

Artefacts XXIII: Relevance of Collections

Adler Planetarium, October 14-16, 2018

Program overview

Sunday, 14

10:00-2:00	Badge pick-up. Free museum exploration and sky shows w/ conference badge.
2:00-2:15	Welcoming remarks, Johnson Family Star Theater
2:15-4:00	Paper session 1, Johnson Family Star Theater: <i>Thinking relevance through object histories</i>
4:00-4:30	Coffee break
4:30-6:00	Paper session 2, Johnson Family Star Theater: <i>Bringing collections to life</i>
6:00-7:00	Gallery tours
7:00-9:00	Conference dinner

Monday, 15

8:00-9:00	Breakfast
9:00-10:30	Roundtable, Johnson Family Star Theater <i>Art and Artifact: Collections, Museum Practice, and the Aesthetics of Science and Technology</i>
10:30-11:00	Coffee break
12:30-12:30	Paper session 3, Johnson Family Star Theater: <i>Material culture, education, and narratives</i>
12:30-2:00	Lunch break
2:00-3:30	Paper session 4, Johnson Family Star Theater: <i>Building and (re)contextualizing collections</i>

3:30-4:00	Coffee break
4:00-5:00	Museum updates, Definiti Theater
5:00-6:30	Special session, Definiti Theater: <i>Enlivening collections: digital access, citizen science, and immersive visualization at the Adler Planetarium</i>

Tuesday, 16

8:00-9:00	Breakfast
9:00-10:45	Paper session 5, Johnson Family Star Theater: <i>Artifacts and collections across disciplinary boundaries</i>
10:45-11:15	Coffee break
11:15-12:45	Paper session 6, Johnson Family Star Theater: <i>What to collect, what for, for whom?</i>
12:15-1:00	Closing remarks
Afternoon: free museum exploration and sky shows w/ conference badge. *	

*Complimentary tickets to [sky shows](#) and to the [Atwood Sphere](#) to be requested at the box office

Program

Sunday, 14

10:00 - 2:00

Registration & badge pick-up

Free museum exploration and sky shows at discretion w/ conference badge*

***Complimentary tickets to sky shows and to the Atwood Sphere to be requested at the box office**

2:00-2:15

Welcoming remarks

Andrew Johnston, Adler Planetarium

Johnson Family Star Theater

2:15-4:00

Paper session 1, Johnson Family Star Theater:

Thinking relevance through object histories

Chair: Helmuth Trischler

Lippisch DM 1, Museum Artifact Reassessed

Russel Lee, Smithsonian National Air and Space Museum

The Hofgaard machine: Prototype of an ingenious invention, or just a piece of metal scrap?

Dag Andteassen, Norwegian Museum of Science and Technology

How science works: the 'failure' of MiniGRAIL

Dirk van Delft, Rijksmuseum Boerhaave / Leiden University

4:00-4:30: Coffee break

4:30-6:00

Paper session 2, Johnson Family Star Theater:

Bringing collections to life

Chair: Pedro Raposo

Game On: Using Digital Technologies to Bring Collections to Life
Erin Gregory, Ingenium Canada (Canada Aviation and Space Museum)

"Hear My Voice": Learning from Alexander Graham Bell's Volta Laboratory Sound Recordings
Carlene Stephens, National Museum of American History

Making silent artifacts speak: Tinfoil recordings, digitization projects, and the relevance of collections
Frode Weium, The Norwegian Museum of Science and Technology

6:00-7:00 - Gallery tours

7:00-9:00 - Conference dinner

Monday, 15

8:00-9:00 - Breakfast
Johnson Theater

9:00-10:30
Roundtable, Johnson Family Star Theater:
Art and Artifact: Collections, Museum Practice, and the Aesthetics of Science and Technology

Pedro M. P. Raposo (chair), Adler Planetarium
Claudia Swan, Northwestern University
Jennifer Nelson, School of the Art Institute of Chicago
Jonathan Tavares, Art Institute of Chicago

10:30-11:00 - Coffee break

11:00-12:30
Paper session 3, Johnson Family Star Theater:
Material culture, education, and narratives
Chair: Andrew Jonhston

Object-based Science Education, Artefacts and Material Culture in Science
Nicolas Robin, University of Teacher Education St. Gallen (Switzerland)

Objects or Narratives? The (Ir)relevance of Collections at the mid 20thc Science Museum
Tim Boon, Science Museum, London

