

# IIC 2018 Congress: Preventive Conservation: The State of the Art



©Hpnx9420 CC BY 3.0 via Wikimedia Commons

TURIN - Following from the first announcement made at the 2017 IIC AGM in London last January, IIC is pleased to announce its 2018 Congress: *Preventive Conservation: the State of the Art*. The Congress will take place on 10-14 September 2018 in the northern Italian city of Turin.

It will be 24 years since an IIC Congress last specifically addressed issues in preventive conservation, in Ottawa in 1994. The field has developed enormously since 1994: preventive conservation has a central position in museum, site and heritage management.

**Conserving the Nicholas Ferrar Print Collection -** Thomas Bower and Puneeta Sharma on working on a collection from Magdalene College, Cambridge. Feature from page 8

**A students/professionals collaboration -** A case study from the North Carolina Museum of Art. Feature from page 12

**Viral Images : Social protest art and conservation -** Eleonora Nagy on exploring the historic and conservation challenges of objects created in time of unrest. Opinion piece on page 21

**Crossing Borders in Research and Conservation –**Viennese conference illustrates recent Indo-Austrian collaborations Feature from page 17

[www.iiconservation.org](http://www.iiconservation.org)

Continued...



CENTRO  
CONSERVAZIONE  
RESTAURO  
LA VENARIA REALE



CITTA' DI TORINO

In addition to capturing developments and changes in scientific understanding and practice, this congress will focus on current issues that exercise our field and will look to the future. It will build on some recent IIC initiatives, including the 2008 Congress on Conservation and Access and the IIC/ICOM-CC environmental guidelines developed

at the 2014 Hong Kong Congress.

The location for the 2018 Congress is Turin, a city with a varied cultural history, a strong international profile and innovative industrial centre and, at the same time, a comfortable, relaxed ambience. We are delighted that our partners in the 2018 Congress are the City of Turin, the Italian Regional Group of IIC (IGIIC), Turismo Torino e Provincia and the Centro per la Conservazione ed il Restauro "La Venaria Reale", which, most appropriately, is housed in one of the Savoy palaces, La Venaria Reale.

We now invite paper and poster proposals that address the issues defining the state of the art in preventive conservation and latest practice. A full list of suggested topics and themes and full details for submission can be found at the main IIC Congress website page here: <https://www.iiconservation.org/congress>

Please note that this is a simultaneous call for paper and poster proposals: there will be no later separate call for posters. IIC invites you to submit your proposal for a paper or poster in English in about 500 words (3500 characters) via the website: <https://www.iiconservation.org/congress>

If you have an IIC account, please log in first, if not, please register on the front page of the site for an IIC account before submitting a proposal. Please do not include any illustrations with your proposal submission and please indicate if your proposal is for a paper or for a poster. The deadline for the receipt of proposals is 8 May 2017.

We look forward to seeing you in Turin!

**News in Conservation** is published by The International Institute for Conservation of Historic and Artistic Works  
3, Birdcage Walk, London, SW1H 3JJ, UK  
Telephone +44 (0)20 7799 5500  
Fax +44 (0)20 7799 4961  
[www.iiconservation.org](http://www.iiconservation.org)  
ISSN 1995-2635

Editor  
**Barbara Borghese**  
[news@iiconservation.org](mailto:news@iiconservation.org)

Advertising  
**Graham Voce**  
[iic@iiconservation.org](mailto:iic@iiconservation.org)

Format | Production Design  
**Barbara Borghese**

Deadlines for next issue  
(June 2017)  
Editorial: 1 May 2017  
Advertising: 15 May 2017

Disclaimer: Whilst every effort is made to ensure accuracy, the Newspaper Editor and IIC can accept no responsibility for the content published in this newspaper. The opinions stated in individual articles belong to the author(s) and do not necessarily reflect those of the IIC, its officers or Council. No responsibility is assumed by the publisher for any injury and/or damage as a result of the application of any method, product, instructions or ideas in the publication. Inclusion of a product or treatment in this publication does not imply endorsement of the product or treatment.

© 2017 The International Institute for Conservation of Historic and Artistic Works



# Editorial

Welcome to the new issue of *NiC*, the first sporting IIC's brand-new look!

The new look follows some other changes that you might (I hope!) have noticed, namely the addition of some new sections to our e-paper, including the Fellowship corner, the Book review area and IIC's President column *From the President's Desk*. This is a good opportunity to thank Will Shank, our Book Review editor whose work ensures that we have a steady stream of interesting books to add to our reading lists.

Funding cuts to museums are sadly experienced the world over but lately the attention focused on the situation of institutions in the United States; on page three we feature statements made by US museums in response to budget cut threats made by the new Trump's administration.

In this issue Thomas Bower and Puneeta Sharma present their work on a collection of prints from Magdalene College in Cambridge. Following on we have a multi-author paper exploring a collaboration between established professionals and emerging conservators working on a project at the North Carolina Museum of art involving three works by Francescuccio Ghissi.

The latest roundtable discussion in IIC's dialogues initiative – *Viral Images. Exploring the historic and conservation challenges of objects created for social protest and solidarity* – took place at the Met in February. Read Eleonora Nagy's experience of the event which was also streamed live.

**Barbara Borghese**  
**Editor**

## Funding for the Arts threatened by Trump's budget

New York – American institutions have reacted to threats of funding cuts to vital programmes supporting art and culture in communities across America. The National Endowment for the Arts (NEA), along with the National Endowment for the Humanities (NEH) and the Corporation for Public Broadcasting are under threat of being abolished. Following the release of the budget, the Met in New York released the following statement: "The President's budget released today proposing the elimination of funding for the NEA, NEH and IMLS (Institute of Museum and Library Services) is short-sighted and does a terrible disservice to the American people. For more than 50 years, these programmes have provided, at modest cost, essential support to arts organizations throughout the country—many times sustaining the arts in areas where people do not have access to major institutions like the Metropolitan Museum. We will join with arts organizations and artists nationwide and work with our supporters in Congress to see that these vital funds are maintained."

Thomas Campbell, former Met Director wrote an op-ed in the [New York Times](#) outlining how every museum relies not only on financial support but also on the advocacy of the NEA to strengthen communities through the arts.

The Met stance was followed by a joint letter by Boston art museum directors highlighting how NEA and NEH funding has been instrumental at each museum, supporting extensive programs of public access, teaching and scholarship, conservation, collection and exhibition. The letter was signed by Peggy Fogelman, Norma Jean Calderwood Director at the Isabella Stewart Gardner Museum, Paul Ha, Director of the MIT List Visual Arts Centre, Jill Medvedow, Ellen Matilda Poss Director at the Institute of Contemporary Art, Martha Tedeschi, Elizabeth and John Moors Cabot Director at the Harvard Art Museums and finally Matthew Teitelbaum, Ann and Graham Gund Director at the Museum of Fine Arts, Boston.



Morte e assunzione della Vergine, Fra Angelico (circa 1395–1455) – Isabella Stewart Gardner Museum



# News in Brief...

## Conservation of second Khufu's boat begins in Cairo



© kairoinfo4u (CC BY-NC-SA 2.0)

The Khufu Boat Museum at the Giza pyramid complex

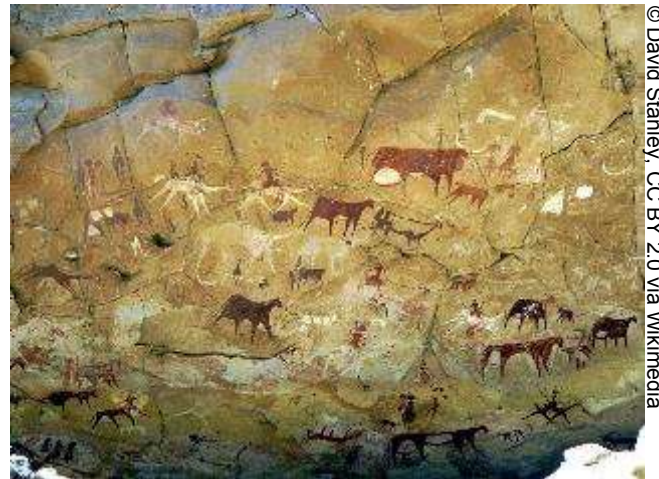
CAIRO: A significant fragment believed to be from a ship built for King Khufu has been unearthed from a site near the Great Pyramid at Giza. The plank is made of cedar wood and measures 26 metres (85 feet); it is believed to be part of a second boat discovered at this site in 1954, together with another boat, now housed in The Khufu Boat Museum, a small modern facility resting alongside the Great Pyramid. The two boats were first located by archaeologist Kamal El-Mallakh with Zaki Nour, who found the pits during routine cleaning of the southern side of the Great pyramid.

The team working on the recovery of the fragment have so far already uncovered 700 pieces of the boat and now believe that they have unearthed most of its pieces.

The fragments were located in a pit nearly three meters underground. They were moved to a nearby temporary conservation facility where they will receive the first treatments to stabilise their conditions.

The team working on the boat is composed of conservators and archaeologists from Japan and Egypt; once the work is complete it is hoped that the boat will be exhibited in the Grand Egyptian Museum scheduled to open in 2018.

## Chad cave paintings at World Heritage Site defaced



© David Stanley, CC BY 2.0 via Wikimedia

Manda Guéli Cave in the Ennedi Mountains, north-eastern Chad

N'DJAMENA – Mahamat Saleh Haroun, Chad's Culture Minister, denounced the vandalising of cave paintings at a UNESCO World Heritage Site in the Ennedi Mountains, a plateau located in the North-East of Chad, in the Ennedi Region. The caves are part of a stunning landscape which is near the border with Sudan.

Unknown vandals defaced the paintings leaving inscriptions and names on the 4000 years old artworks.

The Ennedi Plateau is home to thousands of images that have been painted and carved into the rock surface of caves, canyons and shelters, presenting one of the largest ensembles of rock art in the Sahara.

