAL will undertake a major analytical project to characterize Chinese export lacquer to better inform treatment decisions and preventive care.

Research and project results will be shared via the Getty Lacquer Database, a symposium and workshop, the Winterthur website, and through professional presentations and publications as opportunities arise. Results of this project will be instrumental in transforming the understanding and conservation treatment of Chinese export lacquer, a material held in many American collections that has received scant attention.

NARRATIVE

Project Justification

To maintain our commitment to excellence, scholarship, stewardship, and lifelong learning, Winterthur requests funds from the IMLS *Museums for America* program for treatment of six important, but deteriorated, examples of Chinese export lacquer ware and associated analytical work necessary to better understand this material. This *Collections Stewardship* project will allow Winterthur to enhance institutional treatment and teaching capacity by training staff and graduate conservation students who will work with the highly-skilled lacquer conservator hired for the project. Training in the specialized techniques lacquer requires will allow conservation staff to continue stabilizing Winterthur's collection, teach future conservation students, and disseminate these treatment techniques and analytical results to the widest audience possible. Results of this project will be instrumental in transforming the understanding and conservation treatment of Chinese export lacquer, a material held in many American collections that has received scant attention.

Winterthur Museum, Garden & Library holds a significant collection of 33 black lacquer pieces of furniture and related objects with elaborate gilt decoration created for the American market during the late 18th and first half of the 19th centuries. When *The Empress of China* made the first voyage to Canton in 1784-1785, the new American republic officially entered the lucrative China trade that had been the sole provenance of the European powers. Impressive pieces such as dressing bureau, bonheurs du jour (ladies desks), and multi-part folding screens imported for the families of investors, captains, super cargoes, and friends, transformed the interiors of those wealthy enough to afford them. Smaller pieces like trays, fan, card, sewing and shawl boxes, ubiquitous tea caddies, as well as small furniture forms, such as dressing stands with attached mirrors, nests of tables, sewing tables, tea tables, and gaming tables were imported for retail sale as well as gifts. Winterthur holds significant examples of these forms, some with provenances connecting them to specific China trade merchant families. Several of the pieces are significant focal points in the collection that contribute to the public's understanding of the Chinese influence on American design, the role of the China Trade in American commerce, and the passion for collecting antique Chinese lacquer in the early 20th century.

Many pieces are, however, in poor condition and a few have been withdrawn from exhibition due to growing instability. **The historic importance and poor condition of this collection has made it the number one conservation treatment priority at Winterthur** as detailed in the 2012 State of Collections and Conservation Priorities (See Appendix). This project addresses key components of Winterthur's Strategic Plan, including collection preservation, access, research, and education, which promotes excellence and provide leadership (See strategic plan summary).

Most research and study of lacquer has been devoted to fine examples created for the Asian market, so there is minimal historical, structural, analytical, or conservation information on wares created for the western export trade. Yet, historic records and examples indicate that the Chinese designed and manufactured significant quantities for various facets of the western market in the same manner as Chinese export porcelain. In addition to freestanding objects, panels were incorporated into room interiors and fine furniture, especially in France. Curators and conservators who have carefully examined examples of export ware note that examples differ significantly from their fine Asian cousins intended for domestic consumption in the preparation of the substrate, choice of lacquer resin components, number of layers, and design. These differences have significant, but poorly understood, consequences that affect the stability, deterioration pattern, and treatment of export lacquer. Other documented collections, many at institutions who also struggle with lacquer preservation issues, include American market examples at the Peabody Essex Museum, Philadelphia Museum of Art, Rhode Island Historical Society, Girard College, Metropolitan Museum of Art, and Historic New England. In addition, many

historical societies and historic houses such as Wyck in Philadelphia, Gore Place in Waltham, MA, and Historic Deerfield have significant examples of Chinese export lacquer. European market examples are found in many major US art museums exhibiting European decorative arts.