Telling the Sogdian Story: Collaboration and Digitization as Practice Through Political Barriers and Over Distance
Kimon Keramidas, New York University

12:30-2:00 - Lunch

2:00-3:30

Paper session 4, Johnson Family Star Theater:
Building and (re)contextualizing collections
Chair: Alison Boyle

Experts, wish lists and collections. How the collection of electrical machines at the Deutsches Museum came together
Frank Ditmann, Deutsches Museum

From Primitive Art to the Arts of Africa and the Americas: the Changing Presentation of the Art Institute's Collection of Non-Western Art
Elizabeth Pope, Art Institute of Chicago

The Changing Meaning of the National Air and Space Museum's Spacesuit Collection
Cathleen Lewis, Smithsonian National Air and Space Museum

3:30-4:00 - Coffee break

4:00 Adler Planetarium welcome
Michelle Larson, President, Adler Planetarium
Definiti Theater

4:00-5:00 - Museum updates
Definiti Theater

5:00-6:30
Special session, Definiti Theater:

Enlivening Collections: Digital Access, Citizen Science, and Immersive Visualization

Andrew Johnston (chair), Chris Helms, Jessica BrodeFrank, Samantha Blickhan, Mark SubbaRao, Adler Planetarium

- Dinner on your own -

Tuesday, 16

8:00-9:00 - Breakfast

9:00-10:45

Paper session 5, Johnson Family Star Theater:

Artifacts and collections across disciplinary boundaries

Chair: Tim Boon

Polytechnic museum in the XXI century. Making path to the future.

Roman Artemenko, Polytechnic Museum, Moscow, Russia

Design objects in museums: different lenses, (re)new objects

Sandra Senra, Faculty of Arts, University of Porto, Portugal

Collections and everyday life: an interdisciplinary approach to objects and practice

Alice Cliff, Science Museum Group

10:45-11:15 - Coffee break

11:15-12:45

Paper session 6, Johnson Family Star Theater:

What to collect, what for, for whom?

Chair: Martin Collins

A retrospective look at contemporary collecting

Tacye Philipson, National Museums Scotland

What Shall We Do with all this Cool Stuff?

Lisa Nocks, IEEE History Center

What's Worth Preserving? A Collection of Letters from the Chicago Design Museum

Tanner Woodford, Chicago Design Museum

12:45-1:00

Final remarks, Johnson Family Star Theater

Afternoon: free museum exploration and sky shows at discretion w/ conference badge*

*Complimentary tickets to sky shows and to the Atwood Sphere to be requested at the box office

Abstracts

Lippisch DM 1, Museum Artifact Reassessed

Russell Lee, Smithsonian National Air and Space Museum

In 2011, leadership at the National Air and Space Museum called for curators to reexamine the collection for superfluous artifacts. My general knowledge of the glider collection led me to consider the Lippisch DM 1 be a candidate for deaccession. It had never flown except in a wind tunnel and Museum staff had refused to add it to the collection in 1948. The U. S. Air Force proposed to dismantle and salvage the DM 1 and the museum curator agreed! A decade later, the NASM did accept the glider but shipping it was difficult and the DM 1 arrived in several pieces. In my 2011 reappraisal, I was again questioning why the museum should keep the artifact until a thoughtful colleague forwarded an email in 2012 that fundamentally altered my thinking. I discovered that the Lippisch DM 1 had played a critical role in developing delta wing jet aircraft. My paper discusses how and why our interpretation of the DM 1 artifact has changed due to societal changes and pressures.

The Hofgaard machine: Prototype of an ingenious invention, or just a piece of metal scrap?

Dag Andteassen, Norwegian Museum of Science and Technology

Among the Hollerith and the IBM's, the Apples and the first Norwegian computers in the Norwegian Museum of Science and Technology's collection, is a heavy desk shaped machine that has never been out of the storage rooms since its arrival at the museum in 1962. It has never been judged as relevant in any computer exhibition. Could we still make this artefact relevant for the new planned computer exhibition by approaching it in new ways? Rolf Hofgaard was an autodidact calculating machine developer, born in Hamar in 1889. He was granted several patents in the 1920'ies that raised some awareness in the industry. In 1925 he moved to the USA, partnering with Remington in Hofgaard Remington Corp., trying to turn his brilliant ideas to business. This crashed in 1929.

