



## Conference program day by day

### MONDAY, SEPTEMBER 5

8:20 – 8:35 Ferry from Market Square to Suomenlinna

8:45 – 9:15 Registration and coffee

9:15 – 10:00 Welcome and opening remarks

**Liisa Näsänen** – Metal 2022 Program Chair

**Ilari Kurri** – Director, The Governing Body of Suomenlinna

**Elina Anttila** – Director General, The National Museum of Finland

**Paul Mardikian** – Coordinator, ICOM-CC Metals Working Group

**Claudia Chemello** – Remembering David Hallam

**Sabrina ja Saarten Tyttäret** – Young Vocal Collective from Helsinki

10:00 – 10:45 Keynote address: **Caitlin Southwick** (Executive Director, Ki Culture, The Netherlands)

10:45 – 11:15 Coffee

**SESSION 1: SUSTAINABILITY IN PRACTICE** – Chair: **Ellen van Bork** (The Netherlands)

11:15 – 11:45 **Henning Matthiesen** and **Jacob Frydendahl** (Denmark): Natural Conservation of Archaeological Iron

11:45 – 12:15 **Luana Cuvillier** (Switzerland): Exploiting Biologically Synthesized Chelators in Conservation: Gel-based Bio-cleaning of Corroded Iron Heritage Objects

12:15 – 12:45 **FLASH POSTER PRESENTATIONS** – Chair: **Anna Hyppönen / Ane Orue-Etxebarria/ Elisa Ahverdov** (Finland)

**Aki Arponen** (Finland): Subcritical Fluids in the Conservation of Archaeological Iron Objects: From Experiments to Permanent Practice

**Meredith Sweeney** (USA): Investigating Three Types of Dry Cell Battery Deterioration

**Elena Bernardi** (Italy): Atmospheric Particulate Matter: How to Include it in Artificial Ageing?

**Laura Brambilla** (Switzerland): Acoustic Emission Techniques for the Detection and Monitoring of Corrosion Phenomena

**Sabine Brechbühl** (Switzerland): The Bronze Hand of Prêles: Protecting a Valuable Archaeological Object Using 3D Techniques

**Emilio Cano Díaz** (Spain): Do the Lubricating Oils Used in Scientific-Technological Objects Protect Metals Against Corrosion?

**Mariana Cardoso** (Portugal): The Bluish Green and the Greenish Blue

12:45 – 13:45 Lunch





**SESSION 1: SUSTAINABILITY IN PRACTICE** – Chair: **Ellen van Bork** (The Netherlands)

13:45 – 14:15 **Akinobu Yanagida** (Japan): Deterioration Tests Using a Simulated Tumulus to Evaluate In Situ Preservation for Metal Artifacts in a Stone Chamber

14:15 – 14:30 **Sarah James** (YCP, Switzerland): Microbial Stabilization of Archaeological Iron Objects

14:30 – 14:45 **Maria Gonçalves** (YCP, Portugal): Development of a Sunflower-Oil-based Bio-lubricant for Use in Gear Models at the ISEP Museum

14:45 – 15:15 Coffee

15:15 – 16:45 **PANEL DISCUSSION: THE FUTURE OF CONSERVATION**

Moderator: **Caitlin Southwick**, Executive Director, Ki Culture, The Netherlands

Panelists: **Vasilike Argyropoulos**, Director of the Master's Program in Conservation of Cultural Heritage, University of West Attica, Athens, Greece

**Valentin Boissonnas**, Lecturer, Haute Ecole Arc Conservation-restauration, Neuchâtel, Switzerland

**Lauren Fair**, Head of Objects Conservation and Affiliated Assistant Professor, University of Delaware, Winterthur, USA

**Heikki Häyhä**, Senior Lecturer in Conservation, Metropolia University of Applied Sciences, Helsinki, Finland

**Vandana Singh**, Head of the Metal Conservation Laboratory at the City Palace Museum, Udaipur, India

**David Watkinson**, Professor of Conservation, School of History, Archaeology and Religion, Cardiff University, Cardiff, United Kingdom

