

Digital Innovations in Cultural Heritage Preservation

Chicago Center for Cultural Heritage Preservation (C3HP)/ISAC Museum/EPHE

Conference Site University of Chicago John W. Boyer Center in Paris 41 Rue des Grands Moulins	Conference Hotel Pullman Paris Centre Bercy 1 Rue de Libourne
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Organized by Gil J. Stein & Marc Maillot (University of Chicago) & Luc Aubry (École Pratique des Hautes Études)

Day 1 — Monday, June 15, 2026: Advances and Challenges in Data-Driven Research

Session I – Chaired by Gil J. Stein, C3HP Director & Professor, University of Chicago/ISAC		
Time	Session / Event	Speaker(s)
9:15 – 9:30	☕ <i>Coffee & Refreshments available</i>	
9:30 – 9:45	Welcoming Remarks by C3HP Director	<i>Gil J. Stein, Ph.D.</i>
9:45 – 10:15	Innovation in Cultural Heritage Documentation at Kerkenes, Türkiye	<i>Scott Branting, Ph.D.</i>
10:15 – 10:45	Multiple Benefits of Digital Approaches to Cultural Heritage Through Preserving, Researching, Sharing: Examples from the Vorderasiatisches Museum	<i>Prof. Dr. Barbara Helwing</i>
10:45 – 10:55	☕ <i>Coffee Break</i>	
10:55 – 11:25	Physical Restoration of a Painting with a Digitally Constructed Mask	<i>Alex Kashkin</i>
11:25 – 11:55	Safeguarding the Manuscript Heritage of Central Asia	<i>Georges-Jean Pinault, Ph.D.</i>
12:00 – 13:30	🍽️ <i>Lunch (at conference site)</i>	
Session II – Chaired by Marc Maillot, Director & Chief Curator, ISAC Museum		
13:30 – 14:00	Digital Archiving of the Century-Old Epigraphic Survey Archive and Preservation of the Labib Habachi Collection	<i>Emmanuelle Arnaudès, Ph.D & Alain Arnaudès</i>
14:00 – 14:30	The Invisible East Digital Corpus (IEDC): Making Documents from Iran, Afghanistan and Central Asia Openly Accessible for Research and Outreach	<i>Arezou Azad</i>
14:30 – 14:40	☕ <i>Coffee Break</i>	
14:40 – 15:10	Keeping Heritage Alive: From digital reconstruction to cultural transmission, the Notre-Dame case at Ubisoft	<i>Deborah Papiernik</i>
15:10 – 15:40	The Persepolis Fortification Archive Project	<i>Wouter Henkelman, Ph.D.</i>
15:45 – 16:45	Keynote Lecture: HeritageWatch.AI - What's at Stake	<i>Yves Ubelmann</i>
17:00 – 19:00	🍽️ <i>Dinner at Milord, 12 Rue de Tolbiac, (5m walk from conference site)</i>	

Day 2 — Tuesday, June 16, 2026: Digital Approaches to Cultural Heritage Preservation and Public Outreach

Session III: Chaired by Luc Aubry, Director of International Relations, EPHE		
Time	Session / Event	Speaker(s)
9:15 – 9:30	☕ <i>Coffee & Refreshments available</i>	
9:30 – 10:00	Advancing Heritage Preservation Through Artificial Intelligence: the Alaska Native Heritage from the Bering Strait region	<i>Lily McEwen & Alexandra Taitt</i>
10:00 – 10:30	AI Strategies and Cultural Heritage Research: The ISAC Data Research Center (DRC) and the University of Chicago AI Initiative	<i>Allie Scholten</i>
10:30 – 10:40	☕ <i>Coffee Break</i>	
10:40 – 11:10	Digging Through the Archives of Khorsabad (Iraq): The Arkho Project	<i>Barbara Couturaud, Ph.D & Jean-Jacques Herr, Ph.D</i>
11:10 – 11:40	Digital tools for Heritage at War	<i>Maja Kominko, D.Phil</i>
12:00 – 13:30	🍽️ <i>Lunch (at conference site)</i>	
Session IV – Chaired by Timothy P. Harrison, Director & Dean, ISAC		
13:30 – 14:00	The CAMEL Laboratory: Current Research and Projects	<i>Dominik Lukas</i>
14:00 – 14:30	Cultural Heritage Data Management Systems in Historical Perspective and the Value of the MAPSS Database for Mongolian Archaeological Heritage Preservation	<i>Michael Fisher, Ph.D</i>
14:30 – 14:40	☕ <i>Coffee Break</i>	
14:40 – 15:10	3D Digitization and Replication: a Development of the Repatriation Office of the National Museum of Natural History	<i>Eric Hollinger, Ph.D</i>
15:10 – 16:10	Keynote Lecture: La Celtrac (<i>Research Unit on the Illicit Trafficking of Cultural Property</i>) and the Digital Monitoring of Illicit Trafficking	<i>Vincent Michel, Ph.D</i>
16:30 – 17:15	Roundtable Discussion	
17:15 – 17:30	Closing remarks	<i>Timothy P. Harrison, Ph.D, ISAC Director & Dean</i>
17:30 – 19:00	🍷 <i>Reception at conference site</i>	