Hofgaard returned to Norway where he started a new project developing a relay based analogue computer. His goal was to make the most modern office machine for its time, able to perform any tasks in a small business office. The effort would take him the next 20 years, from pre-war technology to the post-war emerging digital landscape, In 1960, the project was finally closed down, with no machines ever sold. The failed inventor, now aged 72, received a harsh letter from the company that had invested in his failed project for two decades: The machine is taking up valuable space, and unless you come and collect it within ten days, it will be sent to the scrap yard!

Instead, the machine ended up in the Norwegian Museum of Science and Technology. The machine was a failure, and has never been on display. Can it still have relevance as an artefact?

We will try to investigate the machine and the landscape it developed in by asking it lots of new questions: Was Hofgaard on to something at all with tis machine, or was he a just lone wolf on a side track from the course of computer developing? What can we learn from Hofgaaard about invention processes? What can the design tell us about the transformation from analogue to digital computers? What was the nature of the corporation between this strange inventor from Oslo and the leading business machine company at the time, Remington? Through these new investigations, we believe in restoring the artefacts relevance.

How science works: the 'failure' of MiniGRAIL

Dirk van Delft, Rijksmuseum Boerhaave/Leiden University

Rijksmuseum Boerhaave's new permanent display features a copper sphere weighing 1,400 kilos. It goes by the name of MiniGRAIL and was designed by a team led by physicist Giorgio Frossati in the 1990s. GRAIL is an acronym for Gravitational Radiation Antenna In Leiden and it is one of the more appropriate ones I know because of its wider meaning. Mini refers to the fact that the original plan was downsized, and indeed MiniGRAIL is an example of frustrated ambition. The aim of the project was to be the first to detect the gravitational waves that had been predicted by Albert Einstein's General Theory of Relativity in 1916. Everlasting fame and a Nobel prize were in the offing. But it was not to be. The plan for GRAIL was submitted to the Stichting voor Fundamenteel Onderzoek der Materie (FOM, Foundation for Fundamental Research on Matter) in 1997 following a preliminary phase. FOM was the organization which allocated funds for fundamental physics research in the Netherlands until 2007. The project involved cooling down a copper sphere with a diameter of 2.6 metres and a weight of 100 tons to 10 millikelvin, just above absolute zero. The vibration caused in the sphere by a passing gravitational wave was to be detected by sensors and then electronically amplified. It was a technological feat which entailed collaboration with Rome and São Paulo, where similar GRAILs were to be installed: certainty is only obtained when multiple observations coincide. A feasibility study led to a positive recommendation, but in the end the GRAIL lost out to other proposals in a questionable assessment procedure.

Frossati was undefeated and came up with a toned-down 68-cm version, the MiniGRAIL, which would operate at 15 millikelvin. He worked on it for ten years, but in the end it was too great a technological challenge. It was not MiniGRAIL but LIGO which detected gravitational waves.

Does this make MiniGRAIL a failure? Certainly not. 'Science is about taking risks', Frossati said. 'We were close.' MiniGRAIL fits perfectly in the story Rijksmuseum Boerhaave wants to tell: explaining how science works on the basis of a personal story and Big Questions. After all, as everyone knows: the experiments that did not work are best remembered.

Game On: Using Digital Technologies to Bring Collections to Life

Erin Gregory, Ingenium Canada (Canada Aviation and Space Museum)

The digital age has afforded museums unique opportunities in nearly every aspect of their operations. This new era is certainly not without its challenges and museums of every size are grappling with myriad new technologies at their disposal, which have the potential to greatly increase the relevance of these institutions to an increasingly online generation. Realizing that potential, however, is not a simple, straightforward, or inexpensive endeavour. As younger audiences spend more and more time online, many museums and other institutions are striving to “meet people where they are” by offering digital products. There are countless opportunities to utilize museum collections in these products, giving them new life and greater reach. As a public corporation of three national museums based in the nation’s capital, Ingenium Canada has made it a priority to have a strong digital presence in order to reach a national and international audience. Featuring our collection in digital products ensures that they have a kind of authenticity and that the core function of the museum is represented, and indeed central, in experimenting with new forms of interpretation and ways of reaching out to audiences. Over the past five years, Ingenium has co-produced several mobile games, and more recently a game for Nintendo Switch. The Ace Academy family of games collectively has over 2 million downloads worldwide. The games feature 3D renderings of the Canada Aviation and Space Museum’s collection of First World War airplanes, and two of the three also feature archival photos and smaller artifacts. Curating games is a new and very exciting way of sharing historical research and museum collections, often for non-traditional audiences. While not the “real thing”, games allow for users to interact with artifacts in ways that are not possible in a traditional museum setting. This is particularly important in transport collections as their real magic lies in their movement and sound. Often these objects are large, in storage, inoperable, too rare or too expensive to operate, and as such, remain on static display for years or even decades. Digital games can help alleviate some of the pressure to do something new with such objects and afford even the rarest of artifacts the chance to get mobile and be experienced by users all over the world, not just within the four walls of a museum. This presentation will go over the process by which the Ace Academy games were developed, with special focus on curatorial approach and the use of artifacts. It will detail lessons learned and the challenges encountered throughout the development process and after the official release of the games.