Source AFP



## Sistine Chapel digital mapping to aid future preservation

© Public Domain, via Wikimedia Commons



Detail of the ceiling of the Sistine Chapel

ROME – Thanks to modern technological advances in digital photography techniques, a five-year project to digitise the entire Sistine Chapel has begun and it will form the basis for any future restorations of the monument. The highly detailed images will in fact immortalise the Chapel and all its masterpieces in their current state, thus informing on any changes in its state of preservation in the future.

The last time all Sistine frescoes were photographed was between 1980 and 1994, during a landmark restoration project to clean the paintings for the first time in centuries.

Post production computer techniques included "stitching" of frames that photographers took while working out of sight for 65 nights from 7 p.m. to 2 a.m., when the chapel is closed to the public.

The set includes the entire chapel, including the mosaic floor and 15<sup>th</sup>-century frescoes by artists who have long languished in Michelangelo's giant shadow.

The photographers used a 10-metre-high (33 feet) portable scaffold and special telescopic lens. The results are now stored in a Vatican server holding 30 terabytes of information. Michelangelo finished the ceiling in 1512 and painted the massive "Last Judgment" panel behind the altar between 1535 and 1541.

## Rare Iranian carpet recently conserved at the Met



©The Metropolitan Museum of Art, Mr and Mrs Isaac D. Fletcher Collection, bequest of Isaac D. Fletcher

NEW YORK - Six 16<sup>th</sup>- and 17<sup>th</sup>- centuries Iranian carpets have recently being conserved in order to be displayed for the first time in decades as the focus of the exhibition *Carpets for Kings: Six Masterpieces of Iranian Weaving*, recently opened at The Metropolitan Museum of Art.

The carpets, representing examples of major classical styles of Islamic carpets, were acquired by The Met between 1910 and 1951 and were formerly part of collections belonging to the Royal House of Saxony.

Damage caused by a variety of factors over the past 400 to 500 years had made these six carpets too fragile for public viewing, despite their importance. Proceeds from the Museum's annual gala celebrating the Persian New Year, Noruz at The Met (2013), and the support of the Iranian-American community have made possible a conservation effort to address losses, remove old repairs, and stabilize the structures.

The exhibition will be featured on the Museum's website, as well as on Facebook, Instagram, and Twitter.

## Guatemala recovered 22 stolen archaeological items abroad in 2016

© Simon Burchell - Own work, CC BY-SA 4.0



Evidence of looters activities in Guatemala

GUATEMALA CITY – The Guatemalan Cultural Ministry announced during a press conference that a total of 22 important archaeological artefacts have been recovered during 2016. Guatemalan authorities recovered the archaeological pieces and fragments that had been stolen from Mayan sites and taken abroad to various locations including the United States, Switzerland, Italy and Germany.

During a ceremony held at the National Palace of Culture and hosted by Guatemalan Culture Minister Jose Luis Chea, the objects were presented to the public and the press.

National Archaeology Museum director Daniel Aquino told local press agencies that the 22 pieces will be stored at the museum and later incorporated into the permanent cultural heritage exhibition as well as being put on show in several of the Central American country's main museums. Some of the artefacts were voluntarily handed in while some others were recovered by

police or discovered when put up for sale at auction.

Most of the items had been looted from Guatemala in the 1960s and 70s.

Experts' understanding of Mayan sites in Guatemala has been hindered by the prolific activities of looters operating, at times undisturbed, among archaeological ruins in the country.

## Fire damages 15<sup>th</sup>- century Ottoman mosque in Greece



© Ggja - Own work, CC BY-SA 3.0

Bayezid (Mehmed I) Mosque, Didymoteicho, Evros, Greece

THESSALONIKI - A 15<sup>th</sup>- century Ottoman mosque located in Didymoteicho, in the Thrace region of Greece has been damaged by a fire that it is believed could have been caused by restoration work.

The Bayezid mosque was described by the Greek ministry of Culture as "a very important part of the country's cultural heritage" and confirmed the determination to continue carrying out the restoration which has been supported EU funds.

Initiated under Sultan Bayezid I and named after him, the mosque -- a cultural monument not in use for prayer -- is considered the largest in south-eastern Europe and of unique architectural and historical importance.

The Thrace region of Greece borders with Turkey and it is home to a small Muslim minority of Turkish origin. The Turkish foreign ministry offered support to help preserve the site.



## Colossal statue emerges from Cairo's slum



Relief of Psamtik I making an offering to Ra-Horakhty

CAIRO – A team of archaeologists from Egypt and Germany unearthed a large statue that was initially believed to represent Pharaoh Ramses II, but later proved to depict Psamtik I, a king that ruled Egypt between 664–610 BC.

The statue was found in ground water in a Cairo suburb located near the ruins of Ramses II's Sun temple in the ancient city of Heliopolis, prompting the team to speculate on the identity of the king before an inscription was found that disproved their assumptions.

The Sun temple suffered damages during the Greco-Roman period (about 332 B.C. to A.D. 395), and most of its obelisks and colossal statues were moved to Alexandria and Europe. The rest of the monument disappeared during the Islamic era (8<sup>th</sup>- to 13<sup>th</sup>- century A.D.), and its blocks were used in the construction of historic Cairo.

The discovery was announced to the press by Egypt Antiquities Minister Khaled al-Anani who said that the bust of the statue was found just before uncovering the head, the crown and fragment of the right ear.

During the same operation, the team also discovered a smaller statue depicting Pharaoh Seti II, Ramses II's grandson.

The team will now start work on the conservation of the statues. Eventually it is hoped that the largest statue could be placed at the entrance of the new Grand Egyptian Museum, set to open in 2018.

## Tomb of Christ restored



Church of the Holy Sepulchre

JERUSALEM – Early this month, the leaders of the Greek Orthodox, Armenian and Franciscan communities announced the end of the restoration of the Edicule surrounding the Tomb of Christ. The monument is located inside the Church of the Holy Sepulchre in Jerusalem and is believed to be the site where Jesus was laid after the crucifixion.

The Edicule is a small outer building encasing the rock tomb which has been damaged in various past occasions. Groundwater and water ingress had weakened the structure and its façade had darkened due to the burning of devotional candles.

The restoration was carried out by an interdisciplinary team from the National Technical University of Athens. The intervention did not disrupt pilgrims visiting the site as conservators worked often at night.

Funds for the project were donated by World Monument Fund, King Abdullah of Jordan and Palestinian President Mahmoud Abbas, among others.

# Conserving the Nicholas Ferrar Print Collection at Magdalene College Cambridge

Thomas Bower + Puneeta Sharma

*A major challenge for emerging conservators is how to continue developing their skills and experience after completing formal training. It is difficult to find graduate positions that do not require prior experience in a professional studio, and financial pressures make it hard to undertake unpaid voluntary work to develop this experience. The ideal solution to this problem is to carry out a paid internship with a heritage institution. This article explores the experiences of two interns at Magdalene College, University of Cambridge, which demonstrates the benefits of paid internships, and illustrates why the profession should perhaps be encouraged to support such programmes.*

© Image used with kind permission of the Masters and Fellows of Magdalene College Cambridge



**Fig. 1 Christ between the Virgin and St Anne** (lettered by Theodor Galle excudit; with an Oratio below and an indulgence from Alexander VI, 267 x 190 mm). The figure of God the Father in the sky above has been cut out to illustrate a Harmony of the Gospels.

## Introduction

Magdalene College (part of the University of Cambridge) has been a seat of education and scholarship for over 550 years. It began life in 1428 as a Benedictine hostel, later becoming known as Buckingham College after its patrons the Dukes of Buckingham. Following the untimely demise of two successive dukes at the scaffold, first 1483 and then in 1521, the institution was re-founded as the College of St Mary Magdalene in 1542.<sup>1</sup>

The college houses a variety of collection items, which are held in both the Samuel Pepys Library and the Old Library. As the Paper Conservation interns at the college during the summers of 2014 and 2015 respectively, the focus of our work was on a collection of 561 engravings from the Nicholas Ferrar print collection dating to the early 17th century. Nicolas Ferrar (1592-1637) was a businessman affiliated with the Virginia Company, who had also studied medicine. He served as a Member of Parliament and later became a clergyman, devoting his life to God.<sup>2</sup> It was during his time in continental Europe between 1613 and 1617 that he purchased a large collection of engravings, which depict various scenes, mainly stories from the Christian tradition.<sup>3</sup>

<sup>1</sup> Magdalene College (2016) *College History*. [Online]. Available at: <<http://www.magd.cam.ac.uk/college-history/>> [Accessed on 20 November 2016].

<sup>2</sup> Thrush, A & Ferris, J.P eds. (2010) *FERRAR (FARRER), Nicholas (1593-1637), of St. Sithes Lane, London; later of Little Gidding, Hunts* [originally published in *The History of Parliament: the House of Commons 1604-1629*]. [Online]. Available at: <<http://www.historyofparliamentonline.org/volume/1604-1629/member/ferrar-nicholas-1593-1637>> [Accessed: 1 October 2016].

<sup>3</sup> Ransome, D. (1992) *The Ferrar Papers 1590-1790 in Magdalene College Cambridge*. [Online]. Wakefield, United Kingdom: Microform Academic Publishers. Available at: <<http://www.microform.co.uk/guides/R97513.pdf&gt;>> [Accessed 30 July 2014].





### Why conserve the Ferrar Prints?

The principle use of the Nicholas Ferrar print collection is for study by scholars, but they are also occasionally put on display or lent to other institutions for temporary exhibitions. The broad objectives of this project were not only to better stabilise the prints but also to improve both storage and access for future research and/or display purposes. The majority of the prints were in fair condition, nonetheless, the passage of time had resulted in a build-up of dust and dirt over their surfaces and minor peripheral damage caused by poor handling and inappropriate storage. A small number of the prints had suffered more extensive damage such as significant tears, losses, fragmentation and discolouration caused by chemical degradation within the paper.

Interestingly, some missing sections from the prints did not require treatment. A number of the prints were used by the children of the Ferrar family to illustrate a Harmony of the Gospels under Nicolas Ferrar's guidance (Ransome, 1992),<sup>4</sup> and many show where excisions were made using a sharp tool. Some of these excisions were not adhered to pages in the Harmony of Gospels and remained alongside their original prints. These were not reattached to the prints but kept together because they are an important aspect of the collection's history.