Conference Speakers

Speaker	Biosketch
<p>Emmanuelle Arnaudès, Ph.D <i>Epigrapher & Digital Archivist, Epigraphic Survey, University of Chicago</i></p>	<p>Dr. Arnaudès is a French Egyptologist, holding a Ph.D from the University of Paris-Sorbonne. She specializes in the Temple of Karnak and the monuments of Thutmose III in the Theban area (Luxor, Egypt). From 1992 to 2005, she worked at the Franco-Egyptian Center for the Study of the Temples of Karnak, where she documented, studied, and reconstructed the original layout of several monuments of Thutmose III from hundreds of scattered blocks. She joined The Epigraphic Survey in 2006, where she works as an archivist and epigrapher. She brings her expertise to the ongoing project to publish the Small Temple of the 18th Dynasty in Medinet Habu.</p>
<p>Alain Arnaudès, <i>Digital Archivist, UAR 2409. Documentation et Publications de l'Institut des Civilisations. CNRS-Collège France, Paris</i></p>	<p>Alain is a specialist in documentation and Egyptology, focusing on the digitization, organization, and preservation of historical archives. Former Head of Documentation at the Franco-Egyptian Center for the Study of the Temples of Karnak in Luxor from 1994 to 2005, he has since joined the CNRS team at UAR 2409 of the Institute of Civilizations at the Collège de France in Paris. As a digital archivist consultant, he provides his expertise to the Epigraphic Survey. He is the author of three digital publications on the Karnak Temple and, most recently, on the archives of Félix, Adrien, and Lydie Bonfils, a family who settled in Lebanon and photographed the Middle East from 1867 to 1901.</p>
<p>Arezou Azad, D.Phil, <i>National Institute for Oriental Languages and Civilizations, (INALCO) and University of Oxford</i></p>	<p>Dr. Azad is a historian of the premodern Islamic East, specializing in Iran, Afghanistan, and Central Asia from the rise of Islam in the seventh century to the Mongol Empire in the thirteenth century. She is Senior Research Fellow and Invisible East Program Director at Oxford Lifelong Learning and holds the Chair on the Arts and Heritage of Afghanistan at the Institut national des langues et civilisations orientales (INALCO) in Paris. She received her DPhil from Oxford's Faculty of Asian and Middle Eastern Studies and subsequently co-directed the Balkh Art and Cultural Heritage Project (Leverhulme Trust, 2011–2015). Her books include <i>Sacred Landscape of Medieval Afghanistan</i> (Oxford, 2013), <i>The Warehouse of Bamiyan: Economic Life in Medieval Afghanistan</i> (Edinburgh, 2025), and <i>The Rise and Fall of the Barmakids: Stories from a Forgotten Persian Manuscript</i> (Edinburgh, 2026). Before joining academia, she served as a UN peacekeeper in the Balkans, Timor Leste, and other conflict zones.</p>
<p>Scott Branting, Ph.D <i>Associate Professor, Department of Anthropology, University of Central Florida</i></p>	<p>Dr. Branting is an Associate Professor in the Department of Anthropology and in the Florida Space Institute at the University of Central Florida. He is Director of the Kerkenes Archaeological Project in central Türkiye and has extensive experience utilizing technology to solve anthropological problems. Dr. Branting has been an active archaeologist for 33 years, working on five continents, and has been a Geographic Information Systems (GIS) specialist for 28 years. He served for 10 years as the Director of the Center for Ancient Middle Eastern Landscapes (CAMEL) at the Institute for the Study of Ancient Cultures (ISAC) of the University of Chicago. He also worked with the US State Department via the American Schools of Overseas Research (ASOR) Cultural Heritage Initiatives collaborative project to document and mitigate damage to cultural heritage sites during conflict.</p>

Speaker	Biosketch
<p>Barbara Couturaud, Ph.D <i>Curator, Department of Near Eastern Antiquities, Musée du Louvre</i></p>	<p>Dr. Couturaud is an archaeologist specializing in Mesopotamian iconography during the third millennium BC. She is currently curator for the Mesopotamian section in the Department of Near Eastern Antiquities at the Musée du Louvre (early periods). Her research focuses on the iconography of power and war, and issues related to the iconography of gender and identities. She has worked on numerous sites in France and the Near East (Iraq, Syria, Jordan, Kuwait). She is currently supervising the excavations at the palace of Sargon II within the Khorsabad Archaeological Project.</p>
<p>Michael Fisher, Ph.D <i>Group Leader, Max Planck Institute of Geoanthropology</i></p>	<p>Dr. Fisher develops and applies digital methodologies for archaeological discovery and cultural heritage preservation. He uses semantic modelling and Linked Open Data protocols to integrate remote sensing datasets with traditional detection and excavation methods for the cultural landscapes of countries in Western and Inner Asia such as Iraq, Syria, Afghanistan, and Mongolia. Mike received his PhD from the University of Chicago in Near Eastern Art & Archaeology in 2017. Focusing on the emergence of complex sociopolitical systems in Late Chalcolithic Syria, he began developing digital techniques for capturing, storing, and interrogating archaeological datasets. He then pursued a parallel interest in digital cultural heritage preservation, becoming the Field Director of the University of Chicago partnership with the National Museum of Afghanistan. He co-edited the volume <i>Preserving the Cultural Heritage of Afghanistan</i>, which documents the country's rich cultural patrimony and the means available for protecting it. He currently leads the Mongolian Archaeology Project: Surveying the Steppes (MAPSS), which applies the latest digital techniques, such as Machine Learning feature detection, to the nation's vast landscapes of immovable cultural heritage.</p>
<p>Prof. Dr. Barbara Helwing <i>Director, Museum of the Ancient Near East, Berlin</i></p>	<p>Dr. Helwing is Director of the Vorderasiatisches Museum (Museum of the Ancient Near East) in Berlin. She is an archaeologist holding a Ph.D. in Prehistoric and Near Eastern Archaeology from the University of Heidelberg. After appointments in Ankara, Berlin, Lyon, and Sydney, she returned to Berlin to lead the museum and currently serves as honorary professor at the Freie Universität Berlin and the University of Sydney. She has directed archaeological fieldwork in Iran, Turkey, Azerbaijan, and Sri Lanka, and is currently excavating the late Pre-Pottery Neolithic B (PPNB) site of Gürcütepe in Turkey.</p>
<p>Wouter Henkelman, Ph.D <i>Associate Professor, École Pratique des Hautes Études (EPHE)</i></p>	<p>Dr. Henkelman is Associate Professor for Elamite and Achaemenid studies at the École Pratique des Hautes Études in Paris and director of the Centre Sarikhani d'Études Élamites. At the University of Chicago, Institute for the Study of Ancient Cultures (ISAC), he co-directs (with Mark Garrison) the Persepolis Fortification Archive Project.</p>
<p>Jean-Jacques Herr, Ph.D <i>Archaeologist, Archaïos</i></p>	<p>Dr. Herr is an archaeologist specializing in the Iron Age in Northern Mesopotamia and the Zagros Mountains. He studies the settlement patterns and connectivity of ancient societies through their material production. He investigates the organization of settlements and tracks the transfer of knowledge in pottery manufacturing techniques. These two aspects help understand how Iron Age societies were organized.</p> <p>Dr. Herr is currently employed by the private company Archaïos, and he is a lecturer in Near Eastern Archaeology and Archaeology of Iran at the University of Strasbourg. Since 2012, he has been working in Iraq and Iraqi Kurdistan, participating in a range of projects including excavation, pedestrian and magnetic survey, and the study of material in Assyrian capitals and multi-period sites in the Zagros Mountains.</p>