“Hear My Voice”: Learning from Alexander Graham Bell’s Volta Laboratory Sound Recordings

Carlene Stephens, National Museum of American History

In partnership with the Library of Congress (LC) and Lawrence Berkeley National Laboratory (LBL), NMAH staff have been working to recover sound from some of the earliest audio recordings ever made. NMAH’s experimental recordings, made in a baffling array of materials and formats, emerged from Alexander Graham Bell’s Volta Laboratory between 1881 and 1885, in an intentional effort to improve on Thomas Edison’s phonograph. Part of the NMAH collection for over a century, the recordings were considered unplayable, with content mostly unknown. That

changed in 2008 when, thanks to a new noncontact imaging technique developed at LBL, sound recovery began. We now can follow Bell's recorded directive from April 15, 1885: "Hear my voice."

This presentation will:

- describe the ongoing sound-recovery project
- discuss how the fragility of the recordings makes them good, but challenging candidates for a noncontact sound recovery method
- report on results to date (including playing some for the audience)
- offer preliminary thoughts about the implications of transforming the recordings from mute artifacts to eloquent voices that can guide modern scholars across many disciplines to the past

The Volta story and related objects are largely unknown outside the audio specialist community. The Volta experiments, this paper argues, deserve a higher profile in the history of early sound recording and studies of sound culture because of their formative role in establishing standards of for equipment, media, techniques for recording, and listening.

Making silent artifacts speak: Tinfoil recordings, digitization projects, and the relevance of collections

Frode Weium, The Norwegian Museum of Science and Technology

Thomas Edison's invention of the tinfoil phonograph in 1877 made it possible to record and reproduce sound for the first time. Less than 20 tinfoil recordings from the 19th Century are known to still exist. Two of these belong to the collections of the Norwegian Museum of Science and Technology. In cooperation with the National Library of Norway and audio experts in the UK and the US, the museum has undertaken two digitization projects to recover the auditive content of the recordings. Not only have these projects contributed to new knowledge about early sound recording and the history of the phonograph. They have also changed the status, meaning, and relevance of the examined objects. In this paper, I will reflect on how the two digitization projects have transformed the tinfoil recordings from artifacts which "has hung silently on the museum wall" – as media archeologist Wolfgang Ernst characterized one of these recordings (W. Ernst, *Sonic Time Machines*, 2016, p. 111) – into speaking artifacts opening up new relations and unexpected meanings. Moreover, I will discuss some further implications of these digitization projects. How can such projects create interest among the public and bring new relevance to our collections? Both projects received much attention from media and the public in general. However, they also differed in interesting ways. In the first project, the result of the digitization was presented to the public as a (more or less) solved puzzle. In the second project, the public was encouraged to contribute by letting us know what they could make out of the early versions of the digitized audio files. In my paper, I will reflect on what can be learned from these different approaches, and relate this to broader questions about museum practice and audience engagement.

Roundtable:

Art and Artifact: Collections, Museum Practice, and the Aesthetics of Science and Technology

Claudia Swan, Northwestern University

Jennifer Nelson, School of the Art Institute of Chicago

Jonathan Tavares, Art Institute of Chicago

Pedro M. P. Raposo, Adler Planetarium

Curatorial practices in art and science museums follow the same basic set of professional tenets and ethical principles, but they are distinctively informed by scholarly identities, methodological precepts, and disciplinary codes specific to each field. However, not only have museums of science and technology become more receptive to exhibition projects and other initiatives exploring the intersections between art and science, but there also seems to be a growth in exhibitions hosted by art museums highlighting or at least incorporating themes and artifacts that would traditionally fall under the umbrella of science and technology. This has happened concomitantly with a growing interaction between the fields of history of science and technology, and history of art. This roundtable brings together thoughts and insights from research and curatorial practice in both fields, and will address the following question: can the focus on aesthetic and artistic dimensions contribute to a greater relevance of scientific and technological collections in museums?