### Support and guidance

The Magdalene College internship programme was well designed for emerging conservation professionals in the way that it balanced support and supervision with the opportunity to work independently. Richard Farleigh, Paper Conservator at the Fitzwilliam Museum and Catherine Sutherland, Deputy Librarian at the Pepys Library, provided technical support and guidance. However, we were also required to work independently on the day-to-day organisation and execution of conservation treatments and preservation work. This arrangement enabled us to develop our technical skills and judgement by taking individual responsibility for our work, whilst also providing a strong supportive framework when we needed to ask for help.

### Setting up a temporary studio

Most the conservation treatments took place *in situ* in the Old Library at Magdalene College, where one of the rooms was converted into a temporary 'pop up' studio. Working in the heart of the college was enjoyable but this arrangement presented challenges, especially with the limited space available and the need to take care of the library collection on the surrounding shelves. Careful planning was required to identify both essential equipment and an assortment of materials for the temporary space. It was also important to be organised and establish a clear workflow, with different areas of the room allocated to specific tasks.

### Treatments at the Old Library

#### *Dry surface cleaning*

After visually examining each print, surface cleaning was undertaken to remove dirt, dust and accretions from the surface of the paper. During examination, we discovered that the printing ink on some prints was softer and less well bound. In these instances, we avoided heavy cleaning on the recto and instead carried out light dusting on the surface. A soft brush was used initially before adopting a smoke sponge to address more engrained dirt on the prints.

#### *Realigning creases and pressing*

Minor creases and distortions were realigned to establish aesthetic unity within each print. By lightly applying



© Image used with kind permission of the Masters and Fellows of Magdalene College Cambridge

Fig. 2 The temporary conservation studio in the Old Library



<sup>4</sup> As above, reference 3.

moisture (either deionised water or a 1:1 mix of industrial methylated spirits with deionised water, using a brush or misting spray) to the affected area, the paper became more malleable, which allowed us to smooth out creases with a Teflon bone folder and Bondina interlayer. On other prints, the whole sheets were humidified before controlled pressing between blotters.

### *Tear repairs*

Tears were repaired using a 2.5 % solution of sodium carboxy methyl cellulose and Japanese tissue. On large areas of damage, temporary repairs made from small tabs cut from Japanese paper, were carried out beforehand to align tears or support loose fragments. Once positioned, a Japanese paper was carefully cut to mirror the contour of a tear or damaged area and thus provide adequate support.

### **Treatments at the Fitzwilliam Museum**

© Image used with kind permission of the Masters and Fellows of Magdalene College Cambridge



**Fig. 3** A lining treatment carried out at the Fitzwilliam Museum.

One of the great benefits of the internship was the variety of tasks and an opportunity to carry out some more advanced treatments, both in situ at the Old Library and in the paper conservation studio at the Fitzwilliam Museum. This allowed us to hone our practical skills whilst also improving the condition of the more severely damaged prints that may not otherwise have received the necessary interventive treatment.

### *Blotter washing*

Blotter washing was a useful option for those prints that were structurally damaged and required a firm support during treatment. Two pieces of blotting paper (dampened with deionised water) were used, each slightly larger than the object. The humidified print was positioned on the wetted blotters, to allow for diffusion and capillary action to take place and in so doing, drawing discolouration from the

### *Immersion washing*

object. Using two sheets of blotter allows the conservator to swap the blotters when one becomes discoloured with degradation products. A sheet of glass was placed on top of the object and blotters, which effectively prevented the object from drying out and maintained the intimate contact. Furthermore, the glass sheet allows the conservator to observe perceivable change during treatment. After blotter washing, the prints were dried and pressed in a controlled manner.

### *Lining*

Immersion washing was another technique employed for those prints that were more severely discoloured or stained. Various methods of float and immersion washing were used, and although relatively straightforward this technique proved especially effective in removing discolouration and soluble acidity. Discoloured bath water was changed when required and occasionally, the temperature was increased to assist the aqueous process. In general, the prints were washed from anywhere between 30 minutes to 2 hours.

Extensively torn and fragmented prints were lined after washing using a sheet of 25 gsm Japanese Kozo paper and dilute wheat starch paste. Kozo paper was chosen for its strength and durability, which derives from its long fibres and its freedom from impurities. Furthermore, any inscriptions to the verso were generally still legible. The objects were air dried under mild tension on a drying board, or under weights, as appropriate. The lining process enabled tears to be repaired quickly and loose fragments to be re-adhered, as well as providing an overall strengthening of the object. Where there were losses, the missing areas were infilled with using a sympathetic Japanese paper to both strengthen the object and improve its appearance.

### **Rehousing**

Once the prints were conserved, a new housing system was established that involved individual polyester sleeves and 550 micron card stiffeners. The catalogue number of each print was written in pencil



>> on the top right hand corner of the card to avoid dissociation and aid retrieval. The prints were then placed inside conservation grade boxes for storage and labelled accordingly.

© Image used with kind permission of the Masters and Fellows of Magdalene College Cambridge



Figs. 4 & 5: The Resurrection of Christ by Raphael Sadeler II (Wurz 7) (355 x 226 mm. After Dirck Barendsz), before and after conservation, including washing and lining. Figs. 4 & 5: The Resurrection of Christ by Raphael Sadeler II (Wurz 7) (355 x 226 m

## Results

The preservation solution for the 561 engravings was simple and cost effective. The materials used during all stages of the project were of high-grade conservation quality and will remain stable over time, thus helping to protect the prints from further deterioration and any unwanted change. The pleasing visual appearance of the prints in their new housing enables them to be displayed more easily when required and furthermore, such a system affords flexibility should an alternative be considered more appropriate in the future.

## Visits to Local Studios

In addition to practical conservation work, we also benefited enormously from visits to local conservation studios that were arranged by our supervisors. We were lucky to meet members of staff and hear more about the collections at the Cambridge Conservation Consortium, the Parker Library, the Churchill Archive, Museum Conservation Services Ltd, the Cambridge University Library and the Fitzwilliam Museum. These visits allowed us to meet experienced conservators and talk to them about their work. We learned a huge amount about how each institution approaches conservation and the various challenges across each collection.

## Conclusion

The internship programme benefitted both our host institution and us as individuals. We were able to further develop our practical skills, technical knowledge and professional judgement and to improve the condition of a fascinating and valued collection of historic prints. We are grateful to have had the opportunity to work on this project, which was an invaluable experience for the both of us, helping to bridge the gap between our initial training as students and the beginning of our careers as conservators.

### Acknowledgements

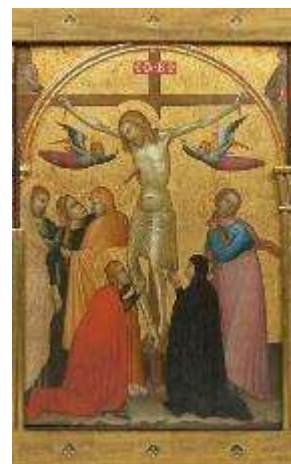
We would like to thank Dr Jane Hughes and Catherine Sutherland from Magdalene College Cambridge, and Richard Farleigh from the Fitzwilliam Museum for their support and guidance during and since the internship.

**A version of this paper was presented by the authors in the Old Library during the Ferrars: A Conference at Magdalene College, University of Cambridge, in September 2016.**



# Bringing together undergraduates, graduate students and professionals in cultural heritage preservation. A case study from the North Carolina Museum of Art

E. S. Uffelman + W. Brown + C. Caspers +  
T. Soley + K. Marsh-Soloway



*Washington and Lee University (W&L) and the North Carolina Museum of Art (NCMA) have had an ongoing collaboration for several years in which W&L undergraduates and faculty staff work with museum professionals at NCMA. This work benefits both institutions---W&L is able to provide NCMA with useful data about their collection, and W&L students and faculty staff get the chance to work with international experienced art conservators and an outstanding collection of cultural heritage material. In this paper, the portable X-ray fluorescence spectroscopy and infrared imaging (IR) of three works by Francescuccio Ghissi are described in the context of an NCMA exhibition that run from September 2016 to March 2017 to then move on to the Portland Art Museum from March till July 2017. This exhibit unifies the extant works of a dispersed altarpiece and displays a reconstruction project that has recreated a lost panel missing from the altarpiece.*

## **Introduction**

This paper uses a specific example from Washington and Lee University's ongoing collaborations with the North Carolina Museum of Art to illustrate the benefits of linking W&L's portable instrumentation (pXRF, multispectral imaging, fibre optic reflectance spectroscopy FORS, IR imaging) with NCMA's collection of art. Travelling to museums with non-destructive instrumentation works best when conservators have formulated specific questions, such as whether or not degraded smalt is present in a painting <sup>1</sup>, what pigment distribution looks like in a painting with significant overpainting <sup>2</sup>, are the pigments in objects consistent with their attributed date or anachronistic <sup>3</sup>, are pigments subject to degradation present in locations where their degradation makes them difficult to assess <sup>4-6</sup>. In this project, non-destructive methods supported a painting reconstruction project.

## **The Project**

Francescuccio Ghissi was the most prominent pupil of well-known 14th century Italian painter, Allegretto Nuzi <sup>7</sup>. In 2016, the NCMA opened an exhibition that reunites eight of the nine scattered components of an altarpiece attributed to Ghissi (Figure 1): The Art Institute of Chicago 1937.1006 <sup>7-8</sup>, The Metropolitan Museum of Art: 69.280.1-3 <sup>9</sup>, Portland Art Museum: 61.32, and NCMA: 60.17.18-20. One panel, the last portion of the altarpiece, has been missing for over a hundred years and there is no record of its subject. An exciting aspect of the exhibition is that it features Charlotte Caspers' hypothetical reconstruction of the missing panel, created in collaboration with Dr. David Steel, the NCMA's Curator of



>> European Art. Caspers wanted as much insight as possible into the materials used to construct the other panels, and understanding the pigments was critical to that investigation. Thus, portable X-ray fluorescence spectroscopy (pXRF) was used to analyse multiple spots in the NCMA Ghissi paintings, and InGaAs IR imaging was also performed, along with IR imaging with a modified Lumix camera.