17:20 – 17:35 Ferry from Suomenlinna to Market Square

18:00 – 19:30 Welcome reception – Helsinki City Hall

19:30 – 20:00 Belenos Group of Arts performance – Helsinki City Hall Lobby

**TUESDAY, SEPTEMBER 6**

8:20 – 8:35 Ferry from Market Square to Suomenlinna

8:45 – 9:15 Registration and coffee

9:15 – 9:45 Invited Speaker: **Lisa Young** (Objects Conservator, Smithsonian National Air and Space Museum, USA). One Small Step: Challenges to Conserving and Displaying Spacesuits at the Smithsonian National Air and Space Museum





**SESSION 2: MODERN METALS** – Chair: **Ian MacLeod** (Australia)

9:45 – 10:15 **Lauren Horelick** (USA): A Review of Treatments of Magnesium Alloy Objects at the National Air and Space Museum

10:15 – 10:30 **Abigail Rodríguez** (YCP, USA): Mitigating Magnesium Corrosion: Testing the Efficacy of Reapplying Conversion Coatings in Conservation Treatment

10:30 – 10:45 **Elodie Granget** (YCP, Switzerland): DiscoveryMat: A Freeware Electrochemical Tool for the In Situ Analysis of Aluminum Alloys in the Cooling Systems of Historical Vehicles

10:45 – 11:15 Coffee

**SESSION 2: MODERN METALS** – Chair: **Jerrad Alexander** (USA)

11:15 – 11:45 **Ian D. MacLeod** (Australia): Corrosion and Conservation of Nickel Silver Alloys Recovered from Historic Shipwrecks

11:45 – 12:15 **Luc Robbiola** (France): First Step in the PROCRAFT Project on WWII Aircraft Heritage: Investigation and Conservation of the Aluminium Alloys

12:15 – 12:45 **FLASH POSTER PRESENTATIONS** – Chair: **Anna Hyppönen / Ane Orue-Etxebarria/ Elisa Ahverdov** (Finland)

**Cristina Chiavari** (Italy): Heritage Biota and Bronze Patina Composition: A Correlation?

**Vera de Bruyn-Ouboter** (Norway): Corrosion of Strings on Musical Instruments

**Gerhard Eggert** (Germany): Testing Silver Lacquers: What about Agateen #27?

**Jacob Frydendahl** (Denmark): A Simple Treatment System for the Deaerated Desalination of Archaeological Iron

**Vasilike Argyropoulos** (Greece): Metals Conservation Teaching at University Level in Greece and the Cultural Vision of EYDAP S.A.

**Rosie Grayburn** (USA): A Lacquer to Dye For! Exploring a UV Fluorescent Additive for Coating Applications in Silver Conservation

**Marie Grima** (France): Port-Jeanne-d'Arc: Is Conservation of an Isolated Site Possible?

12:45 – 13:45 Lunch

13:45 – 14:00 **FLASH POSTER PRESENTATIONS** – Chair: **Anna Hyppönen / Ane Orue-Etxebarria/ Elisa Ahverdov** (Finland)

**Elodie Guilminot** (France): Evaluation of the Impact of Dechlorination Treatments on the Organic Parts of Composite Objects

**Ke-Shiuan (Tracy) Han** (The Netherlands): Historical Repairs on Ancient Chinese Bronzes: Identification and Conservation Issues





**Reed Hudson** (United Kingdom): Corrosion, Communication, and Comparison: Collaborative Conservation Approaches Towards Two Medieval Axes from Norfolk, England

**Laurie King** (USA): Microclimates for Marine Archaeological Iron Artillery: Three Case Studies in Treatment, Storage, and Display

**SESSION 3: COATINGS, CONSOLIDANTS AND CORROSION INHIBITORS – Chair:**

**Emilio Cano Díaz** (Spain)

14:00 – 14:30 **Peter Meehan** (United Kingdom): A Comparison of the Long-Term Outdoor Performance of Two Modern Paint Coating Systems and a Traditional Lead-based Paint Applied to Historic Wrought Iron

14:30 – 14:45 **Janine Meier** (YCP, Switzerland): Keris Blade Protection – A Comparison of Traditional and Contemporary Coatings

14:45 – 15:15 Coffee

**SESSION 3: COATINGS, CONSOLIDANTS AND CORROSION INHIBITORS – Chair:**

**Emilio Cano Díaz** (Spain)

15:15 – 15:45 **Erik Farrell** (USA): Testing the Compressive Strength and Reversibility of Consolidants Applied to Marine Archaeological Gray Cast Iron