Speaker	Biosketch
<p>Eric Hollinger, Ph.D <i>Tribal Liaison, Repatriation Office, Smithsonian Institution Museum of Natural History</i></p>	<p>Dr. Hollinger is a Tribal Liaison in the Repatriation Office of the Smithsonian Institution’s National Museum of Natural History. Over the past 28 years, he has carried out repatriation responsibilities for the University of Illinois, Harvard University and the Smithsonian. He has worked with Indigenous communities and collections from northern Europe and all areas of the United States and Canada. In collaboration with American Indian tribes and Alaskan Natives, Hollinger has pioneered efforts to digitize and then 3D replicate a wide range of important cultural heritage items, including sacred objects and funerary objects, for education and cultural restoration.</p>
<p>Alex Kashkin <i>Engineer</i></p>	<p>Alex is an engineer and collector of art. Distinctly multidisciplinary, Alex’s work has spanned several fields, ranging from computer chip manufacturing to space propulsion and medical diagnostics. While his most lauded inventions have been in the realm of electron lithography, Alex thinks his most useful one is his most recent; applying digital inpainting techniques to physically restore paintings. Alex holds a master’s degree in mechanical engineering from MIT, following his undergraduate degrees in Mechanical Engineering and Economics from UT Austin.</p>
<p>Maja Kominko, D.Phil <i>Director of Projects, The Heritage Management Organization</i></p>	<p>Maja Kominko is a historian and cultural heritage expert. She holds a DPhil in Archaeology and History from the University of Oxford. She has published extensively on the intellectual history of the late antique and medieval Middle East. Alongside her academic career at universities in the UK, USA and Turkey, she has over 15 years of experience designing and leading large-scale international programs to protect cultural heritage in conflict and post-conflict contexts.</p> <p>She has directed and managed major initiatives in Iraq, Yemen, Pakistan, Palestine, and Ukraine, focusing on manuscript preservation, museum collections, traditional architecture, and community-led heritage practices. She held the position of Program Director at the Arcadia Fund in London, the Scientific Director of ALIPH Foundation in Geneva, and the Director of Projects at Heritage Management Organization in Athens. Her work bridges research and practice, combining historical scholarship with capacity building, digital documentation, and policy engagement. She regularly teaches, advises international organizations, and is actively involved in several advisory and research networks in cultural heritage.</p>