Fig. 1: The above altarpiece, *Altarpiece with Crucifixion and Scenes from the Life of St. John the Evangelist*, has been on display at the NCMA exhibition *Reunited: Franciscuccio Ghissi's St. John Altarpiece*. The missing panel, bottom right, was recreated by Charlotte Caspers, in the style of Franciscuccio Ghissi; on display is a photo reproduction of the virtually aged panel (Duke Applied Mathematics Program). From top left to right: *The Resurrection of Drusianal*, ca. 1370, tempera on wood, 13 1/2 x 14 1/2 in. (34.3 x 36.8 cm), gift of the Samuel H. Kress Foundation, 61.32, Portland Art Museum; *St. John the Evangelist Reproving the Philosopher Crato*, ca. 1370-1380, tempera and gold leaf on panel, 14 x 16 1/4 in. (35.6 x 41.3 cm), gift of the Samuel H. Kress Foundation, GL.60.17.18, North Carolina Museum of Art; *The Crucifixion*, ca. 1370, tempera on panel, 28 5/8 x 19 3/4 in. (72.7 x 50.3 cm), Mr. and Mrs. Martin A Ryerson Collection, 1937.1006, The Art Institute of Chicago, Photography © The Art Institute of Chicago; *Saint John the Evangelist with Acteus and Eugenius* ca. 1370, tempera on wood, gold ground, 14 3/8 x 16 1/4 in. (36.5 x 41.3 cm), gift of Mrs. W. Murray Crane, 1969, 69.280.2, The Metropolitan Museum of Art; *Saint John the Evangelist Causes a Pagan Temple to Collapse*, ca. 1370, tempera on wood, gold ground, 14 1/8 x 15 1/4 in. (35.9 x 38.7 cm), gift of Mrs. W. Murray Crane, 1969, 69.280.3, The Metropolitan Museum of Art. Bottom left to right: *Acteus and Eugenius Implore St. John the Evangelist to Restore Their Wealth*, ca. 1370-1380, tempera and gold leaf on panel, 13 3/4 x 15 in. (34.9 x 38.1 cm), gift of the Samuel H. Kress Foundation, GL.60.17.19, North Carolina Museum of Art; *Saint John the Evangelist Raises Sathesus to Life*, ca. 1370, tempera on wood, gold ground, overall 14 1/8 x 16 1/8 in. (35.9 x 41 cm), painted surface 13 3/4 x 15 1/2 in. (34.9 x 39.4 cm), gift of Mrs. W. Murray Crane, 1969, 69.280.1, The Metropolitan Museum of Art; *St. John the Evangelist and the Poisoned Cup*, ca. 1370-8, tempera and gold leaf on panel, 13 7/8 x 15 3/16 in. (35.2 x 38.6 cm), gift of the Samuel H. Kress Foundation, GL.60.17.20, North Carolina Museum of Art; Charlotte Caspers, in the style of Franciscuccio Ghissi, a photo reproduction of the virtually aged panel (Duke Applied Mathematics Program).

### Creation of the Collaboration

Uffelman met Caspers at a conference in 2007 and learned that she had recently completed training as an expert in painting reconstruction. The relationship grew when Caspers graciously agreed to meet Uffelman's students during iterations of Netherlands course work<sup>10-11</sup>. When Uffelman and Caspers met in the spring of 2012, Caspers suggested W&L's pXRF and other portable instrumentation could assist her with a project she was about to undertake at NCMA, in which she was to create a missing panel from an altarpiece by Franciscuccio Ghissi. Caspers electronically introduced Uffelman to Brown; Uffelman knew Brown professionally from his collaborative work with Mass<sup>12</sup>. Brown arranged for Uffelman, Soley, and Marsh-Soloway to spend a day at NCMA in September of 2012 to perform pXRF analyses and IR imaging of the three NCMA Ghissi paintings. Soley and Marsh-Soloway were W&L senior Art History majors who had taken Uffelman's courses on the technical examination of 17<sup>th</sup>-century Dutch painting, and Soley had also worked with Uffelman on IR imaging of a painting in Portugal, while Marsh-Soloway had performed SEM studies at RCE with Dr. Bill Wei in Amsterdam on antique silver. A W&L Lenfest faculty summer grant provided travel funding to NCMA.

The NCMA Ghissi panels were imaged with a Goodrich InGaAs IR camera (Figures 2 and 3) and with an XNite Lumix LX5 UV+VIS+IR camera whose IR blocking filter was removed (MaxMax). [715 nm or 1000 nm blocking filters (MaxMax) were used to eliminate electromagnetic radiation of shorter wavelengths than

&gt;&gt;

those values. This is a system Dr. Greg Smith graciously allowed Uffelman to duplicate from the Indianapolis Museum of Art.] Hints of the underdrawings reported using a *vidicon* system in 1995 were detected by the InGaAs system on all three paintings. Both cameras revealed many retouchings (e.g., Figure 3) from a 1995 conservation treatment and emphasized the need for careful work with UV illumination for positioning the pXRF (Figure 4).

### pXRF Analyses

pXRF analyses of the Ghissi panels were straightforward.

Strong calcium signals were present in all spectra, and sulphur signals were often distinguishable from lead M lines in areas where no lead white or less lead white was used—all of this is consistent with the Italian use of gypsum in gesso layers for panel preparation. The lead white was confined to specific colours which were tinted with white. Caspers noted that there is a light-blue underpainting underneath St. John's drapery, this would be lead white and azurite. Also, the 'shot coloured' drapery of Aristodemus is underpainted with lead-tin yellow. There is no lead present in the red samples for the red drapery of the figure with turban, just Mercury. Copper was detected in areas of green and blue. Iron was detected throughout the spectra, but was, not surprisingly, strongest in areas that had an ochre appearance. Interestingly, no manganese was detected at any appreciable level in any of the brown background areas. Mercury from vermilion was responsible for red areas. One bold yellow colour was clearly attributable to lead-tin yellow.

### Lessons Learned

For Caspers and Brown, the work provided confirmation of pigment hypotheses based on optically examining the paintings. Sightings of K, Ca, S, Fe, Cu, Sn, Hg, and Pb were useful, and the possible assignment of Al in lake areas and the possible assignment of P in a black area were suggestive. The absence of Mn in any abundance in the brown areas was relevant to pigment choices to be made in the reconstruction. Charlotte Caspers' reconstruction has been the reference for the virtual rejuvenation of the Ghissi Altarpiece by the Mathematics Department at Duke University using novel colour mapping techniques and a crack removal algorithm—the virtual altarpiece, approximating what it might have looked like when first completed in Ghissi's studio, has been displayed on a large monitor in the exhibition. Charlotte Caspers' panel was virtually aged using colour mapping techniques and an algorithm developed to add age cracks and has been displayed with the altarpiece.



Fig.2 Marsh-Soloway, Caspers, and Soley use the InGaAs IR camera to examine NCMA 60.17.19.



Fig.3 IR image (900-1700 nm) of NCMA St. John and the Poisoned Cup (60.17.20) (Goodrich SU640SDV-1.7RT/RS170 InGaAs Area Camera 640 x 512 pixel; 25 micron pixel pitch). Areas of retouching are clearly visible.



Figure 4. UV-induced visible fluorescence image of NCMA 60.17.20 with the pXRF. Areas of retouching are clearly visible.



&gt;&gt;

Uffelman learned considerably more about the art history of 14<sup>th</sup>- century Italian painting and learned about Dr. Ingrid Daubechies' work in mathematical brush stroke analysis at Duke <sup>13</sup>, since Daubechies also participated in the Ghissi project. Uffelman could contextualize Daubechies' work with efforts his students learned in The Netherlands from Eric Postma <sup>14</sup>. He saw that NCMA not only possessed a first class collection of old master paintings, which he already knew, but that the conservators were tremendously collaborative, friendly, and helpful.

For Soley, and Marsh-Soloway, visiting NCMA enabled them to further practice their knowledge gained from Uffelman's two courses on the technical examination of 17<sup>th</sup>- century Dutch painting. Carefully comparing IR images taken between 715-1050 nm versus 1000-1050 nm versus 900-1700 nm was valuable. This was especially true for Soley, who had used 715 -1050 nm and 1000-1050 nm to image a painting in Portugal, but could not use the InGaAs camera in Portugal due to US ITAR export restrictions. [n.b., InGaAs camera users MUST familiarise themselves with US ITAR regulations to avoid serious legal trouble with US law!] In the pXRF analyses, the contrast of gypsum used in Italian gesso versus the chalk used with glue in northern Europe was obvious to them. They practiced their pigment identification skills and reviewed the sum peak and escape peak pitfalls possible in spectrum analysis, as well as peak interference issues (e.g., the lead M lines versus the sulphur K lines). Soley, currently performing PhD work in art history at Columbia adds, "When encountering an artwork (in my research or otherwise), I am now in the habit of approaching it as a material object rather than merely an image, and thus take advantage of the physical indicators that reveal a plethora of information about the artwork, artist, historical context, etc. This work expanded my undergraduate research on the *Viseu Altarpiece* with Dr. Andrea Lepage, where we used IR imaging to gain a clearer picture of the panel in question." The NCMA visit allowed Marsh-Soloway to build upon expertise gained with Bill Wei at RCE. Both experiences also drove her Senior Art History thesis, *Colliding Cultures at Chora Church*. This thesis examined the hidden images of both Christian and Muslim iconography. Marsh-Soloway remains passionate about Art History. The experiences helped build a life-long curiosity to look beneath the painting and never stop questioning. Today she works for the Coca-Cola Scholars Foundation which provides scholarships for high school seniors to pursue their college careers in all fields.