15:45 – 16:15 **Eva Wentland** (Germany): Calcium Sulfonate: Adsorptive Inhibitors for Metal Conservation

16:15 – 16:30 **Carlota Carvalho** (YCP, Portugal): Preliminary Investigation of the Use of Chitosan-based Coatings for Outdoor Cultural Heritage Objects

16:30 – 16:45 **Emilie Trehu** (YCP, USA): Investigating a Sustainable Alternative: L-Cysteine as a Non-Toxic Corrosion Inhibitor for Copper Alloy Conservation

17:20 – 17:35 Ferry from Suomenlinna to Market Square

17:45 – 18:45 Coaches depart from Senate Square for the Conference Dinner

18:45 – 21:00 Conference Dinner at Hirvihaara Mansion, Mäntsälä (ticketed event)

21:00 – 22:00 Coaches depart from Hirvihaara Mansion for Senate Square

**WEDNESDAY, SEPTEMBER 7**

8:20 – 8:35 Ferry from Market Square to Suomenlinna

8:45 – 9:15 Registration and coffee

9:15 – 9:45 Invited Speaker: **Philippe de Viviés** (Director A-CORROS Expertise, France). Sustainability from a Private Practice Perspective





**SESSION 4: TECHNICAL STUDIES** – Chair: **Nicola Emmerson** (United Kingdom)

9:45 – 10:15 **Vandana Singh** (India): Sustainable Growth of Mewari Mail Makers: Traditional to Contemporary Practices

10:15 – 10:45 **Daniela Lira Pacheco** (Mexico): Development of Mexican Bell Documentation Tools and Methodologies

10:45 – 11:15 Coffee

**SESSION 4: TECHNICAL STUDIES** – Chair: **Nicola Emmerson** (United Kingdom)

11:15 – 11:45 **Blanca Ramírez Barat** (Spain): Corrosion Detection by Color Change Using Crowd-Sourced Photographs. Preliminary Results of the MIPAC Project

11:45 – 12:15 **Amalia Siatou** (Switzerland): Reflectance Transformation Imaging Feature Maps for Visual Documentation of Metal Objects

12:15 – 12:45 **Silvia Russo** (Switzerland): Revealing Degradation Patterns: Imaging Techniques for the Study of Metal Soap Formation on Painted Metal Objects

12:45 – 13:45 Lunch

13:45 – 14:15 **FLASH POSTER PRESENTATIONS** – Chair: **Anna Hyppönen / Ane Orue-Etxebarria/ Elisa Ahverdov** (Finland)

**Maria Labut** (Poland): Results of Research on 17th–19th-Century Coffin Portraits in the Collection of the National Museum in Krakow

**Manuel Leroux** (France): Examination of an Unusual Apulian-Corinthian Helmet Using X-Ray and Computed Tomography

**Paola Letardi** (Italy): Diagnostic, Restoration and Maintenance of Outdoor Bronze Artworks: Investigating Patinas in Marine Environments and Their Stabilisation with Low Environmental Impact Treatments

**Graeme McArthur** (United Kingdom): The Curious Case of Storage at the Petrie Museum of Egyptian Archaeology

**Eva Menart** (Slovenia): Comparing Simple Portable XRF with PIXE Analysis for Archaeological Metal Objects: Suitability, Advantages and Drawbacks

**Anna Mistewicz** (Poland): Methods of Marking Small Museum Objects: A Joint Project of the National Museum in Warsaw and the National Institute of Cultural Heritage in Poland

**María Teresa Molina Delgado** (Spain): Influence of the Application Methodology on the Performance of Coatings for the Protection of Metallic Heritage Objects

**Mohammad Mortazavi** (Iran): Archaeological Tinned-Copper Objects: A Study on Corrosion and Cleaning Treatments





**SESSION 4: TECHNICAL STUDIES** – Chair: **Aki Arponen** (Finland)

14:15 – 14:45 **Elyse Canosa** (Sweden): Monitoring of Metal Sculptures and Their Environment in Art Museums in Sweden