Speaker	Biosketch
<p>Dominik Lukas Graduate Student, University of Chicago</p>	<p>Dominik Lukas is a researcher on the development of field-recording databases for social sciences, archaeology, and cultural heritage, particularly interested in the role these systems play in the production of scientific knowledge. He studied archaeology (pre- and protohistory) and philosophy at the University of Leipzig (Germany), he has worked as a developer of web-applications at the German Archaeological Institute (DAI) and was the coordinator for research databases at the Excellence Cluster Topoi in Berlin (Germany). He has been working as database developer at the Çatalhöyük Research Project (Stanford University). During a fellowship at the University of Padova (Italy) he was involved as consultant on database development and semantic web technologies for the Card3D project.</p> <p>He is currently a PhD candidate in Anthropology at the University of Chicago, where his project on the “Ontology Gap” focuses on how the development and usage of archaeological information systems impacts the production of knowledge and the making of meaning on the level of the individual researcher. In this context he also conducts excavations in a late Hellenistic building complex at Türkmen-Karahöyük (Türkiye). At present he is Acting Director of CAMEL Lab (Center for Ancient Middle Eastern Landscapes) at the Institute for the Study of Ancient Cultures (University of Chicago) where he is managing the lab and consulting on digital methods in archaeology.</p>
<p>Lily McEwen Graduate Student, University of Missouri, MU Institute for Data Science and Informatics</p>	<p>Lily McEwen is a PhD student at the University of Missouri Institute for Data Science and Informatics studying geospatial and heritage informatics. Her research focuses on how Indigenous cultural protocols, and research priorities can inform heritage informatics, using geospatial technologies to support Alaska Native digital heritage preservation.</p>
<p>Vincent Michel, Ph.D Faculty Member, University of Poitiers, Director of La CelTrac (Research Unit on the Illicit Trafficking of Cultural Property)</p>	<p>Dr. Michel is Professor of Oriental Archaeology at the University of Poitiers. Both an archaeologist and orientalist, he has devoted the past thirty years to a multifaceted career encompassing teaching, research, fieldwork (in Palestine, Libya, Jordan, Iraq, among others), and the fight against the illicit trafficking of cultural goods from the MENA region (objects, trade routes, and smuggling networks). He teaches this subject at various universities and institutions and regularly trains both French and international law enforcement agencies and judicial authorities. In collaboration with international organizations such as UNESCO and ICOM, he has also raised awareness on this topic as consultant. He is the author of numerous scholarly articles and frequently organizes academic events and workshops bringing together the main stakeholders involved in combating the illicit trafficking in cultural property.</p> <p>In 2012, he created CelTrac (Research Unit on the Illicit Trafficking of Cultural Property) whose aim is to involve the academic community in the fight against trafficking by providing intelligence, analysis, expertise, and alerts to law enforcement agencies and judicial authorities.</p>
<p>Deborah Papiernik, Senior VP, Creative Alliances, Ubisoft</p>	<p>Deborah has been with Ubisoft for 25 years, holding different positions in Marketing, Business Development and Game Development. Passionate about building bridges between different industries, Deborah explores new business opportunities for Ubisoft, looking beyond the world of video games to bring its brands to wider audiences, and to share the company’s expertise with new sectors.</p>

Speaker	Biosketch
<p>Georges-Jean Pinault, Ph.D <i>Professor of Linguistics, École Pratique des Hautes Études (EPHE)</i></p>	<p>Georges-Jean Pinault, born 1955 in Paris (France) is professor for the philology of Buddhist texts of Central Asia at the École Pratique des Hautes Études, Paris Sciences et Lettres. His area of expertise covers the historical and comparative linguistics, especially of Indo-European languages, and of the literatures written in Central Asian languages, which belong to different languages families, non Indo-European as well as Indo-European. His fields of investigation include Sanskrit texts, from Vedic onwards, as well as Tocharian and Old Turkic texts. He has published extensively on Tocharian manuscripts and Buddhist texts written in the two Tocharian languages. He is much involved in the analysis of parallel texts in various Central Asian languages, especially with respect to stylistics, vocabulary and translation techniques.</p>
<p>Allie Scholten <i>Archivist, Institute for the Study of Ancient Cultures (ISAC) University of Chicago</i></p>	<p>Allie Scholten is the Archivist at the Institute for the Study of Ancient Cultures at the University of Chicago. Prior to this role, she served as the Digital Collections Manager at the University of Chicago's Visual Resources Center. Her professional background in archival and museum collections management focuses on digitization, ethical description, and visual literacy.</p>
<p>Alexandra Taitt <i>Associate Curator, Anchorage Museum & Graduate Student, University of Alaska Fairbanks</i></p>	<p>Alexandra Taitt (she/her) is an Associate Curator at the Anchorage Museum and Ph.D. student at the University of Alaska Fairbanks studying digital heritage preservation. Alex has a background in anthropology, computer science and museum studies, and has worked in education, public programming, heritage preservation, and curatorial work in the museum field. She lives and works on Dena'ina Ełnena in Anchorage, Alaska.</p>
<p>Yves Ubelmann <i>President & Founder, ICONEM</i></p>	<p>Yves graduated from the Versailles School of Architecture in 2006 and has worked as an architect throughout the Near East and Central Asia. In 2013, he founded ICONEM, a start-up specializing in the digital preservation of endangered archaeological and cultural heritage sites. Active in more than 30 countries, ICONEM creates ultra-realistic digital replicas of significant archaeological and heritage sites, including Pompeii in Italy, Delos in Greece, and Mes Aynak, among many others.</p>
Conference Organizers	
<p>Gil J. Stein, Ph.D <i>John and Jeanne Rowe Professor of Near Eastern Archaeology, University of Chicago</i></p> <p><i>Director, Chicago Center for Cultural Heritage Preservation (C3HP)</i></p>	<p>Gil J. Stein is the director of the Chicago Center for Cultural Heritage Preservation (C3HP) and the Rowe Professor of Near Eastern Archaeology in the Department of Near Eastern Languages and Civilizations (NELC) and at the University of Chicago's Institute for the Study of Ancient Cultures (ISAC). His research investigates the development of the earliest urbanized states in the Near East, ancient economies, the archaeology of colonialism, interregional interaction, zooarchaeology, and the preservation of cultural heritage. He has directed excavations in Turkey and Syria and is currently conducting excavations at the Chalcolithic site of Surezha (fifth–fourth millennium BC) in northeastern Iraq.</p> <p>From 2012-2020, he led cultural heritage preservation projects in Afghanistan and is currently working on projects of site preservation and conservation training in Central Asia.</p>