### **NCMA Collaboration Expands**

Since 2012, W&L has made yearly research visits to NCMA, with both institutions sharing the travel costs. In addition to pXRF and IR imaging, recent efforts have utilized W&L's new fibre optic reflectance spectrometer (FORS) and multispectral imaging system based on Dr. John Delaney's design at the National Gallery of Art (Washington, DC) <sup>15</sup>. In addition to working with the full NCMA conservation staff, Uffelman and his students have been able to learn Dr. Warren Warren's cutting edge conservation science methods via collaboration with Tana Villafana <sup>16</sup>. All of this work feeds not only into Uffelman's courses on the technical examination of 17<sup>th</sup> century Dutch painting, but also into General Chemistry courses for W&L science majors, and, crucially, into NSF Chemistry in Art Workshop material taught to university faculties from around the US.

### **Acknowledgments**

We gratefully acknowledge the NSF for funding W&L's instruments reported here (NSF MRI grants CHE-0959625, and CHE-1337481). W&L University Lenfest funds permit travel to NCMA. Useful conversations with Dr. David Steel, Dr. Greg Smith, Dr. John Delaney, and Dr. Kate Dooley are gratefully acknowledged. Related research at NCMA not reported here with Tana Villafana, G. Perry Hurt, and Noelle Ocon is gratefully appreciated and will be the subject of future writing.

### **References**

1. Uffelman, E. S.; Court, E.; Marciari, J.; Miller, A.; Cox, L., Handheld XRF Analyses of Two Veronese Paintings. In *Collaborative Endeavors in the Chemical Analysis of Art and Cultural Heritage Materials*, Lang, P. L.; Armitage, R. A., Eds. American Chemical Society: Washington, DC, 2012; pp 51-73.
2. Bradley, L. P.; Meloni, S.; Uffelman, E. S.; Mass, J. L., Scientific Examination and Treatment of a Painting by Gijsbert Gillisz d'Hondecoeter in the Mauritshuis. In *Collaborative Endeavors in the Chemical Analysis of Art and Cultural Heritage Materials*, Lang, P. L.; Armitage, R. A., Eds. American Chemical Society: Washington, DC, 2012; pp 23-49.
3. Uffelman, E. S.; Fuchs, R. W. I.; Hobbs, P. A.; Sturdy, L. F.; Bowman, D. S.; Barisas, D. A. G., Technical Examination of Cultural Heritage Objects Associated with George Washington. In *Collaborative Endeavors in the Chemical Analysis of Art and Cultural Heritage Materials*, Lang, P. L.; Armitage, R. A., Eds. American Chemical Society: Washington, DC, 2012; pp 251-283.
4. Uffelman, E. S.; Hobbs, P. A.; Barisas, D. A. G.; Mass, J. L., pXRF analyses of Louise Herreshoff's paintings in relation to CdS and other pigment degradation issues. *Applied Physics A: Materials Science & Processing* **2013**, A111, 9-14.

5. Mass, J. L.; Opila, R.; Buckley, B.; Cotte, M.; Church, J.; Mehta, A., The photodegradation of cadmium yellow paints in Henri Matisse's *Le Bonheur de vivre* (1905-1906). *Appl. Phys. A: Mater. Sci. Process.* **2013**, *111* (1), 59-68.
6. Pouyet, E.; Cotte, M.; Fayard, B.; Salomé, M.; Meirer, F.; Mehta, A.; Uffelman, E. S.; Hull, A.; Vanmeert, F.; Kieffer, J.; Burghammer, M.; Janssens, K.; Sette, F.; Mass, J. "2D and X-ray and FTIR micro-analysis of the degradation of cadmium yellow pigment in paintings of Henri Matisse" *Applied Physics A: Materials Science & Processing*; **2015**; *121*, 967-980.
7. Christiansen, K., Fourteenth-Century Altarpieces. *Metropolitan Museum of Art Bulletin* **1982**, *40* (1), 46-49.
8. Zeri, F., Italian Paintings. A Catalogue of the Collection of the Metropolitan Museum of Art. Sieneese and Central Italian Schools. In *Italian Paintings. A Catalogue of the Collection of the Metropolitan Museum of Art. Sieneese and Central Italian Schools*, Metropolitan Museum of Art: New York, 1980; pp 17-18.
9. Lloyd, C., Italian Paintings before 1600 in the Art Institute of Chicago. A Catalogue of the Collection. In *Italian Paintings before 1600 in the Art Institute of Chicago. A Catalogue of the Collection*, Art Institute of Chicago: Chicago, 1993; pp 106-110.
10. Uffelman, E. S., Teaching Science in Art: Technical Examination of 17th-Century Dutch Painting as Interdisciplinary Coursework for Science Majors and Nonmajors. *J. Chem. Educ.* **2007**, *84*, 1617-1624. see also: Uffelman, E. S.; Abraham, L.; Van den Burg, J.; Florescu, S.; Hoppenbrouwers, R.; Van der Knaap, F.; Koenen, J.; Te Marvelde, M.; Van Putten, H.; Roeders, J.; Seymour, K. "A New Three Legged Stool: Research and Educational Ventures Between the Frans Hals Museum, Stichting Restauratie Atelier Limburg, and Washington and Lee University" International Council of Museums Conservation Committee 17th Triennial Conference Preprints, Melbourne, Australia, 15-19 September **2014**, ed. J.Bridgland, art. 0310, 8 pp. Paris: International Council of Museums. and see also Uffelman, E. S. *The Emergence and Spread of "Chemistry in Art" Undergraduate Courses in United States Universities*, International Council of Museums Conservation Committee Triennial 16th Conference, Lisbon, Portugal, September 19-23, 2011, **2011**; Criterio: Lisbon, Portugal, 2011; paper 312; 1-8.
11. Uffelman, E. S., A Review of Materials for Teaching Science in Art: Technical Examination of 17th-Century Dutch Painting as Interdisciplinary Course Work for Non-Science and Science Majors. *J. Chem. Educ. online paper* **2007**, *84*, 38 pages.
12. Woll, A. R.; Mass, J.; Bisulca, C.; Cushman, M.; Griggs, C.; Wazny, T.; Ocon, N., The Unique History of The Armorer's Shop: AN APPLICATION OF CONFOCAL X-RAY FLUORESCENCE MICROSCOPY. *Studies in Conservation* **2008**, *53* (2), 93-109.
13. Cornelis, B.; Ruzic, T.; Gezels, E.; Dooms, A.; Pizurica, A.; Platisa, L. C., J.; Martens, M.; DeMey, M.; Daubechies, I., Crack detection and inpainting for virtual restoration of paintings: The case of the Ghent Altarpiece. *Signal Processing* **2013**, *93*, 605-609.
14. Bereznoy, I. J.; Postma, E. O.; Herik, H. J., Automatic extraction of brushstroke orientation from paintings. *Machine Vision and Applications Journal* **2009**, *20*, 1-9.
15. Delaney, J. K.; Riccardi, P.; Glinsman, L. D.; Facini, M.; Thoury, M.; Palmer, M.; De La Rie, E. R., Use of imaging spectroscopy, fiber optic reflectance spectroscopy, and X-ray fluorescence to map and identify pigments in illuminated manuscripts. *Studies in Conservation* **2014**, *59* (2), 91-101.
16. Villafana, T. E.; Brown, W. P.; Delaney, J. K.; Palmer, M.; Warren, W. S.; Fischer, M. C., Femtosecond pump-probe microscopy generates virtual cross-sections in historic artwork. *Proc. Natl. Acad. Sci. U. S. A.* **2014**, *111* (5), 1708-1713.

**Erich Uffelman** works at the Department of Chemistry and Biochemistry, Washington and Lee University; [uffelmane@wlu.edu](mailto:uffelmane@wlu.edu)

**William Brown** from the Art Conservation centre, North Carolina Museum of Art; [william.p.brown@ncdcr.gov](mailto:william.p.brown@ncdcr.gov)

**Charlotte Casper** is an artist/conservator and guest lecturer in historic painting techniques at the University of Amsterdam; [charlottecaspers@me.com](mailto:charlottecaspers@me.com)

**Teresa Soley** from the Department of Art History and Archaeology, Columbia University  
**Kathryn Marsh-Soloway**, Coca-Cola Scholars Foundation, Metro-Atlanta





## Reviews

# Crossing Borders in Research and Conservation

Viennese conference illustrates recent Indo-Austrian collaborations and joint projects in India

Martina Haselberger + Gabriela Krist

Austria and India have decades-long history of intense collaboration in the field of architectural and art historical research as well as conservation. Following the jubilee conference “Cultural Heritage Counts” in 2009 in New Delhi, which celebrated 60 years of Austrian-Indian Diplomatic Relations, the Institute of Conservation of the University of Applied Arts Vienna instigated a follow-up conference held on 9<sup>th</sup> and 10<sup>th</sup> December 2016 in Vienna.

Entitled “Crossing Borders – Recent Developments in Research and Conservation in India” the conference gathered well-known Austrian experts, who dedicated much time and efforts to research and conservation projects in India. Representatives of major Austrian universities, including the University of Vienna, Innsbruck and Graz, the Technical University Graz and the University of Applied Arts Vienna, the Austrian Academy of Sciences and the Museum of Applied Arts Vienna were among the participants.

An esteemed group of attendees from the India included a well-known researchers from INTACH, the Director of the Archaeological Survey of India, the major organization for archaeological research and



protection of cultural heritage in India. Co-organized by the Indian Embassy in Vienna and supported by the Indian Council for Cultural Relations and the Eurasia Pacific Uninet, the conference altogether comprised 19 lectures. Topics included results of research and conservation projects at significant sites of the Buddhist-Hindu cultural heritage in the Indian Subcontinent: the Nagara Temples in the Kulu Valley, the monastery and temple complex in Dangkhari, the Buddhist temple complex in Nako as well as the cultural heritage of Chamba, Ajanta and Ladakh. Furthermore, the latest conservation efforts in Patan in Nepal and new findings about Agra were presented.