14:45 – 15:15 **Matthias Heinzl** (Germany): Discovery of a 12th-Century Enamelled Reliquary Pendant: Elemental Analysis and Content Visualisation Using Prompt Gamma Neutron Activation Analysis and Neutron Tomography

15:50 – 16:05 Ferry from Suomenlinna to Market Square

16:15 Coaches depart from Senate Square for Metropolia School of Conservation and Collections and Conservation Centre of the Finnish Heritage Agency

16:30 Coffee and tours at Metropolia School of Conservation (beginning at 16:30) and Collections and Conservation Centre (beginning at 16:45)

18:00 Coaches depart from Metropolia School of Conservation for Collections and Conservation Centre (at 18:00) and from Collections and Conservation Centre for Metropolia School of Conservation (at 18:15)

18:15 Tours at and Collections and Conservation Centre (beginning at 18:15) and Metropolia School of Conservation (beginning at 18:30)

19:15 Coaches depart from Collections and Conservation Centre (at 19:15) and Metropolia School of Conservation (at 19:30) for Senate Square (arriving at 19:45)

**THURSDAY, SEPTEMBER 8**

8:20 – 8:35 Ferry from Market Square to Suomenlinna

8:45 – 9:15 Registration and coffee

9:15 – 9:45 Invited speaker: **Laura Brambilla** (Professor, HE-Arc Conservation-restauration, Neuchâtel, Switzerland). Deconvoluting Acoustic Emission

**SESSION 5: ANALYTICAL INVESTIGATIONS** – Chair: **Elodie Guilminot** (France)

9:45 – 10:15 **Gerhard Eggert** (Germany): Sulfur, the ‘Enemy of Copper’: Replication of Sulfurous Efflorescence on Copper-based Heritage Materials with Elemental Sulfur

10:15 – 10:45 **Johanna Thunberg** (United Kingdom): The Role of Patina on Archaeological Copper Alloy Coins in the Outbreak and Progression of Bronze Disease

10:45 – 11:15 Coffee

**SESSION 5: ANALYTICAL INVESTIGATIONS** – Chair: **Elodie Guilminot** (France)

11:15 – 11:45 **Peter Northover** (United Kingdom): Non-Invasive Analysis: The Mirage and the Reality





- 11:45 – 12:15 **Ahmad N. Abu-Baker** (Jordan): An Analytical Study of the Corrosion Behavior and Microstructural Properties of a Group of Copper Alloy Artifacts from the Khirbet Yajuz Archaeological Site, Jordan
- 12:15 – 12:30 **Nicola Ricotta** (YCP, Italy): Analysis of Heterogeneous Tarnish on Silver-based Alloys Using the Pleco for Local, Controlled Electrolytic Cleaning
- 12:30 – 12:45 **FLASH POSTER PRESENTATIONS** – Chair: **Anna Hyppönen / Ane Orue-Etxebarria/ Elisa Ahverdov** (Finland)
- Nataša Nemeček** (Slovenia): Archaeometallurgical Investigations of a Late Iron Age Helmet: An Interdisciplinary Approach
- Peter Northover** (United Kingdom): The Care and Maintenance of Heritage Sample Collections
- Estelle Ottenwelter** (Czech Republic) and **Luc Robbiola** (France): Investigating Precious Artefacts Using Non-destructive FIB on FEG–SEM: A Case Study of 10th-Century Hollow Gilded Copper Alloy Pendants (Gombiky) from Prague Castle
- Maria João Pereira** (Portugal): The Enemy Within: Dezincification and Cyclic Corrosion on a Brass Patinated Equestrian Sculpture
- 12:45 – 13:45 Lunch
- 13:45 – 14:15 **FLASH POSTER PRESENTATIONS** – Chair: **Anna Hyppönen / Ane Orue-Etxebarria/ Elisa Ahverdov** (Finland)
- Kimberly Roche** (United States): Standardizing Acid Digestion Methodology to Determine Chloride Content of Ferrous Corrosion Samples
- Cristina Scarrone** (Italy): Treatment of Two Fanghu Vessels (1st Century BC): Conservation Issues of Archaeological Painted Bronze
- Lucile Beck** (France): When Corrosion is Useful: Absolute Dating of Metals by the Radiocarbon Method
- Julia Tauber** (Germany): The Complexity of Developing a Restoration Plan for an 18th-Century Cast Iron Fountain
- Eszter Tóth** (Hungary): Possibilities for Implementing Aesthetic Unity, Reversibility and Distinctiveness: Two Conservation Case Studies
- Simeon Tsvetkov** (United Kingdom): Testing Gap Fillers for Archaeological Metal
- Ellen van Bork** (The Netherlands): The ‘Hallmarks on (Dutch) Silver’ Project: Where Are We Now?
- Heleen van Santen** (The Netherlands): Metallotheek: A Collaborative Exploration of Bronze Patination
- SESSION 5: ANALYTICAL INVESTIGATIONS** – Chair: **Ahmad N. Abu-Baker** (Jordan)
- 14:15 – 14:45 **Omid Oudbashi** (Iran): Corrosion Analysis and Assessment of a Collection of Archaeological Copper Alloy Objects from Sagzabad, Northern Iran