Most Chinese export ware created for the American market exhibits the black and gold style popular in China at the time and readily adaptable to mass production. After the substrate (usually wood) was prepared, a ground of clay, crushed shells, brick dust, or other priming agents mixed with a binder of *urushi*, glue, and/or blood was applied. Then each piece received 3 to 15 coats of lacquer with a day or more in a humid environment for each layer of lacquer to cure followed by polishing of each layer. The design was pounced or incised onto the polished surface and traced in lacquer onto which gold powder was dusted. Both bespoke pieces and those intended for resale were ordered at the beginning of the trading season when the ships arrived and had to be ready within a few months when the ships departed, leading to inevitable short cuts that affect preservation. Practices typical for export lacquer such as poor preparation of the substrate, exclusion of *urushi* from the ground mixture or complete lack of a ground, truncated curing, and limited polishing all affected the appearance and durability of the final product and create different treatment challenges than those encountered with typical Asian ware. The nature and extent of these short cuts and their impact on the deterioration of export wares needs research and documentation to help guide treatment decisions.

Nature and Deterioration of Lacquer

Asian lacquered objects have a complex layering structure that is particularly sensitive to visible and ultraviolet radiation as well as to shifts in relative humidity. Damage to these objects is difficult to repair and is often permanent and irreversible. The term *urushi* refers to the sap from trees of the Anacardiaceae group, part of the sumac family found in south-east Asia. Traditional lacquer, known as *urushi* in Japan and *qi* in China, is from the sap of *Toxicodendron vernicifluum*. This is considered the finest resin, but is produced in much smaller quantities, and was therefore much more expensive than sap from other sources in the same family. As such, it was routinely used in combination with other more available lacquers, and sometimes only employed for the final layer. Recent advances in the analysis of lacquer have allowed scientists to determine the species source for lacquers, even at the layer level, leading to a potentially better understanding of patterns of trade and lacquer production in south-east Asia.¹

Objects in Winterthur's collection exhibit structural damage to the substrate and serious lacquer deterioration in the form of light damage (dull surface, specific craquelure pattern), cracked and lifting lacquer, losses and inappropriate past repairs, fills, and inpainting. Much of the cleavage and lifting may result from poorly prepared grounds without strong adhesion to the substrate and from improper curing that weakens bonds between the lacquer layers. Poor environmental conditions, particularly low and fluctuating relative humidity can exacerbate these problems. Dry conditions can remove bound water from the lacquer matrix causing it to lose mass and shrink. In several instances, a resin was applied to the lacquered surface during a later restoration campaign to provide saturation to a dull light damaged surface. This coating has often degraded, becoming discolored and brittle. For instance, a later coating applied to the high priority bureau table (2004.0030.001), has discolored and flaked extensively resulting in a dull uneven surface that obscures the gilded decoration. This presents a conservation challenge to remove or reduce the degraded finish without damage to the gilded decoration. Structural damage is particularly evident in the table (1963.0096) that is the second priority in this project. The table top has sustained severe cracks and associated lacquer disruption consistent with an unstable relative humidity. A major split in the leg and an open joint in the base make this table highly unstable; it has been withdrawn from exhibition.

Essential Research and Enhanced Treatment Capacity for Winterthur and US Collections

The conservation treatment of lacquer has traditionally been undertaken by specialists in Asian materials who understand its unique properties and vulnerabilities. Although Winterthur has highly-skilled furniture and object conservators, they have been cautious about undertaking treatment of the lacquer collection because of the complex problems, specialized skills, and knowledge required, as well as the lack of scientific research specific to Chinese export lacquer. There are very few specialists in the US to treat the significant amount of Asian lacquer found in American collections. Most are foreign trained and working in the US on visas. For the same reasons, instruction of students in the Winterthur/University of Delaware Program in Art Conservation (WUDPAC) has been very limited. This two year project seeks to address these issues by hiring a project conservator with a specialty in lacquer to work with the Winterthur conservation staff and students in treating a few of the most important and representative objects in the collection to transfer knowledge and skills. The skills Winterthur staff develops will allow them to provide more complete instruction and treatment experiences to WUDPAC students in future years; these graduates will then take these skills with them to their future positions. In addition to teaching lacquer conservation, Winterthur conservators will continue to stabilize the rest of Winterthur's lacquer collection in the years after the grant project is complete.