© University of Applied Arts Vienna, Peter Kalnz

>>  
The conference not only highlighted the successes achieved so far as a result of the Indo-Austrian collaboration in the preservation of cultural heritage but also pointed out the still



© University of Applied Arts Vienna, Peter Kainz

Presentation of the recently published book “Nako. Research and Conservation in the Western Himalayas”

existing high demand of conservation measures. Exchange of knowledge and experiences among the participants clearly stated this future task.

It also allowed for the consolidation of already established projects i.e. the collection care project of the Institute of Conservation in the Napier Museum in Trivandrum and the conservation project in Patan together with the Kathmandu Valley Preservation Trust.

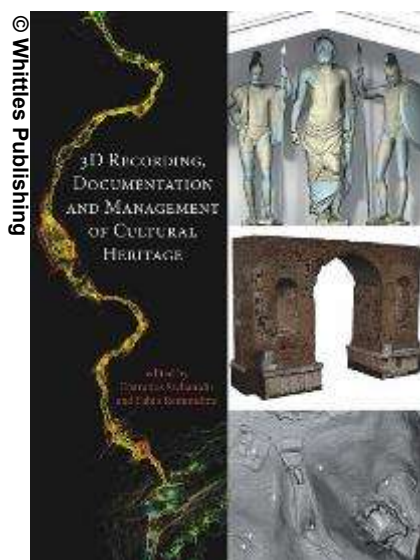
A follow-up of this conference was envisaged by all participants – its beneficial and strengthening effects on the ongoing joint efforts in the preservation of India’s cultural heritage have already emerged. This event once again showed that only together, with a common approach and conservation specialists, architects, chemists and art historians working hand-in-hand, a long-term success can be achieved.



## Book Reviews

# 3D Recording, Documentation and Management of Cultural Heritage

reviewed by Alain Colombini



Edited by Efstratios Stylianidis and Fabio Remondino, Whittles Publishing, 2016, ISBN 978-184995-168-5 Hardback, 400 pages, liberally illustrated, full colour throughout.

My general opinion is that as a scientist of contemporary art and, most recently, a 3D documentation user, I found this book very valuable. It can reach an eclectic audience in providing a broad spectrum of the subject. Significant details of acquisition techniques and data treatment tools would fulfill most of the expectations of the Cultural Heritage community. Nevertheless, I would have appreciated some examples of contemporary artwork case studies.

The book is attractively designed and of a handy size. The Preface could have made the book more attractive by highlighting the fundamental purpose of it with regard to the implementation of these new 3D tools in Cultural Heritage science.

The list of authors, arranged by name in alphabetical order, relevant backgrounds and area of interest/expertise, is quite comprehensive, although editors could have appeared in a separate topic.

### Chapter 1 Introduction- Current Trends in Cultural Heritage and Documentation

Mario Santana Quintero and Rand Eppich

The authors frame the purpose of this book with very distinctive sub-chapters/trends regarding the new technology for recording, visualising and documenting as valuable resources for Cultural Heritage management equally dictated by conservation needs. The layout of figures is well balanced but legends are not related to the text! (except for Fig. 1.10)

### Chapter 2 Conservation Techniques in Cultural Heritage

Minna Silver

The author runs through the 3D recording and documentation tools available for the preservation of Cultural Heritage artefacts. This chapter introduces the current trends in 3D technology, starting with the most experienced field in documentation and visualization of archaeological and prehistoric sites. Fully detailed case studies of various sites bring to the fore the improvement of techniques used up until now. A very comprehensive overview of caption and data treatment is given through some case studies, when applied to the conservation and documentation of both monuments, sculptured monument and objects of various sizes and type of materials.

Reference publications and books are quite significant.

>>

### Chapter 3 Cultural Heritage Management Tools: The Role of GIS and BIM

Anna Osello and Fulvio Rinaudo

This chapter focuses on the benefit of geographic system acquisition technology and building information modeling, as applied to Cultural Heritage documentation. It concentrates on the benefit of complementary approaches of the documentation and management to the Cultural Heritage community, and thus due to development of software which is now made available as open source.

#### **Chapter 4 Basics of Photography for Cultural Heritage Imaging**

Geet Verhoeven

This chapter is the longest part of the book. At first, it touches upon the physics of colour, radiation and the general principles of imaging. Upon reading it, this section turned out to be very essential for the understanding of the passage from photographic emulsion to digital imaging. FIG. 4.15 is key and so is the overall chapter, which provides required knowledge to anyone involved in 3D recording, data treatment, documentation and management of Cultural Heritage. References are also significant.

#### **Chapter 5 Basics of Image-Based Modelling Techniques in Cultural Heritage 3D Recording**

Efstratios Stylianidi, Andreas Georgopoulos and Fabio Remondino

This chapter is very important for the understanding of the documentation of Cultural Heritage. It is at the right place in the book where digital images are significantly treated along with the image acquisition tools, procedures and mode of calculations.

The case studies section emphasizes the use of 3D recording for Cultural Heritage documentation needs in relation to the description and monitoring of a monument, restoration purposes and virtual reconstruction. Nevertheless, more case studies of small and medium size, both ancient and contemporary objects could have complemented this chapter.

#### **Chapter 6 Basics of Range-Based Modeling Techniques in Cultural Heritage 3D Recording**

Pierre Grussenmeyer, Tania Landes, Michael Doneus and José Luis Lerma

Following on from the previous topic, this chapter focuses on data acquisition techniques, mostly by laser scanning systems with various approaches. Sections cover aspects of terrestrial scanning data applied to Cultural Heritage through archaeological and large architectural objects.

#### **Chapter 7 Cultural Heritage Documentation with RPAS/UAV**

Fabio Remondino and Efstratios Stylianidi

This last chapter covers the aspects of the current existing acquisition platforms, in particular the possibility of using flying platform. The most common RPAS/UAV systems ("drones" for a larger public) are reviewed regarding their availability in different types, sizes and required performances and also the regulations in various countries (whether civil or military applications).

Despite giving an overview of these flying platforms, this chapter does not sufficiently highlight these techniques, which are widely used in different domains. The recordings of small and medium size Cultural Heritage 3D objects are at stake, in particular for contemporary artworks where surface reflection presents a major drawback for image acquisition and relevant data treatment.

This book is of major importance for Cultural Heritage 3D recording and management and can be seen as an important resource handbook.





## views+opinions

# Viral Images: Exploring the historic and conservation challenges of objects created for social protest and solidarity

By Eleonora Nagy

*The recent international increase in political protests rendered the IIC organized gathering: Viral Images: Exploring the historic and conservation challenges of objects created for social protest and solidarity very timely. Held at the Metropolitan Museum of Art, New York, the event took off with four political performances with explicit and controversial content by artists from the New York area, who each provided a presentation or performance of their art. The following dialogue was broadcasted live.*

A well-selected six-member panel explored various aspects of protest art in its historical context. Ralph Young, Professor of History at Temple University talked about dissent as essential part of American history. Aaron Bryant, Melon Curator of photography pointed out the vital role of imagery in political

movements, and that the timing for an image to go viral is as crucial as the consciousness of the message.

Michael Gould-Wartofsky summarized collecting Occupy Wall Street artifacts. Lidia Uziel provided Harvard's example of how to source and collect protest art, while others conferred on the general approach to such collections, their storage and handling.

Christian Scheidemann cited Joseph Beuys collecting protest documents and turning it to art, reminding the audience that protest art is not new. He also presented David Hammons's example, when the artist elects public vandalism to become a constituent of his art that he deems essential to its political meaning. The dialog that followed between the panel, the artists and the audience briefly touched upon where to draw the line between vandalism and protest art, and why do we document and preserve one, but not the other; a question that would merit thorough investigation, possibly in the form of a symposium or conference.

One common theme that surfaced throughout the performances and panel discussion centred on minority and racial issues surrounding the creation and conservation of art. The issue is not novel and has been gaining increasingly intense attention and openness in the last year or so. Explored last spring in



>>  
Montreal at the joint annual AIC/CAC-ACCR conference, specifically in Sanchita Balachandran's brilliant presentation, it resurfaced as one of the themes at IIC's Los Angeles in September 2016. With its racial and social focus, protest art seems to highlight minority issues within the conservation field as well, and gathers widening momentum.

It is time for a major consolidated effort among the leading international organizations for conservation, down to the local branches, individual museums and private practice to face this lagging side of our field, organize outreach and opportunities for social groups in the profession that are other than the prevailing western white female demographic. Social diversity in outreach is essential. Building on the blocks of this eye-opener gathering, and planning a subsequent event to directly converse with our youth would be an affair well worth exploring.



**Eleonora E. Nagy** is a New York based Conservator specialising in the treatment of Modern and Contemporary Three-dimensional Works of Art. She divides her time between her private practice, Modern Sculpture Conservation, an LLC with international clientele and the Whitney Museum of American Art, where she serves as the inaugural Conservator for Three-dimensional Works of Art and Research Conservator.



# IIC News



## From the President's desk

IIC highly values our collaborations with fellow conservation organisations and several of these have been formalised with Memoranda of Understanding. These organisations include ICCROM, the Palace Museum in Beijing, and ICOM-CC. In this column I am going to give an update on the activities that IIC has been discussing with ICOM-CC.

Since the last year in which IIC and ICOM-CC shared our conferences, 2014, we have been working on organising a joint conference in 2020. It has been a personal hope of mine that this might happen since I first joined IIC Council in the 1980s! In 2014 fewer than twenty people attended both the IIC Congress in Hong Kong that followed the week after the ICOM-CC conference in Melbourne. We suspect that the high cost of attending conferences two weeks running meant that most people had to choose between them. IIC Council and the ICOM-CC Directory Board discussed models for joint conferences lasting between seven and ten days. Sadly it has not been possible to find a single model that enables both organisations to meet the needs of our members and academic programmes, including our publications. In 2020 we will be organising our conferences independently. The dates will not be two weeks running which we hope will make it easier for people who want to attend both.

In 2014 IIC and ICOM-CC published the declaration on environmental guidelines. Recently ICOM-CC has published a proposed statement on climate guidelines for museums and loans. This statement can be read in the *Update from the Chair* in *On Board 12 - December 2016*, the newsletter from the Directory Board of ICOM-CC. IIC Council have discussed this statement and feel that the more specific guidelines agreed by the Bizot Group of museum directors in the 2015 [Bizot Green Protocol](#) are of more help to the museum community who are engaged in international loan exhibitions.