Object-based Science Education, Artefacts and Material Culture in Science

Nicolas Robin, University of Teacher Education St. Gallen (Switzerland)

What educational and cultural roles do scientific artefacts play in educational settings? How are they relevant and useful for educators in this era of multimedia education and blended learning? Should artefacts, such as a wax flower collection used historically to teach botany, be stored away on a shelf, shared as historical representations of school culture, or used by educators alongside such tools as smart boards, which offer learners virtual experiences with science? Can we teach biodiversity with stuffed animals? The proposed paper on educational material culture aims firstly to study the current use of scientific objects for the teaching of natural sciences at elementary schools and high schools. Secondly, it questions the status of artefacts as epistemic objects. The first part of the work presented is based on an inventory and theoretical analysis of a school material culture in Europe on the basis of numerous archives and textbooks from the 19th and 20th centuries. The results of this investigation demonstrate the prominent role of teaching objects in the construction of school culture since the 19th century. Moreover, they reveal the importance of putting the study of these scientific collections of artefacts into both the context of education at the school level and the historical context of their development. Referring to this reconstructed history of school material culture, we propose a sound typology of educational scientific artefacts.

In a final part of our analysis, we question the current practice of science and technology education and lay the foundations for further research questions on the immaterial nature of educational artefacts.

Objects or Narratives? The (Ir)relevance of Collections at the mid 20thc Science Museum

Tim Boon, Science Museum, London

If we are to understand how objects in collections have acquired relevance, we must face the reverse: the periods in which historical objects have seemed irrelevant. My core example comes from the directorship of Frank Sherwood Taylor (1950-55). Taylor was the closest the Museum has ever had to a historian-director. Before coming to the Science Museum, he had run the instrument museum at the University of Oxford, and he was one of the founding cabal of the British Society for the History of Science. Yet his academic writings mark him out as a devotee of text-based history who rejected the pertinence of instruments, whilst his museum priorities at South Kensington indicate a moderniser drawn to the object-light didactic display technique of Paris's Palais de la Decouverte. This paper will seek to decode this seeming paradox by addressing the immanent historiographies of the favoured new galleries in comparison with the older object-rich displays that for the curators of the 1940s and 1950s seemed tired and irrelevant. In detecting a historical identification between technological evolution and progressivist historiography I aim to situate the structural difficulties of seeking to embed the newer historiographies of science into contemporary displays.

Telling the Sogdian Story: Collaboration and Digitization as Practice Through Political Barriers and Over Distance

Kimon Keramidas, New York University

In 2012, the Freer|Sackler Asian Art Galleries of the Smithsonian Institute began an ambitious project to stage an exhibition on the Sogdians, a mercantile culture that thrived in central Asia between the 4th and 8th centuries CE. The Sogdians were at the nexus of the transcontinental trade routes known as the Silk Road, and by facilitating and promoting trade along those routes, they amassed great wealth which financed a flowering civilization centered on Samarkand and Bukhara in present-day Uzbekistan. Due to the reach of the Sogdians in influencing trade, religion, art and culture across Asia, remnants of Sogdian civilization have come to be spread across a wide array of collections, although often in small numbers and sometimes with complex provenance. All of these features made a Sogdian exhibition challenging, but also exhilarating as it would require the collaboration of cultural heritage institutes and curators from around the world. And then Crimea happened. Two years into the project, the Russian intervention in Crimea led to United States sanctions against the Russian government. Subsequent counterreactions by the Russian government included the banning of cultural loans to the United States. Considering that a significant amount of Sogdian artifacts have been collected by Russian institutions, the project seemed doomed. But rather than abandon two years of research and planning, the Freer|Sackler decided to transition the plans for a physical exhibition into a digital project.

This presentation will tell the story of the development of this digital exhibition and how it has raised interesting questions about how holders of disparate and varied collections can collaborate distantly (and around political barriers) in the service of cultural heritage work. The presentation will also detail how the digital medium allows for new creative possibilities for didactic and expressive presentation, often providing a better platform for telling an intricate and networked story such as that of the Sogdians. Furthermore the story of the development of this exhibition will reveal how projects such as these can generate an impetus for the increased digitization of collections, making difficult to access object more readily available for viewing and study by researchers and museum-going audiences.