Winterthur scientists, conservators, curators, and students will undertake a detailed analytical and technical study of representative examples in Winterthur's collection. To increase the sample size and reliability of the results, they will also study comparable examples at the Philadelphia Museum of Art (PMA) and the Peabody Essex Museum (PEM), institutions with strong, well-documented collections and with whom Winterthur has a strong collaborative relationship. Under the supervision of Dr. Jennifer Mass, Winterthur's Scientific Research and Analysis Laboratory (SRAL) will identify the source species of the lacquer resins in Winterthur's collection as well as the colorants, additives, layer structure, and design materials. Conservators and curators will assess the structural elements and the response of different resins and layer structures to various treatment protocols. During this project, conservation students will be encouraged to undertake technical studies as well as treatment of specific pieces. Through workshops and publications, Winterthur will disseminate the results of this study to help improve preservation and understanding of Chinese export lacquer ware.

Project Work Plan

Preparation

In preparation for this project Winterthur conservation staff undertook a survey of the lacquer objects in Winterthur's collection in 2011-2012. The survey began with an inventory of all Asian lacquered objects in the collection and consultation with the curator Wendy A. Cooper, Lois F. and Henry S. McNeil Senior Curator of Furniture, about history, provenance, and priority. Each object was examined, documented on a survey form, and photographed. Further documentation of condition issues was then recorded on polyester film locating structural problems, cracks, losses, flaking, and previous restorations. The results of this survey were reviewed with conservator Maria Joao Petisca, a Portuguese lacquer expert, currently treating large Chinese export lacquer panels for The Preservation Society of Newport County. They received an IMLS grant in 2010 for the conservation of lacquer panels in the dining room of the Elms. Winterthur furniture conservators attended the lacquer study seminar they hosted in November 2011, and have consulted them as our project developed. Unfortunately, the Newport project did not have the variety of forms or access to analytical resources needed to answer many of the questions raised during the project. The summary survey report from their visit is in the appendices. Observations and recommendations on specific pieces have been incorporated into Winterthur's survey report, also in the appendices.

Winterthur's survey revealed that the lacquer on almost all objects has suffered significant deterioration exhibiting, in varying degrees, a dull surface, cracked and lifting lacquer, losses and inappropriate past repairs, fills and inpainting. In addition, some objects, particularly large furniture pieces, have structural damage to the wood substrate such as open joints and cracks due to wood shrinkage or inherent vice. The survey revealed that 3 objects have a high conservation priority, 15 have a medium priority, 13 have low priority, and 2 require no treatment. (See appendix for survey results and treatment proposals for representative objects.)

While Winterthur maintains careful control of its environment, a recently completed study by WUDPAC student Courtney von Stein reveals that conditions in one key display area, the China Trade Room, are less than ideal. While the temperature remains stable at 70F, relative humidity frequently fluctuates more than 10% in a 24 hour period and falls below 40% during the winter. Plans of the HVAC system reveal that this area received a stand-alone unit that is poorly controlled and not integrated with the rest of the system. Light is a significant problem in spite of window filtration that currently removes most UV and 50% of visible light. Because the Museum is composed of furnished rooms on tour daily, the lacquer receives more total exposure than it would in a traditional museum environment where it rotated off exhibit. (See environmental assessment in appendix).

Also in preparation for this project, Winterthur staff was chosen to participate in the 2012 Getty sponsored workshop Recent Advances in Characterizing Asian Lacquer (RADICAL). The Getty Conservation Institute has been at the forefront of lacquer characterization and conservation research. This 5-day workshop was convened with the goal of exploring recent developments in the analysis of organic materials in Asian lacquer, with the aims of instructing conservators and conservation scientists in newly developed procedures for acquiring detailed compositional information and exploring implications for the conservation of lacquered objects. The two primary analytical procedures used are pyrolysis gas chromatography-mass spectroscopy (GC-MS) and visible/fluorescent light microscopic examination of cross sections. Dr. W. Christian Petersen, an organic chemist who volunteers three days per week in SRAL and is our resident expert in GC-MS, attended the workshop in October, and Associate Furniture Conservator Dr. Stephanie Auffret, will attend the one planned for the east coast in 2013.