Speaker	Biosketch
Marc Maillot, Ph.D <i>Director & Chief Curator ISAC Museum University of Chicago</i>	Dr. Maillot's research interests include vernacular architecture in Egypt and Sudan, Meroitic iconography, social anthropology, and urbanism in antiquity. His current research focuses on Osirian cult practices in Meroitic royal pageantry, architectural representation in the iconography of the Middle Nile Valley, and Sudanese towns in late antiquity as production centers for the centralized Meroitic state. His work with the Institute for the Study of Ancient Cultures (ISAC) includes a course he co-created with Professor Gil Stein on cultural heritage management in conflict areas, offered at the Center for Middle Eastern Studies (CMES) in 2024.
Luc Aubry, Ph.D <i>Director, Department of International Relations, École Pratique des Hautes Études (EPHE)</i>	Following an earlier career teaching French language, literature, and theatre in France and abroad, Luc Aubry spent fifteen years as a Cultural Cooperation Attaché for the French Ministry for Europe and Foreign Affairs. A Russian language specialist, he worked in Azerbaijan, Lithuania, and Russia. From 2018 to 2022, working closely with the Science and University Cooperation Attaché at the French Embassy in Moscow, he directed the French University College at Lomonosov Moscow State University for Expertise France, as an International Technical Expert. He returned to France in 2022 and has served as Director of International Relations at the École Pratique des Hautes Études (EPHE-PSL) since 2024.
Timothy P. Harrison, Ph.D <i>Director & Dean Institute for the Study of Ancient Cultures (ISAC) University of Chicago</i>	Dr. Harrison's research focuses on the rise of early social complexity in the ancient Near East, specifically the complex societies of the Bronze and Iron age of the Levant. Recently, he has been leading a team engaged in post-conflict documentation, preservation, and restoration of the cultural heritage of Iraq, primarily focused on Mosul (Nineveh). He has more than 35 years of experience conducting field research, primarily in Israel, Palestine, Jordan, Lebanon, Syria, Turkey, and Iraq.

This conference is generously supported by funds from the University of Chicago International Institute of Research in Paris (IIRP), the École Pratique des Hautes Études (EPHE), and the University of Chicago Institute for the Study of Ancient Cultures (ISAC).

Interested in learning more?

University of Chicago, Chicago Center for Cultural Heritage Preservation (C3HP):

<https://cultureheritage.center.uchicago.edu>

École Pratique des Hautes Études

<https://www.ephe.psl.eu/en>

University of Chicago, Institute for the Study of Ancient Cultures (ISAC)

<https://isac.uchicago.edu>

University of Chicago, John W. Boyer Center in Paris

<https://centerinparis.uchicago.edu>

Conference Abstracts

Digital Innovations in Cultural Heritage Preservation

June 15–16, 2026 • The John W. Boyer Center, Paris, France

Organized by Gil J. Stein & Marc Maillot (University of Chicago) & Luc Aubry (École pratique des hautes études)

Emmanuelle Arnaudès, Ph.D & Alain Arnaudès

Epigraphic Survey (University of Chicago), Luxor, Egypt

Digital Archiving of the Century-Old Epigraphic Survey Archive and Preservation of the Labib Habachi Collection



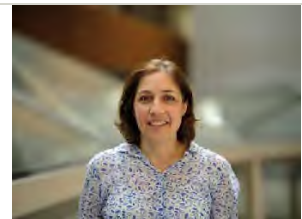
This paper traces the history of the long-term management of The Epigraphic Survey archives with digital tools and databases. This institution, based in Luxor (Egypt), was founded in 1924 by James Henry Breasted to preserve Egypt's vanishing heritage through a rigorous method of precise facsimiles and recordings, called *The Chicago House Method*. Over a century, the project expanded from documenting a single temple to covering three major archaeological sites in Thebes, accumulating a vast archive of photographs and drawings. Since 1985, The Epigraphic Survey has been using computers and information technology, ranging from basic administrative data management to digitization and 3D photogrammetry. In 2006, Ray Johnson, then the field director of The Epigraphic Survey, initiated the project to launch a database, resulting in the *Chicago House Archives Database*, which links photographs, publications, and all material provided by the Epigraphic Survey through an innovative graphical interface. Over 20 years of existence, the project has faced significant technological challenges. The question now arises regarding the long-term sustainability of the project and its potential migration to other software platforms.

Concurrently, the Epigraphic Survey is the custodian of the private archive of Labib Habachi, the most famous Egyptian Egyptologist of his time. As an inspector of Egyptian Antiquities between the 1930s and the 1960s, he assembled a unique collection of documents on sites now threatened by time and social disorder. This archive is undergoing high-resolution digitization to ensure its long-term preservation and accessibility. Identifying all this material is the next challenge. Digital Humanities and AI will be essential tools for this task. The Epigraphic Survey's mission remains unchanged: to preserve the memory of ancient Egypt and make it accessible to future generations of scholars.

Arezou Azad, D.Phil

Institut national des langues et civilisations orientales (INALCO), Paris & University of Oxford

The Invisible East Digital Corpus (IEDC): Making Documents from Iran, Afghanistan and Central Asia Openly Accessible for Research and Outreach



The IEDC (<https://invisible-east.org>) is an open-access digital corpus developed by the Invisible East programme at the University of Oxford, currently containing nearly 1,000 transcribed and translated documents from the eighth- to thirteenth-century Islamicate East (out of 1,300 with meta-data). It contains documents and fragments produced in Iran, Afghanistan, and Central Asia between the eighth and the thirteenth centuries CE, written in 10 languages, and multiple scripts. Many of the users of Invisible East's online resources, counting 40,000 to date, are based in the Persian-speaking world.

In this paper, Dr. Azad will present the online platform, discuss its inception and the challenges and lessons learned in developing it, and its value as a tool for research and outreach on the history and heritage of the region.