Experts, wish lists and collections. How the collection of electrical machines at the Deutsches Museum came together

Frank Dittmann, Deutsches Museum, Munich

Museums are known to be institutions that collect objects of artistic, cultural, historical or scientific significance. The public expects a museum to take care of its objects (conservation) and make the items available mainly in exhibitions (presentation). Therefore the collection is of crucial importance for all the museum's activities. The Deutsches Museum holds more than 40 collections in various areas. One of them is a significant collection of electric motors and generators from the mid-19th to mid-20th century. It was created when the museum was founded in 1903 and is still being expanded until today. For a curator it is very important to know how the collection has come about. It is a myth that a collection represents the entire technical development in a field, and this stands as well for extensive collections of large museums, as is often assumed. In reality a collection is the result of many individual decisions made by multiple generations of curators over a long period of time. How did the collection of electric motors and generators of the Deutsches Museum arise? When the museum started its work at the beginning of the 20th century, the curators asked renowned experts in science and engineering, in particular from academia, to identify the most important milestones in the history of their respective fields of expertise. The results of the survey were compiled to so-called "wish lists". Then, the curators tried to acquire as many as possible of these items. In some cases it was easy to get an original object as a gift, which was understandably preferred. In some cases, the museum bought the relevant artifacts. If both ways didn't work, some of the milestones were reproduced as replicas. Underlying this process was the idea that the development of technological artifacts follows a sequence of steps similar to evolutionary processes in nature, such as soil formation. From this point of view an exhibition had to present many of such "development series" as completely as possible so that the visitors would learn: Technology is a quasi-natural process. The paper gives an overview on the collection process of electric motors and generators in the Deutsches Museum, from creating wish lists to obtaining objects, and discusses the resulting strengths and weaknesses of such a process between planning and contingency.

From Primitive Art to the Arts of Africa and the Americas: the Changing Presentation of the Art Institute's Collection of Non-Western Art

Elizabeth Pope, Art Institute of Chicago

A small number of non-Western works of art were added to the Art Institute of Chicago's collection from the late 1880s through the mid-1950s, yet it was not until 1957 that the museum first established a department dedicated to the acquisition of works from Africa, Oceania, and the Americas. This new curatorial department—named Primitive Art—was in direct response to the growing public interest in non-western art. Its stated purpose was to acquire “only objects of the highest aesthetic quality”—reflecting the interests of private collectors who were keen on seeing affinities of style between non-western and Modern art. With an emphasis on creating a formal aesthetic experience, installations of ‘Primitive Art’ were severe, with stark white walls and minimal cultural information. Moreover, the grouping of works from disparate peoples, places, and time periods suggested a unity of artistic expression in tribal arts, one of the foundational principles of Modernism.

Responding to the increasing scholarly specialization and the move towards cultural specificity, when the collection was moved to new galleries in the 1980s, it was organized into separate geographic areas—Africa, Oceania, and the Americas, acknowledging each as a distinct and diverse. Furthermore, the works of art were contextualized through the use of didactic labels and photographs.

With the gallery re-design in 2011, the expanded space allowed the department to show more and more diverse works, within a newly conceived design. The installation encourages visitors to look closely, focusing attention on exceptional works of art. A fuller appreciation of a work can be gained through an understanding of its cultural context, something that labels, photographs, and videos help to convey. With the re-design of the Art Institute's web page currently underway, the department will be able to add numerous supporting materials, establish links with works of art from throughout the collection and the museum as a whole, with the ultimate goal of allowing works of art to tell their unique story.