Goals

The project goals include:

- Treat and stabilize high priority examples of lacquer from Winterthur's collection.
- Enhance the treatment skills of Winterthur's conservation staff to allow future stabilization/treatment of the collection by in-house staff.
- Provide new, improved instruction to WUDPAC students who, as graduates, will help address needs in other American collections.
- Improve the preservation environment for the most at risk part of Winterthur's collection.
- Analyze representative examples of Chinese export lacquer at Winterthur, PMA and PEM to enhance understanding of export wares and thus improve long term preservation.
- Sponsor a symposium, workshop, and small gallery installation to share project results with curators, conservators, scholars, and the public.

Treatment of High Priority Objects

To treat Winterthur's highest priority objects, Winterthur proposes to hire lacquer conservator Joao Petisca, who is currently working on an IMLS-funded lacquer treatment project for The Preservation Society of Newport County in Rhode Island. Joao has significant experience treating and researching lacquer, as highlighted in her resume. She has already consulted with Winterthur conservators during the development of this project and exhibited a strong interest and capacity for research and teaching. For eighteen months she will work in the furniture laboratory with Associate Conservator Dr. Stephanie Auffret, under the supervision of Senior

Conservator Mark Anderson, and in consultation with Senior Curator Wendy A. Cooper. The furniture conservation lab is a fully-equipped facility with a walk-in fume hood, ventilation trunks, specialized power and hand tools, and a visible/fluorescent light microscope.

Winterthur's lacquer collection is prioritized for treatment based on condition, rarity of form, and the existence of an American China trade provenance. A table summarizing the survey results and individual reports for objects to be treated is included in the appendices. The proposed objects to be treated (in priority order) include:

- Bureau table 2004.0030.001 – Petisca, Anderson, Auffret
- Round table 1963.0096 – Petisca, Anderson, Auffret
- 6 panel screen 1962.0224 – Petisca, Anderson, Auffret
- Screen 2004.0030.002- Anderson, Auffret
- Shawl case 1964.0084 – Anderson, Auffret
- Nesting table 1959.0575 D – Petisca, Anderson, Auffret (beginning instructional piece)
- Student projects: Miniature desk and bookcase 1966.0779; tea caddy 1962.0219 A-E
- Assessment and development of treatment protocols as appropriate: screen 1961.0821 A, B (Past treatment of lifting lacquer renders future treatment highly challenging)

Two to three treatments will go forward simultaneously to accommodate clamping and drying times. All documentation, treatment techniques and materials will be consistent with the American Institute for Conservation Code of Ethics and Guidelines for Practice. Treatment steps will include as necessary:

- Stabilization of wood substrate structure splits and joints using, in most instances, animal glue chosen for strength and reversibility.
- Cleaning of lacquer surface including dry cleaning methods, polar and non-polar solvents, or aqueous cleaning systems depending on sensitivity of gilded design, degradation of lacquer surface, type of surface dirt, and presence of a later varnish.
- Consolidation of lifting/flaking lacquer with either animal glue (hot hide glue, rabbit skin glue or cold fish glue) or synthetic adhesives such as poly(vinyl acetate) or an acrylic emulsion. Choice of adhesives will be based on the thickness and nature of the ground, the number of layers of lacquer and the state of degradation. Flakes will be relaxed and flattened prior to consolidation where possible.
- Removal/reduction of later resin coating where possible using techniques ranging from solvent/gel based systems to mechanical reduction.
- Removal/reduction of inappropriate fills and inpainting when appropriate, either mechanically (scalpel under magnification) or with solvent/gel based systems.
- Filling of cracks and losses with a reversible material applied over a barrier layer.
- Inpainting with materials chosen for reversibility and superior ageing properties.
- Final coating, as necessary, using a sacrificial layer of microcrystalline wax or low molecular weight synthetic resin to protect a compromised surface.