Scott Branting, Ph.D

Associate Professor, Department of Anthropology; Florida Space Institute, University of Central Florida; Director, Kerkenes Archaeological Project



Innovation in Cultural Heritage Documentation at Kerkenes, Türkiye

The archaeological site of Kerkenes in central Türkiye has been a leader in digital documentation for the past 33 years. The size of the site (271ha) combined with little later overburden has provided an ideal setting for technological innovations on a large-scale in remote sensing, digital recording, and modeling and simulation. These tools have been used to better understand how this short-lived, late Iron Age (ca. 620–550 BC) city was built, inhabited, and destroyed. Technologies used for documentation of cultural heritage within the city have included: aerial and satellite imagery, geophysical surveys, GPS terrain survey, terrestrial laser scanning, photogrammetry, and traditional architectural drawings and analysis. Long-term digital documentation allows for monitoring of both buried and free-standing heritage and assessment of preservation and reconstruction mitigation efforts.

In recent years innovations have grown to include the development of prototype augmented reality data collection software, the use of terrestrial robotic platforms, artificial intelligence methods for join-finding among pottery or stone fragments, and even satellite development efforts. The impact of the documentation techniques at Kerkenes extend beyond just this ancient city, with methods developed by the team being applied to archaeological and heritage sites worldwide.

Barbara Couturaud & Jean-Jacques Herr, Ph.D

Couturaud: Curator, Dept. of Near Eastern Antiquities, Musée du Louvre
Herr: Archaeologist, Archaïos; Lecturer, University of Strasbourg

Digging Through the Archives of Khorsabad (Iraq): The Arkho Project



In 2023, more than a century and a half after the first pioneering excavations at the site of Khorsabad by French consuls from Mosul, a new archaeological project was launched. Among the various issues addressed, an archaeological assessment of the citadel on which the remains of the palace of the Assyrian king Sargon II (721–705 BC) are located was carried out. Quite rapidly, the fieldwork revealed remains in a very poor state of conservation, after three successive excavation phases carried out between 1843 and 1933.

Moreover, despite the excellent monographs published, it became clear that a thorough vision of the work undertaken by the previous explorers was necessary. It was hence decided to launch a detailed study of the archives of previous archaeological missions. While studying excavation archives when reopening an archaeological site is by no means revolutionary, re-reading the archives of 19th-century French consuls who excavated Khorsabad from an archaeological perspective is completely unprecedented. Indeed, these archives, which were already known, had never been considered from the scientific perspective of archaeological excavation. This paper presents the project Arkho (Archives of Khorsabad), its challenges and its substantial contributions to a better understanding of the site.

Michael Fisher, Ph.D

Group Leader, Max Planck Institute of Geoanthropology

Cultural Heritage Data Management Systems in Historical Perspective and the Value of the MAPSS Database for Mongolian Archaeological Heritage Preservation



In order to help mitigate the ever-increasing number of threats to cultural heritage around the world, protection efforts today start with a knowledge base, ideally implementing the latest in data management technologies for capturing, preserving, and sharing at-risk heritage datasets. Since 2021, the Mongolian Archaeology Project: Surveying the Steppes (MAPSS), based at the Max Planck Institute of Geoanthropology, has been working with its partners in Mongolia to digitally document the country's archaeological and ethnological landscapes using remote sensing methods, ground truthing techniques, and archival dataset integration.

In order to house the nearly 100,000 immovable cultural features it has documented, MAPSS deploys a free, open-source, geospatial, web-accessible, semantic graph database. Among the issues that MAPSS considers in the design of its data collection and management systems are breadth versus depth of data, modelling uncertainty at scale, multilinguality, multivocality, and interpretive multiplicity. This paper demonstrates how the project's system design principles reflect this balance and presents an argument for the interrelationship between reproducibility, inclusivity, and sustainability.

Prof. Dr. Barbara Helwing

Director, Vorderasiatisches Museum (Museum of the Ancient Near East), Berlin; Honorary Professor, Freie Universität Berlin & University of Sydney

Multiple Benefits of Digital Approaches to Cultural Heritage Through Preserving, Researching, Sharing: Examples from the Vorderasiatisches Museum

Cultural Heritage is at risk, always, and even when safely kept in a museum. The five columns of museum work—acquiring, preserving, researching, presenting and communicating objects of cultural heritage—in themselves bear risks to cultural heritage. While objects in storage are closely monitored, risks occur during transport, exposure to visitors, sampling and teaching.

The Vorderasiatisches Museum (VAM) has therefore resorted to a strategy of providing digital copies and documentation to back up those processes that involve extensive handling of museum objects. The presentation will introduce three representative case studies from ongoing museum practice: (1) the digital documentation of the historical exhibition in the Pergamon Museum, (2) the generation of digital artefacts for teaching and exhibition, and (3) the provision of research data according to FAIR principles through openly accessible frontends. These practices contribute to better safeguarding of museum objects in the long run.

Wouter Henkelman, Ph.D

Associate Professor, École Pratique des Hautes Études (EPHE)

The Persepolis Fortification Archive Project

Initiated by Matthew Stolper (University of Chicago), the Chicago-based Persepolis Fortification Archive Project initially set out to document the Elamite, Aramaic and glyptic evidence from thousands of clay tablets found at Persepolis (dating to around 500 BCE) and to make these online available. The project was conceived as a rescue operation under litigation that threatened to render the unique material inaccessible for academic study. Throughout the last decade and certainly after the legal threat had been resolved favorably, the focus has shifted from photography

and preliminary edition to final editions and to more exploratory approaches. Various online and offline tools have played a major role in this. The project, if only because of its longevity in digital terms, has also seen serious challenges in terms of data preservation and perennity of online platforms.