The Changing Meaning of the National Air and Space Museum's Spacesuit Collection

Cathleen Lewis, Smithsonian National Air and Space Museum

The Smithsonian Institution's National Air and Space Museum began collecting spacesuits from the National Aeronautics and Space Administration (NASA) beginning in the early 1960s. As NASA finished programmatic use of the suits, the museum sought to recreate iconic moments in the human exploration of space in displays. The opening of museum's building on the national mall in 1976 augmented the mandate to include reinforcing the national memory of the Apollo 11 Moon landing with the display of Neil Armstrong and Buzz Aldrin's suits in configurations close to how they appeared on the Moon in July 1969. Tourists flocked to the new museum to see the real things that returned from the Moon and improve their memories of grainy television broadcasts from our nearest neighbor. For decades, the museum kept up its mission through artifact loans of spacesuits and other human-related objects to museums and science centers

throughout the United States and the world. As memories aged, visitor demographics changed and museum standards for documentation artifacts have changed, and so has the meaning of the spacesuit collection. Recreating iconic moments in history fall short of educating a public that has no firsthand experience of an event. Immersive and electronic experiences go farther to place visitors into the context of the times. Simultaneously, the demands for understanding what the suits actually mean have grown. Visitors are no longer satisfied with knowing who wore a spacesuit during which specific event. They want to know whose idea was it, who built and tested it, how and why it was built in a particular way and what lessons were learned. Today, the museum's spacesuit collection is less a commemorative collection and more of an engineering and design collection that tells many stories about spacesuits here on Earth.

Special session:

Enlivening collections: digital access, citizen science, and immersive visualization at the Adler Planetarium

Andrew Johnston (chair), Chris Helms, Jessica BrodeFrank, Samantha Blickhan, Patrick McPike
Adler Planetarium

In this special session, which will include dome demonstrations, members of the Adler's collections, Zooniverse, and visualization teams will briefly address past and ongoing projects where digital tools and immersive visualization are used to bring historical artifacts and images to life; to open the Adler's collections to ever more diverse audiences; and to engage the public with historical research. They will discuss the potential and challenges of such initiatives in terms of reinforcing and expanding the relevance of the Adler's collections, and invite the audience to share their own experiences and thoughts.

Polytechnic museum in the XXI century. Making path to the future.

Roman Artemenko, Polytechnic Museum (Moscow)

Moscow's Polytechnic museum been found in the year 1872 after highly successful exhibition contributed to bicentennial anniversary of the Czar Peter the Great (1672–1725) birthday — the key figure in the history of europeanisation of Russia. During it's 145 history museum played various role in the society – Museum of Applied Knowledges (1872–1930), Exhibition of Achievements of Construction and Industrialization (1930–1950), Scientific and Educational Institution in the Field of Dissemination of Scientific and Technical Knowledge (1950–1980), Central Museum for History of Science and Technology (1980–2010), and, the latest, still transitional period for forming Museum of Science (2010- present moment), with an aim for creation of museum which will be reflecting the most actual issues of modern science, technology and civilization.

In my presentation I would like to share personal impressions (as the curator for 26 museum's collections) from working with an invited experts group under various collections, and related adventures, as well as totally new practices of expanding museum's life area by attracting new

actors – from Institutions, Universities, Art Schools, and various social groups — to pave the way for the sustainable development of collections and museum, improving public image and expanding potential network of collaborators for a complex projects.

Design objects in museums: different lenses, (re)new objects

Sandra Senra, Faculty of Arts, University of Porto, Portugal

The redefinition of discourses on the perception of what is an object of design and the systems of representation in which they are placed in, raise new questions in the field of Museology, namely with regard to the collections management field. The intention is to intersect discourses between the fields of museology and design in an attempt to understand how these representations contribute in, and for the construction of narrative models for design objects in museums. This article seeks to share and explore some of these issues and reflect on how these theoretical paradigms, mostly from the disciplines of art history and design, have contributed to the institutionalization of knowledge organization systems in museums and eventually restricted other forms of musealization of objects and design collections. It also seeks to contribute to a (re) analysis of the processes of musealization (policies, practices of collection and encourage the recategorization of objects) and expositive narratives (meanings and discourses) on the material culture linked to design in museums institutions dedicated or not to this type of collections. By enabling the interaction of different natures of knowledge, new representations can be explored, and retrospective and prospective discourses can be produced between objects within different organizations.

Collections and everyday life: an interdisciplinary approach to objects and practice

Alice Cliff, Science Museum Group, UK

At the Science and Industry Museum, Manchester, UK, we are experimenting with a new approach to scholarly inquiry in shaping the use of collections and increasing their relevance to our audiences. Working with colleagues at Lancaster University, UK, we have developed an interdisciplinary approach to object analysis drawing on material culture studies, museum studies, archaeology and sociology that has informed interpretation in our new temporary exhibition, 'Electricity: The Spark of Life'. In September 2018 we begin supervision of a collaborative PhD project using concepts and approaches from science and technology studies, material culture studies and the sociology of everyday practice applied to office work in Manchester, 1960-2017. In this paper, I will describe our methodology and provide examples of the ways in which we hope our new interpretations of the collections can make them more relevant to our audiences today.