Enhancement of Treatment Skills

Senior Furniture Conservator Mark Anderson and Associate Furniture Conservator Dr. Stephanie Auffret will work with lacquer conservator Joao Petisca to assist with her treatments and work on other objects with her direction and assistance. Assistant Objects Conservator Lauren Fair and Paintings Conservator Mary McGinn will also participate in appropriate phases of treatment to enhance skills they will use in teaching WUDPAC students and treating Winterthur's collection.

Improved instruction to WUDPAC students

The lacquer conservator will assist Winterthur staff members, who serve as WUDPAC faculty, during her tenure by presenting a lecture/workshop on lacquer to first year students each year of the project. She will also work with major faculty supervisors Senior Objects Conservator Bruno Pouliot and Senior Furniture Conservator Mark Anderson to supervise lacquer projects for 2nd year students specializing in objects or furniture. By the conclusion of the grant, Winterthur staff will have the expertise and experience to teach lacquer care and conservation at both a basic and advanced level for WUDPAC students. This activity will help to address the shortage of conservators with the skill to treat lacquer objects in American collections.

Improved Preservation Environment in China Trade Room

A current NEH-funded project under the Sustaining Cultural Heritage Collections program will integrate Winterthur's HVAC system for this room providing significantly improved control of the relative humidity. Windows elsewhere in the Museum have a visible light transmission rate of 14% based on a grey tinted storm window and a layer of filtering Plexiglas. As part of this project, the China Trade Room will be fitted with an equally effective light transmission filtration system relying primarily on filtering Plexiglas. Associate Conservator Dr. Joelle Wickens, head of the Preventive Conservation team, will supervise this effort, ensuring that the treated lacquer objects return to the best possible environment.

Analysis of Representative Examples of Chinese Export Lacquer

Once understood in detail, the chemistry and stratigraphy of the lacquer compositions will help conservators better understand the causes of deterioration and will inform treatment protocol for Winterthur's extensive lacquer collection. Under the supervision of Dr. Jennifer Mass, SRAL will analyze key objects from Winterthur's collection and from comparable examples at the PMA and PEM. Associate Scientist Catherine Matsen will prepare samples and assist with the analytical work undertaken by Dr. W. Christian Petersen. The furniture will be examined and samples collected by Dr. Stephanie Auffret, Wendy A. Cooper, and Dr. Jennifer Mass. Karina Corrigan, H.A. Crosby Forbes Curator, Asian Export Art at the Peabody Essex Museum, one of the few curators who has studied Chinese export lacquer, will consult during the trip to PEM and travel to Winterthur for a two day consultation and review of the analytical results. Her participation will help place the results in a structural and historical context that will enhance overall understanding of the collection and further inform treatment decisions.

The conservation and SRAL staff will use a visible and fluorescent light microscope to undertake a cross-sectional study of the stratigraphy of lacquer layers and x-ray to study the structure of each object. SRAL (Winterthur's Scientific Research and Analysis Laboratory) has elemental and molecular analysis instrumentation that can thoroughly characterize Asian lacquers. All results will be entered in the Getty lacquer database and, as noted in their letter of support, they are interesting in collaborating with Winterthur:

- XRF (x-ray fluorescence) and SEM-EDS (scanning electron microscopy energy dispersive x-ray microanalysis) - pigment and filler identification.
- Raman and FTIR (Fourier Transform InfraRed) spectroscopy - organic class identification such as oils and protein binders and further refinement of pigment analysis.
- SEM-EDS - metals in *urushi maki-e* decoration, filler composition in *urushi* ground layers.
- GC-MS w/ pyrolysis (Gas Chromatograph-Mass Spectrometer) –identify lacquer sources (China/Japan/Korea, Vietnam/Taiwan, Thailand/Burma) by pinpointing raw material markers.

Lacquer Symposium and Workshop

In the fall of 2015, Winterthur's senior furniture curator will mount a small exhibit of Chinese export lacquer that highlights this project in the furniture gallery. The exhibition will be accompanied by a two day study symposium with Winterthur staff and outside experts such as Karina Corrigan and Marianne Webb, author of

Lacquer: Technology and Conservation, as presenters. The first day will focus on the research results of this project. On the following day, participants will meet for a hands-on workshop to closely examine lacquer samples, deterioration patterns, analytical techniques, and preventive and treatment protocols.