Eric Hollinger, Ph.D

Tribal Liaison, Repatriation Office, National Museum of Natural History, Smithsonian Institution

3D Digitization and Replication: A Development of the Repatriation Office of the National Museum of Natural History



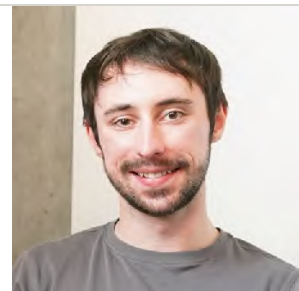
Repatriation of cultural heritage items can involve complex issues of religious interests, property law, provenance and indigenous rights. In that context, the Repatriation Office of the National Museum of Natural History has worked to build trust and collaborative relationships going beyond basic returns of human remains and objects.

At the request of Indigenous communities, and working with expertise and technologies across the Smithsonian, the Repatriation Office has pioneered 3D digitization and physical replication of cultural heritage items including sacred objects, objects of cultural patrimony, funerary objects, hunting tools and other utilitarian items. Innovative uses of 3D technology combined with traditional cultural protocols has even led to the restored use of ceremonial items once thought lost forever. These collaborations are inspiring museums and source communities around the world to consider the use of 3D technology in the service of their own educational and cultural missions.

Alex Kashkin

Engineer

Physical Restoration of a Painting with a Digitally Constructed Mask



The rise of digital image manipulation has led to substantial benefits for the conservation of paintings; from subsurface visualization to craquelure mapping and generative inpainting, these techniques provide unprecedented insights into artworks. The use of generative inpainting for the physical restoration of paintings was first published in the summer of 2025, based on the application of a microthin, easily-removable mask to the surface of an artwork. The technique dramatically reduces the labor required for retouching; for many paintings of lesser pedigree, masking provides a new opportunity for restoration of these works, which otherwise remain in storage.

Since publication, masking has spurred global dialogue about the interplay between technology and art. In the following months, the presenter engaged hundreds of conservators across the world, collecting remarkably diverse feedback, helping with new adaptations of the technology, and continuing to develop masking with the needs of the conservation community coming first. This presentation will highlight the most important developments that have transpired in this dynamic first year of masked restoration, including the surprising number of emergent applications for masking and recent progress on the masking of oil paintings on canvas.

Maja Kominko, D.Phil

Director of Projects, Heritage Management Organization

Digital Tools for Heritage at War



This paper examines the use of digital tools for the management and preservation of cultural heritage during armed conflict. Drawing on a broader context, especially on experiences from the Middle East, it focuses on a collaborative project developed with heritage and organizations in Ukraine during the ongoing war. The paper explores how experimental digital approaches can support both the continuity of cultural institutions and the production of historical knowledge under conditions of displacement and material loss.

Dominik Lukas

Acting Director, CAMEL Lab; PhD Candidate in Anthropology, University of Chicago

The CAMEL Laboratory: Current Research and Projects

The Center for Ancient Middle Eastern Landscapes (CAMEL) is a laboratory conducting geospatial research at the Institute for the Study of Ancient Cultures. Since its inception in 1998, CAMEL has curated maps, aerial and satellite imagery for digital conservation and provided access by continuously developing novel ways to allow researchers to engage with these remote sensing data. In this vein, CAMEL recently started to collaborate with the Big Ten Academic Alliance to enhance discoverability and visibility by implementing recent metadata standards.

The U-2 Historical Imagery Acquisition Project showcases CAMEL's traditional role to open previously inaccessible datasets for research. The combination of early temporal coverage and higher spatial resolution than comparable military reconnaissance datasets makes these data an important resource for archaeological research. In order to leverage these and other remote sensing data, the AI-Assisted Archaeological Remains Detection (A3RD) Project develops an open-source, artificial-intelligence-based geospatial remote-sensing platform. In collaboration with EAMENA (Oxford University) and the French National Research Institute for Agriculture, Food, and the Environment (INRAE), the A3RD platform allows for using AI to detect archaeological features, with implemented technologies kept transparent, reusable and open for training on new features by researchers of all levels of technical expertise.

Vincent Michel, Ph.D

Faculty Member, University of Poitiers; Director, La CelTrac (Research Unit on the Illicit Trafficking of Cultural Property)

La Celtrac (Research Unit on the Illicit Trafficking of Cultural Property) and the Digital Monitoring of Illicit Trafficking



One of the major challenges in the fight against the illicit trafficking of cultural property is to strengthen cooperation between academic experts, investigators (customs, police, gendarmerie), and judicial authorities in order to improve the identification, analysis, monitoring, and prosecution of trafficking networks. CelTrac (Research Unit on the Illicit Trafficking of Cultural Property), within the HeRMA laboratory of the University of Poitiers with national competence, was conceived as an interdisciplinary academic platform aimed at reinforcing the “research-investigation” partnership by bringing together specialists in archaeology, art history, law, political science, provenance research,

and digital humanities with law enforcement and judicial actors engaged in the protection of cultural heritage. This presentation will examine how academic research can directly support operational investigations through the production of targeted studies, provenance analyses, typological research, mapping of trafficking and laundering routes and actors, as well as the digital monitoring of illicit markets and online networks.

Deborah Papiernik

Keeping Heritage Alive: From digital reconstruction to cultural transmission, the Notre-Dame case at Ubisoft



At Ubisoft, authenticity is not about perfect replication, but about meaning, intent, and lived experience. Through Assassin's Creed, we combine historical research, expert insight, and partnerships with cultural institutions to recreate the past as an interactive world that feels true. Notre-Dame de Paris is a powerful example: a digital interpretation born in a game that became a tool for preservation, education, and collective memory after the 2019 fire. When the cathedral closed, its digital counterpart kept Notre-Dame present for all audiences, and that role continues after its reopening through visitor experiences and new forms of cultural transmission.