14:45 – 15:15 Coffee

**SESSION 5: ANALYTICAL INVESTIGATIONS** – Chair: **Ahmad N. Abu-Baker** (Jordan)

15:15 – 15:45 **David Watkinson** (United Kingdom): The Effect of Synthesis Routes on the Ability of Akaganeite to Corrode Iron

15:45 – 16:15 **David Thickett** (United Kingdom): Using Epidemiology to Validate Scientific Results for Complex Situations

16:15 – 16:45 **David Thickett** (United Kingdom): Long-Term Provision of Stable Environments for Metals Conservation

17:20 – 17:35 Ferry from Suomenlinna to Market Square

18:00 – 20:00 **POSTER SESSION** – Sonck Hall, Helsinki

**FRIDAY, SEPTEMBER 9**

8:20 – 8:35 Ferry from Market Square to Suomenlinna

8:45 – 9:15 Registration and coffee

9:15 – 9:45 Invited Speaker: **Arie Pappot** (Faculty Member, Conservation Restoration Research, Rijksmuseum, Amsterdam, The Netherlands). Minor Elements, Major Patterns: Chemical Fingerprints of Early Modern Copper Sources

**SESSION 6: CONSERVATION PRACTICES** – Chair: **Cátia Viegas Wesolowska** (Poland)

9:45 – 10:15 **Susanne Gänsicke** (USA): The Reanimation of a Renaissance Automaton: 'Diana and Stag' at the Museum of Fine Arts, Boston

10:15 – 10:45 **William Hoffman** (USA): Building an Ironclad System: A Quarter-Century of Innovation in the Conservation of USS Monitor

10:45 – 11:15 Coffee

**SESSION 6: CONSERVATION PRACTICES** – Chair: **Cátia Viegas Wesolowska** (Poland)

11:15 – 11:45 **Anusha Kasthuriarachchilage** (Sri Lanka): Conservation and Technical Study of Ten Objects in the Thiriyaya Collection at the Department of Archaeology in Sri Lanka

11:45 – 12:15 **Jessica Lewinsky** (Israel): Keeping it Kosher: The Care and Treatment of the Judaica Collection at the Israel Museum, Jerusalem

12:15 – 12:30 **Sahitya Raja** (YCP, India): Conservation of Copper and Copper Alloy Objects: A Training Program **Conducted at the Mehrangarh Museum Trust, Jodhpur**

12:30 – 12:45 **Alexi Pienimäki** (YCP, Sweden): Commercially Available Vacuum Chambers as an Alternative in the Deoxygenated Desalination Treatment of Archaeological Iron







12:45 – 13:45 Lunch

13:45 – 14:15 Closing remarks

**Eero Ehanti** – The National Museum of Finland

**Heikki Häyhä** – Metropolia University of Applied Sciences

**Paul Mardikian** – Coordinator, ICOM-CC Metals Working Group

14:15 – 14:45 Business meeting – Chair: **Paul Mardikian**

14:45 – 15:15 Coffee

15:50 – 16:05 Ferry from Suomenlinna to Market Square

16:05 Walking or tram # 2 (at 16:13) or # 4 (at 16:19) to the National Museum of Finland

16:30 – 18:30 Self-guided tour of the National Museum of Finland

18:30 – 21:00 Farewell Reception – Centre Hall of the National Museum of Finland