Project Results

The most critical result of this project will be stabilization of Winterthur's important collection of Chinese export lacquer objects. The collection exhibits varying degrees of damage and instability that have caused removal of some examples from exhibition. Because the China trade is an important part of early American history and of the early 20th-century aesthetic represented in Winterthur's museum rooms, this collection must stay accessible to the public. Several pieces are key focal points in major rooms and withdrawing them from exhibit due to their vulnerable condition would create a significant interpretive gap. The conservation and research components of the project will be reviewed at a monthly meeting of the participants.

The presence of a skilled lacquer conservator will enhance the skills of Winterthur's furniture and objects conservators as well as the training of students in the Winterthur/University of Delaware Art Conservation Program. Conservation staff and students will work alongside the project conservator and she will teach basic lacquer preservation to first year students and basic treatment skills to second year students majoring in furniture or objects. This will help increase the capacity of the American conservation community to successfully preserve this fragile, but beautiful material. Her teaching will be evaluated using the existing faculty evaluation procedure which incorporates both student and supervisory input.

Winterthur will take the opportunity offered by this project and by a growing interest in lacquerⁱⁱ, to thoroughly research Chinese export lacquer in a manner that will enhance its interpretation for scholars and the public, as well as contributing fundamental preservation information valuable to other institutions and collections holding similar objects. Winterthur will disseminate the results of the project through several venues:

- The SRAL staff will contribute results to the Getty lacquer database.
- Winterthur will mount a small furniture gallery installation and accompanying symposium and conservation workshop. Standard Winterthur program evaluation forms will be collected from each participant to gauge the effectiveness of the program.
- Winterthur will feature the project on its website and other public venues as appropriate.
- Winterthur conservators, scientists, and students will present/publish results of the projects in upcoming conferences, like the annual meeting of the AIC, ICOM-CC meetings (triennial or interim within the Wood, Furniture and Lacquer Group) and the annual Association of North American Graduate Programs in Conservation (ANAGPIC).

ⁱ The range of lacquer sources came to light recently during a study of 17th century Dutch East Indies Company (VOC) trade records by the Getty Conservation Institute. An outgrowth of the Getty research was a workshop and the formation of an international group of scientists and conservators interested in Asian Lacquer who have begun sharing data and technical tips.

See for example: http://www.getty.edu/conservation/our_projects/education/radical/radical_workshop.html

Heginbotham, Arlen and Michael Schilling. 2011. New Evidence for the use of Southeast Asian raw materials in seventeenth-century Japanese export lacquer. In *East Asian Lacquer: Material Culture, Science and Conservation*, edited by Shayne Rivers, Rupert Faulkner and Boris Pretzel, 92-106. London: Archetype Publications.

URUSHI: Proceedings of the Urushi Study Group June 10-27, 1985, Tokyo, N. s. Brommelle and Perry Smith, Editors, The Getty Conservation Institute.

ⁱⁱ As evidenced by the current GCI initiative, the formation of an international lacquer interest group and dist-list, the international Asian Lacquer Symposium scheduled for May 2013 in Buffalo, NY, and the Mellon Foundation's recent efforts to promote conservation education for Asian art.

**IMLS LACQUER GRANT
SCHEDULE OF COMPLETION**

Activity	2013	2014												2015											
	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	
Establish Art Handling Schedule	█																								
Hire Asst Conservator	█																								
Purchase Equipment	█																								
Review treatment priorities	█	█																							
Treat 6 important pieces of lacquer ware		█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	
Ongoing training of Winterthur conservators		█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	
SRAL Sampling, Analysis, Compiling Data		█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	
Lacquer treatment instruction to WUDPAC students					█	█											█	█							
Supervision of 2nd year WUDPAC lacquer projects										█	█	█	█	█	█	█	█	█	█	█	█	█	█	█	
Production of Prof. Publications, Symposium, and Presentations																	█	█	█	█	█	█	█	█	
Update Project Status on Website/Blog		█	█					█	█					█	█					█	█			█	