This talk explores how authenticity and interactivity can sustain long-term attachment to heritage and keep it meaningful for future generations.

Georges-Jean Pinault, Ph.D

Safeguarding the Manuscript Heritage of Central Asia (Safeguarding the Manuscript Corpus of the Silk Road)

The manuscripts discovered on the different branches of the so-called Silk Road have been investigated for more than one century, through several productive ventures, which were devoted to the decipherment, translation and interpretation of texts in languages which were poorly known or totally unknown at the beginning of the 20th century. The paper will focus on the cultures of the Tarim Basin, in present-day Xinjiang, China. During the first millennium CE and later this region of multifarious contacts has seen the expansion of religions coming from the West, especially Iran and Gandhāra, as well as the transfer of different literatures, scripts, and various cultural artefacts. Beyond the cumulative expertise of standard philology, the resort to digital humanities helps to safeguard the transcriptions and translations of the manuscripts themselves, in the form of online databases, based on the materials kept in several libraries and museums. These tools offer also the possibility of further research on the languages and on parallel texts, which is quite relevant when the manuscripts are fragmentary. The paper will review these issues, based on the multidisciplinary approach which was pursued in the project HisTochText (History of Tocharian Texts of the Pelliot Collection), 2018-2024, funded by the European Research Council, Advanced Grant Horizon 2020 (Action number 788205). The main goal was the reconstruction of the manuscript culture of Buddhism in the region of Kucha, on the basis of manuscripts kept at the Bibliothèque nationale de France.

Allie Scholten

Archivist, Institute for the Study of Ancient Cultures (ISAC), University of Chicago

AI Strategies and Cultural Heritage Research: The ISAC Data Research Center (DRC) and the University of Chicago AI Initiative



Artificial intelligence is often presented to the public as a tool capable of answering questions autonomously and transforming knowledge production. In cultural heritage research, however, its role has been more measured; scholars use AI as one method within a broader computational toolkit. This paper presents as case studies the work of the Institute for the Study of Ancient Cultures (ISAC) Data Research Center within the University of Chicago's AI Pillar initiative, demonstrating how AI can advance heritage preservation while reinforcing, rather than replacing, expertise.

AI systems approximate human reasoning because they are trained on large corpora of human-generated data; their outputs reflect patterns in existing knowledge rather than independent understanding. Major breakthroughs using AI still require human judgment at critical junctures. As a result, scholarly expertise remains essential for interpretation, validation, and contextualization. Recognizing this, the ISAC Data Research Center is developing approaches that integrate AI tools directly into expert workflows to increase efficiency while balancing conscientious uses of AI tools, ethical implications, and scholarly impact.

With the support of the University of Chicago's AI Pillar initiative, ISAC is leading several projects leveraging AI as an additional research tool within users' toolkits, including "AI and Human-Environment History: Ancient Cultures, Modern Insights" and the Electronic Chicago Assyrian Dictionary (eCAD), transforming increasingly large archival and data sets into manageable projects. These initiatives highlight emerging AI-assisted research pipelines in which machine-generated insights support hypothesis formation, while field specialists retain responsibility for evaluation and interpretation.

Lily McEwen, Alex Taitt, Medeia Csoba DeHass, Ph.D (with co-authors)

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Advancing Heritage Preservation Through Artificial Intelligence: the Alaska Native Heritage from the Bering Strait Region

Artificial Intelligence (AI) has rapidly become widespread in everyday life and in research, yet our understanding of its ethical implications and practical implementation remains underdeveloped. This is particularly true when working with Native Nations and their heritage within the Indigenous Data Governance (IDG) framework. AI offers significant benefits for accelerating research and analysis, and enhanced capacities for heritage preservation and perpetuation. Also, there are well-founded concerns regarding loss of data sovereignty, the potential extension of extractive research paradigms to computational environments, and the loss of human agency in research methodology and output. Grounded within the IDG and Co-production of Knowledge

frameworks, we offer effective solutions to address concerns associated with AI integration in research from diminished epistemic rationale to lack of critical engagement with methodological practice. In this paper, we discuss case studies from our ongoing, long-term collaboration with Alaska Native communities that center knowledge repatriation through the incorporation of emerging technologies, and equitable team science to critically evaluate AI tools for their potential contribution to research innovation. We highlight the importance of aligning and tailoring AI capabilities to community-defined data governance needs to simultaneously maximize locally meaningful outcomes and broader contributions to advancing science.

Yves Ubelmann

Architect, Co-Founder & President of Iconem & Heritage Watch

HeritageWatch.AI - What's at Stake

HeritageWatch.AI is an independent, non-commercial initiative launched in February 2025 at the French Ministry of Culture during the AI Action Summit in Paris. It was founded by the 3D-modelling firm Iconem, satellite imagery provider Planet Labs PBC, the intergovernmental heritage body ALIPH, and Microsoft.



Its core stake is a shift from reactive to predictive heritage protection. The method combines high-resolution satellite imagery from Planet Labs' fleet of 200 satellites with Iconem's expertise in creating 3D models of complex heritage sites, processed through Microsoft's AI for Good Lab. The aim is to detect change across the world's archaeological and heritage sites, mapping natural disasters such as earthquakes, floods, and fires, and assessing damage caused by war and conflict. Ultimately, the goal is to provide real-time, actionable data to heritage leaders so they can better protect vital sites in times of crisis, giving states and experts a tool for early mitigation rather than after-the-fact response.