IIC will continue to develop the 2014 environmental guidelines and the 2018 Turin Congress, 'Preventive Conservation: The State of the Art', will give an opportunity to present this work. The call for proposals includes a theme based on development of the environmental guidelines with a request for papers and posters covering: passive and low energy buildings and the reduction of carbon footprint of existing buildings; low energy environmental control and lighting; innovations in museum storage; sustainability for museums and heritage organisations; loan conditions (including Bizot Green Protocol).

Later this year we are planning the second of the series of IIC Professional Development seminars with the Science Museum, London on low energy museum storage. Along with two other national museums in the UK (British Museum and Victoria and Albert Museum) the Science Museum is vacating a store in central London and planning a large new low energy storage building. The seminar will be an opportunity to bring together international professionals who have experience of these types of storage facilities.

The next IIC Council meeting will be hosted by our partners ICCROM in Rome on 25-26 May 2017. We will be discussing plans for the 2018 Turin Congress. At every Council meeting we consider nominations for new Fellows of IIC. If you would like to apply for Fellowship of IIC or would like to nominate someone then please submit nominations by the beginning of May. Details are on the IIC website.

Sarah Staniforth  
President IIC



## Secretary-General's report

This year's Annual General Meeting was held at the Society of Antiquaries on the 23rd January, 2017. This is a short report on the year 1st July 2015 to 30th June 2016; you can read at greater length about the activities of the past year, including last year's AGM talk by Professor Peter Stone on the work of the Blue Shield voluntary organisation, in the Annual Report and Accounts you should have received before Christmas, or in the new look Annual Review, which you can download from the IIC website at <https://www.iiconservation.org/about/core-documents> The Annual Review is one of the results of the exercise that was carried out on our behalf in 2015–2016 by the marketing consultancy, Tangible Branding, to try to improve the image we present to the world and you will eventually see the effects on the website and in our publications.

One reason behind the marketing exercise was that IIC's membership is falling. One explanation for this may be that in many countries where IIC has traditionally recruited the bulk of its membership, there are other, local, conservation organisations that have a greater everyday relevance for those in the conservation profession and memberships cost money. People retire and others coming into the profession are not recruited to be IIC members. I would appeal to you: if each member, each of you, persuaded one colleague to join IIC, this would make a real difference. IIC membership is not in itself as expensive as that of many comparable organisations. I'm pleased to say that, following the introduction of rates for retired members and Fellows a couple of years ago, banded membership rates following the classification of countries based on per capita income (as used by the International Council of Museums) will be introduced for the next membership year and we hope this will make IIC membership more affordable for those in those countries where average incomes are very much lower. I'm also pleased to welcome some new Fellows elected during the year: Susan Bioletti, Cathy Challenor, Diana Collins, Paola Dindo, Mary Gridley, Sophie Lewincamp, Katy Lithgow, Richard Lithgow, Eleonora Nagy, Chandra Reedy, Hannelore Roemich, Jane Rutherford and Giovanni Verri.

The principal event of the year was the third Student and Emerging Conservator conference, on the theme *Making the Transition: from Student to Conservation-Restoration Professional*, which was held in October 2015 at the Warsaw Academy of Fine Arts. All aspects of these events, including the finances are organised by the students themselves, with some

help and advice from IIC, and they select the topics to be discussed; matters of concern to them as they enter the profession so it is quite a learning exercise. In this case the sessions were devoted to the effects of differences in conservation education systems in different countries; bridging the gap between studies and work; and potential benefits and barriers for the young conservation-restoration professional – the values of networking. The panellists were invited on the basis of their personal experience relevant to these topics and the sessions were streamed live by the Warsaw Academy of Fine Arts in Warsaw through their YouTube account. The whole event was both entertaining and useful and IIC would like to thank Marzenna Ciechanska, Dean of the Faculty of Conservation and Restoration of Works of Art, and all those involved.

The IIC Los Angeles Congress, on the subject of *Saving the Now: Crossing Boundaries to Conserve Contemporary Works*, which took place in September 2016, falls outside the year under discussion so I shouldn't tell you what a wonderful and exhilarating event it was: a very varied technical programme and a really interesting range of visits. However, I must take this opportunity to thank the members of the local organising committee, headed by Jerry Podany, President Emeritus of IIC, and Tom Learner of the Getty Conservation Institute and IIC Council member, and our partner organisation for this Congress, INCCA (the International Network for the Conservation of Contemporary Art). I should also thank the Getty Conservation Institute with whom IIC signed a Memorandum of Understanding to facilitate the handling of funds raised within the United States itself, and all those who provided funding and time and people towards the Congress: for people to attend, towards the preprints, towards events, including The Getty Foundation, the Getty Conservation Institute, Los Angeles County Museum of Art, Tru Vue and generous individuals. All this will be described at greater length next year, but I would like to record our thanks and gratitude to you all now.

IIC's collaboration with the Palace Museum in Beijing in the foundation of the IIC International Training Centre for Conservation (IIC-ITCC) was an outcome of the 2014 Hong Kong IIC Congress. The training centre is hosted and funded by the Palace Museum, while training is provided by IIC, primarily IIC Fellows and the agreement is initially for three years. To facilitate communications, IIC and the Hong Kong Leisure and Cultural Services Department (LCSD) have collaborated to provide an IIC Secretariat in Hong

Kong. The first course, entitled 'Scientific Approaches to Preventive Conservation', took place in September 2015 and the 20 participants were mostly experienced conservators and of middle-management level, half from China and half from other regions of the world, often regions where even access to colleagues is not straightforward. All the lectures and reading lists from the course are available for download as PDFs from the IIC website. IIC would like to thank Dr Shan Jixiang, Director of the Palace Museum, Dr Song Jirong, Deputy Director and head of the Conservation Department and all those in the Conservation Department for their superb hospitality, and particularly Katherine Xiaoji Fang at the Palace Museum and Casey Liu in Hong Kong, for the organisation. The next course, on Non-destructive Analysis in the Conservation of Cultural Heritage, took place in mid-November 2016, so outside the year under discussion.

IIC's new occasional series of Professional Seminars are intended partly to help with professional development, partly to provide information on matters where a conservation professional may need advice in a relatively brief, succinct form. The first of these, a half-day meeting on the subject of copyright, in publishing and in the use of images, was held in March 2016. The presentations and a summary of the discussion session have been compiled into a PDF document which can be downloaded from the IIC website. We would like to thank Clare Finn, whose interest in problems in the use of images contributed greatly towards this event.

I won't dwell on Council matters over the last year, except to mention that the IIC Council tries to have one meeting annually in the country of one of its members; it can thus meet local conservators. This year the May Meeting was organised in Doha by Council member Stavroula Golfomitsou, where our hosts were UCL (University College London) Qatar, so we could meet staff teaching conservation students and carrying out conservation research in a region with its own, very particular characteristics. We are most grateful to Professor Thilo Rehren, Director of Research UCL Qatar, Stavroula Golfomitsou and Flavia Ravaioli for their generous hospitality.

IIC depends for its efficient functioning on the office personnel and we are, as always, grateful to Graham Voce, IIC's Executive Secretary and, new during the year, Tina Churcher, who joined the office as an assistant in April and is the new Membership Secretary and Mary Breeding, recruited as book-keeper on a

temporary basis at the end of May and now with us permanently as the new Finance Secretary.

Jo Kirby Atkinson  
IIC Secretary-General

## Director of Publications report

Chandra Reedy continues to work diligently and effectively as editor-in-chief and selector of contents for each issue. The editorial board has changed little over this period to July 2016, and I thank all the 20-some hardworking volunteers in the regular Studies editorial team, as well as the several Taylor and Francis Routledge staff who have worked regularly on the journal. The transfer of all production operations after this company acquired IIC's publishing partner Maney proved to take some months, and occurred when many supplements to the journal were in progress, but it is now working smoothly and has brought some significant improvements in practice. All 6 issues for the 2015 calendar year were published under the Maney imprint, while those from 2016 bear the Routledge logo. At the annual journal review meeting with Taylor and Francis, I was pleased to hear that the journal's impact factor was 2015 0.323 in 2015 and that the 5 year impact factor at the same date was 0.437. It was also clear that the most frequently downloaded papers in the regular journal cover two topics: modern materials, and reviews of analytical and examination methods aimed at non-specialised users of such methods, while the papers from the IIC 2014 Hong Kong congress were frequently downloaded too, and purchased as hard copy from Archetype Publications, which is the sole seller for IIC congresses as printed copies. Open access, provided for the first two online-only externally-produced supplements - the LACONA10 postprints and the publication from the ICCROM 2013 Conservation Science Forum - has led to a significant number of downloads for all these papers. It is the same for those papers whose authors in the regular journal chose to pay for this option. In future it will be possible to examine the data on downloads and citations in greater detail. Over the year, the number of papers submitted to Studies in Conservation (SIC) has remained high, at about 8-10 per month, with almost half of these accepted after peer review and editing. This has caused the interval between acceptance and publication online, and printing, to remain at around 15 months.

The postprints for the Hong Kong congress were published in two parts as online-only supplement 1 *The indoor Environment for 2016*

edited by Barry Knight. Supplement 3 Lacquer: Technical Analysis and Conservation was edited by David Saunders and Shayne Rivers, outside the reporting period, in the later part of 2016. Supplement 2, the preprints to the IIC 2016 Los Angeles congress, also fell outside the reporting period. Its production editing was done by me, with much editorial input from Jo Kirby, David Saunders and Agnes Broekerof, and its production necessarily dominated the period up to July 2016. The subject of modern and contemporary art meant that copyright was a significant issue, as had been foreseen, and in fact introduced a new complication, with the private owners of some works in accepted papers concerned about the publication of conservation treatments and/or the explicit identification and illustration of the artwork, lest its market values would be affected by the knowledge that it had required conservation treatment.