A retrospective look at contemporary collecting

Tacye Phillipson, National Museums Scotland

Contemporary collecting is a challenging topic and subject to much current discussion, which is frequently situated in the present and recent past. However, in common with many museums, the organisation now called National Museums Scotland has a long history of contemporary collecting, and many of our now historic collections were acquired as current material. In this presentation I will look at case studies from over 160 years of contemporary collecting in Science and Technology, to show how the use and interpretation of collections can change or stay the same as they age. These shifts can be attributed to advances in science or changes in museology and societal expectations. From the world's most famous sheep, Dolly, cloned in 1996 and collected on her death in 2003, to a sectioned microscope from 1864, these will be related to our current considerations around contemporary collecting, and the potential long term future of what we collect now.

What Shall We Do with all this Cool Stuff?

Lisa Nocks, IEEE History Center

While antiques dealers mourn the loss of market for Victorian lace and mahogany bureaus, museums, historic houses, library special collections and history centers are witnessing the downsizing of baby boomer homes in a different way: They must reject offers of twentieth century scientific, medical, and technological objects of significance because of the cost of adequate personnel, equipment, and space to catalog, house, preserve, conserve, and curate collections. Given the importance being placed on science, engineering, and math careers, it is critical that both students and the public at large have access to the histories of these fields. Therefore, as we discuss questions about whether collections should be seen as the domain of researchers or the general public, we should also consider the difficulty in managing specialized collections of 20th century technical artifacts. While membership organizations have a mission to preserve the history of their members, they do not – or cannot always afford to preserve more than a few the actual items that are part of the history of technology. They must reject offers from technical professionals and collectors of technology who want to donate historical objects for lack of storage space and a budget to buy them or exhibit them. This is the situation facing membership societies such as IEEE, ASME, and ACM. Meanwhile, the special collections staffs of many libraries have been reduced, some small museums have had to close their doors, historic buildings have to limit their hours, and other museums have raised the price of public admission to prohibitive levels. This suggests that perhaps it is time to discuss a different approach to object collections in which historical researchers and writers, membership organizations, documentary videographers, and institution personnel share expertise, objects, and spaces, and to preserve the material history of the last century in efficient yet creative ways. While digitizing materials has provided visual access for more of the public and for researchers, three dimensional technical objects and systems cannot be fairly examined and explained in two dimensions. Rather than simply rehash the question of affordability for institutions to add twentieth century objects to their older collections, I am hoping the participants will be interested in discussing the idea of consortium and cost-sharing methods for collection, preservation, and exhibition among institutions.

What's Worth Preserving? A Collection of Letters from the Chicago Design Museum

Tanner Woodford, Chicago Design Museum

Good design, the pursuit of question, fountain pens, old recipes, intellectual and cultural heritage, even memories—While anything can be preserved, a more specific question ought to be asked. What's WORTH preserving? In 2016, Tanner Woodford (founder and executive director of the Chicago Design Museum) sent handwritten letters to hundreds of people across walks of life, from incarcerated inmates to politicians, scientists, and even museum professionals. The letters end with the penultimate question. Though each response was independently thoughtful and authentic, the body of work is very broad. For example, Cody Hudson, a Chicago designer and restaurateur, sent a simple circle, cut by hand on a jigsaw and primed white, with the words "all the shapes and all the colors" written in permanent marker on the back. Bestselling author Jodi Picoult penned a letter in cyan ballpoint ink about her desire to preserve the voices of loved ones she has lost. David Spadafora, United States historian and President of the Newberry Library, wrote three pages about unfettered curiosity, and the need for institutions to preserve as much as possible, since we inevitably do not know what will be important in the future. Woodford scans all responses he receives, shares them digitally with members of the nascent design museum, and then adds the physical copy to the museum's collection. Some are self-referential, suggesting best practices for building a new collection. Others may be ephemera in an exhibition to foster dialog, or used to provide context for an exhibiting designer. The letters are small but mighty. They implicitly and directly address the relevance of physical collections in an era of digital communication. In this presentation, Woodford will introduce the new museum's mission and work, and read selected responses from this collection of letters.