The new layout and additional number of issues (8 instead of 6) but reduced number of mailings to 4 per year, will be noticed by members from the beginning of this calendar year.

Barbara Borghese has continued in her role as IIC's part-time news editor throughout the year. She has designed and produced 6 excellent and much-downloaded issues of News in Conservation in PDF format, as well as commissioning and writing content for this and IIC's news features online, while working closely with the IIC social media team coordinated by Julian Bickersteth, as Director of Communications.

Joyce Townsend  
IIC Director of Publication

## Director of Communications report

IIC communicates electronically with its members, the conservation profession and the broader community through News in Conservation, its active social media presence, particularly through the IIC Facebook page and the IIC LinkedIn Group, and through the website. The content of all these sites is provided free and IIC produces and monitors content for these sites very carefully as befits the leading international independent organisation for the conservation profession. We are pleased to report that during the period under review patronage of these sites continued to grow, indicating there is an ever increasing interest and demand for informed conservation content. News in Conservation reached an average of 7,100 readers per edition

and a total of over 42,600 readers during the year, not counting the 75,000 times articles were viewed on Scoop.it. Facebook followers have grown over the past year to over 35,000 (from 30,000), our LinkedIn Group followers surged past 1,000 (from 630), and website hits increased by 20%. The website continues to provide a key central resource for the membership with further streamlining of access to on-line IIC publications and, additionally, book reviews and obituaries. A feature added recently is the permanent Chinese language pages section, edited by Casey Liu in Hong Kong. As with any website, elements of it require regular upgrading and the IIC Council will be considering during 2016 how best to expedite this. IIC's electronic communications continues to rely heavily on Athanasios Velios, our website manager, and Barbara Borghese, our News in Conservation editor, supported tirelessly by Amber Kerr, Facebook coordinator, Sharra Grow, LinkedIn Group co-ordinator, Kate Stonor and the Communications Team, all of whose contributions are very gratefully acknowledged.

Julian Bickersteth  
IIC Director of Communications

## IIC 2017 Student & Emerging Conservators Conference in Bern

Following on from the successful previous Student & Emerging Conservator Conferences in [London \(2011\)](#), [Copenhagen \(2011\)](#) and [Warsaw \(2015\)](#) we are delighted to announce the fourth conference will take place in Bern in October 2017.

As with the previous conferences, the 2017 Bern event will be held over two days and consist of moderated panel discussions, studio visits and social events, all designed to allow for the maximum in networking and information exchange opportunities.

Conservation with Head, Hands and Heart will be held on 12-13 October 2017, with the title of the conference inspired by the Swiss educational philosopher Joachim Pestalozzi, whose credo of 'Learning with Head, Heart, and Hands' is also very applicable to the conservation profession. Save the date!





## The Fellowship corner

Where we keep you up to date with IIC's new Fellows and their achievements

**Indra Tuna** graduated from Riga Technical University (RTU) Department of Material Science and Applied Chemistry Institute of Polymer materials in specialization of paint/ varnish materials manufacturing in 1994. Subsequently she obtained a Diploma in Chemical Engineering in 1995 and Master of Science in chemistry in 1999 with a specialisation in Restoration and Conservation Technology at RTU.

Currently she works at the Research Laboratory of Latvia National History Museum (LNVM) Conservation Department as conservation scientist and her work is related to research of all the exhibits available in the museum: from archaeological materials, paintings, polychrome, textiles, ceramics - from Soviet-era objects to modern materials. Her work is related to the investigation of materials in collaboration with art experts in order to gain expertise of the most significant artworks of Latvia. She has been invited to work in the largest and most important cultural heritage conservation projects of Latvia.

Her career began in 1994 working at LNVM as a chemist in the Conservation Department Research laboratory. In 1998 (1998– 2008) she joined Latvia Foreign Art Museum team as a conservation scientist and her work was related with the investigation of Western Europe and Asia exhibits. Since 2003 she has been working in the Academy of Art, Latvia Conservation Department as a lecturer and conservation scientist. In 2015 the LNVM launched the new research laboratory with the equipment for non-destructive testing.

Since 2013 she is a board member of Latvia Restorers Society Council. She collaborated to the organising of the Baltic States conservator triennial Conference in 2014 and in 2012 - 2015 she represented Latvia at the IAEA project "Nuclear technologies for CH Characterization, Dating and preservation". In 2012 her poster "Latvian headdresses" was awarded with the IIC Poster Prize at the Vienna Congress.



**Dr. Joelle D. J. Wickens** (Ph.D. in Conservation 2008 and MA in Textile Conservation 2003, University of Southampton, United Kingdom, BA in American Civilization 1989, University of Pennsylvania, USA) is a conservator and Head of the Preventive Conservation Team for Winterthur and Affiliated Assistant Professor for the Winterthur/University of Delaware Program in Art Conservation (WUDPAC). She practices preventive conservation at Winterthur and is responsible for the continued development and delivery of the preventive conservation curriculum for WUDPAC.

Dr. Wickens co-founded the AIC's Collection Care Network (CCN). The network's main goals are to promote and support the practice of preventive conservation on a national and international basis and provide a professional home for the wide variety of collections care practitioners.

Dr. Wickens' current research includes assessing the need for and the development of techniques that mitigate outside light in a manner sympathetic to the historic house environment, devising accessible and sustainable storage practices for museums with limited staff, and the development of materials and courses for the teaching of preventive conservation.

## What's on

**A comprehensive list of events taking place around the world, in and around the field of conservation. Write to [news@iiconservation.org](mailto:news@iiconservation.org) if you wish to add your event**

### Call for papers

**IIC 2018 - Preventive Conservation: The State of the Art**  
10 – 14 September 2018  
Turin, Italy  
Deadline for abstracts for both papers and posters: 8<sup>th</sup> May 2017  
For more information visit:  
<https://www.iiconservation.org/node/6967>

**APLAR 6 - Laser cleaning technology for the conservation and restoration of cultural heritage**  
14-15 September, 2017  
Florence, Italy  
Deadline: Monday, 15 May, 2017  
For more information visit:  
<https://www.iiconservation.org/node/6960>

**Tempera painting between 1800 and 1950 - Experiments and innovations from the Nazarene movement to abstract art. Call for Contributions**  
15-17 March, 2018  
Munich, Germany  
Deadline: Wednesday, 31 May, 2017  
For more information [click here](#)

**FUTURE TALKS 017 - Call for Papers**  
11-13 October, 2017  
Munich, Germany  
Deadline: Sunday, 30 April, 2017  
For more information visit:

**European Lacquer in Context (ELinC) Conference**  
18-19 Jan 2018  
Brussels, Belgium  
Deadline: 4 Jun 2017  
For more information [click here](#)

### Conferences/Seminars

**Preventive Conservation: The State of the Art - IIC 2018 Congress**  
10 – 14 September 2018  
Turin, Italy  
For more information visit:  
<https://www.iiconservation.org/node/6967>

**IIC Students & Emerging Conservators Conference : Conservation with Head, Hands and Heart**  
12th & 13th October 2017  
Bern, Switzerland  
For more information visit:  
<https://www.iiconservation.org/node/6935>

**Vandalism & Art**  
8-9 June, 2017  
Maastricht, The Netherlands  
For more information visit: [www.sral.nl](http://www.sral.nl)

**IADA SYMPOSIUM 2017 - From Generation to Generation - Sharing Knowledge, Connecting People**  
3-5 May, 2017  
Oslo, Norway  
For more information visit: <http://www.iada-home.org/en/news/iada-symposium-oslo-2017.html>

**Modern Art Conservation in practice**  
3-5 May, 2017  
Maastricht, The Netherlands  
For more information visit: [www.sral.nl](http://www.sral.nl)

**CARE! Conservation and REstoration Conference 2017**  
11-12 May, 2017  
Warsaw, Poland  
For more information visit:  
<http://www.icarthejournal.org/>

**Treatment 2017: Innovation in Conservation and Collection Care**

28 May - 1 August, 2017  
Chicago, USA

For more information visit:

<https://www.iiconservation.org/node/6553>

**Society for the Preservation of Natural History Collections (SPNHC) 32nd Annual Meeting**

Friday, 23 June, 2017  
Denver, USA

For more information visit:

<https://www.iiconservation.org/node/6859>

**Dark Tourism Sites related to the Holocaust, the Nazi past, and World War II: Visitation and Practice**

28 June, 1 July, 2017  
Glasgow, Scotland

For more information visit:

<https://www.iiconservation.org/node/6782>

**VI Latin-American Symposium of physics and chemistry in archaeology, art and conservation of cultural heritage – LASMAC 2017**

10-14 July, 2017  
La Paz, Bolivia

For more information [click here](#)

**43rd Annual CAC-ACCR Conference and Workshops**

6-10 June 2017  
Regina, Saskatchewan, Canada

For more information visit: <https://www.cac-accr.ca/conferences>

**Remapping the Arts, Heritage, and Cultural Production: Between Policies and Practices in East and Southeast Asian Cities**

16-17 August 2017  
Asia Research Institute, National University of Singapore, Singapore

For more information [click here](#)

**Museums as a place for knowledge production and organization**

06 June 2017  
Neuchâtel, Switzerland

For more information [click here](#)

**Courses/Workshops****All About Thangkas-- Workshop in New York City**

Saturday, 6 May, 2017  
New York City

For more information visit:

<https://www.iiconservation.org/node/6964>

**Mosaics at Archaeological Sites: Training for Site Managers**

2-19 May, 2017  
Morocco

For more information visit:

<https://www.iiconservation.org/node/6532>

**Workshop on Islamic Bookbinding for conservators**

24-28 July 2017  
Islamic Arts Museum Malaysia  
Kuala Lumpur, Malaysia

For more information [click here](#)

**Macro X-ray Fluorescence Scanning in Conservation, Art and Archaeology**

25 September 2017  
IXCOM Scientific Committee,  
Trieste, Italy

For more information [click here](#)

**For more information about these conferences and courses see the IIC website:**

**[www.iiconservation.org](http://www.iiconservation.org)**