The Azimuth Co-ordinator was a joystick device for controlling a quadraphonic sound system. By swiveling the stick, the sound output could be shifted from one speaker bank to another; with the joystick in the central position, the sound output would be equal in all speakers. This was an early surround sound technique which utilised a four-speaker system with a speaker in each corner of a room, or four banks of speakers in the case of a live performance.

The early Azimuth Co-ordinator device was developed by Bernard Speight for the British Rock band Pink Floyd in the late 1960s and used by them first in their Queen Elizabeth Hall concert 'Games in May', 12 May 1967; and also on their 1973 album The Dark Side of the Moon. It was used almost exclusively by Pink Floyd, in conjunction with a quadraphonic sound system, and was operated by keyboardist Rick Wright.

Quadraphonic sound never took off to any large extent, however, despite its availability to the home consumer. In 2003 Dark Side of the Moon was re-released, this time in 5.1 surround sound, the updated and more successful progression from quadraphonic sound. Consumer technology had, by this point, caught up with Pink Floyd's 1960s-70s sound experimentation.

The sound of the Azimuth Co-ordinator
Newsletter of the International Committee for the History of Technology - ICOHTEC

Editor: Francesco Gerali, The University of Oklahoma School of Library and Information Studies. Norman, OK, United States. Mail to fgerali@ou.edu

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I. ICOHTEC

I.1 ICOHTEC 47th Symposium, Eindhoven 2020 – NEW DEADLINE

A History of Technology for an Age of Crisis

The International Committee for the History of Technology’s 47th Symposium in Eindhoven, the Netherlands, 13 – 18 July 2020, Eindhoven University of Technology, TU/e

The new deadline for proposals is February 22nd, 2020

https://icohtec2020eindhoven.org/

Technology and crisis are linked in multiple and paradoxical ways: although technological developments have precipitated many crises, technology has just as often been proposed as a proper way out. Resistance against new technologies (such as the 19th century Luddite movement or the 20th century anti-nuclear movement), subversive uses of mainstream technological solutions, and some instances of user-innovation and appropriation can be studied as indications of crisis as well as strategies to cope with crisis. In general, members of industrialized societies seem to have a very strong belief in technology and innovation as key to manage and solve crises: in case of the long lasting crisis of the 19th century, labeled the “Social Question”, there was demand for new technologies solving social problems as well as those of industrial health and safety. Although the expression is linked to 19th century, the Social Question is on display until today – now combined with the Environmental Crisis.

Politics mirror the paradoxical relation of technology and crisis: although democratic and authoritarian regimes, and political parties of very different stripes, might disagree fundamentally about the causes and nature of crises and the issues at stake, they have often converged in favoring technological solutions to major societal challenges. Attempts to deal with the Environmental Crisis (which is largely technology-made in the sense that anthropogenic climate change, biodiversity loss, and resource depletion followed the expansion of the human-built world) seems to follow a similar path: technological fixes are discussed, ranging from renewable energy, AI-based efficiency, sensor technologies, electric cars, smart homes, and other ‘sustainable’, ‘responsible’ or ‘smart’ innovations. Such approaches often sidelined non-tech solutions such as zero-growth. It remains an open question whether technology will provide solutions.

This raises the question if and how historians of technology should engage with present-day debates on the ambivalent roles of technology in today’s global crisis—the so-called grand challenges to humanity, society, and the environment. The paradox of crisis and technology rises questions such as:

➢ In which way have crises influenced technological change, and conversely, how have technologies shaped crises?
➢ What’s the role of technology to predict, avoid, or manage crises?
➢ How can we study the geography of crisis, taking into account transnational and (post)colonial relationships and global North-South interactions?
➢ In which way did different societies and societal groups cope with technology-related crises?
➢ How has the historic pursuit of innovation by technology companies and designers contributed to the creation of technological crises?
➢ What role(s) did protests and resistance against technology play in avoiding or managing technology-related problems or crises?
➢ How have media representations shaped narratives of technological crises and/or technological redemption?
➢ Do crises “reveal” how deeply technology is embedded in society?
➢ What (and whose) histories do the imaginaries and historiographies of technological crises highlight and obscure?

We invite sending in paper- and session proposals on technology & crisis for a broad range of historical periods, geographies, and crisis domains—including political conflicts, social and civil rights, colonial practices, health epidemics and health care, economic depressions, environmental disasters, and so on, along with the crises of collective identity that are often related to both technological crises and technological solutions. Contributions which examine the correlations of crisis and technology are welcome, as are case studies of specific technologically-related crises, and presentations which explore the implications and interconnections of technological crisis in media representation, art, and legislation for example. In Eindhoven, ICOHTEC will organize the usual Summer School on the same subject before the Symposium. Detailed information on the program, instructors, and travel gran in aid will be released soon. Beside contributions to the main theme of the symposium, paper and session proposals on different topics of the history of technology are welcome.

Proposition Guidelines
The symposium welcomes scholarship on all periods of history and all areas of the globe, especially contributions from beyond Europe and the United States, and presentations on regions that have been less extensively covered by historians of technology. In keeping with a cherished tradition of the field, the meeting is open to scholars from all disciplines and backgrounds. The conference language is English. Although we invite to submit individual papers as well, priority will be given to proposals of whole sessions.

• **INDIVIDUAL PAPER PROPOSALS MUST INCLUDE:**
  (1) a 300-word (maximum) abstract and
  (2) a one-page (maximum) CV.

Abstracts should include the author’s name and email address, a short descriptive title, three to five key words, a concise statement of the thesis, a brief discussion of the sources, and a summary of the major conclusions. If you are submitting a paper proposal dealing with a particular subtheme in this CFP, please indicate this in your proposal. In preparing your paper, remember that presentations are not full-length articles. You will have no more than 20 minutes to speak, which is roughly equivalent to 8 double-spaced typed pages. For more suggestions about preparing your conference presentation, please consult the guidelines at the conference website http://www.icohtec.org/w-annual-meeting/proposal-guidelines/. Contributors are encouraged to submit full-length versions of their papers after the conference for consideration by ICOHTEC’s peer-reviewed journal ICON.

• **PANEL PROPOSALS MUST INCLUDE:**
  (1) an abstract of the panel (300 words maximum), listing the proposed papers and a session chairperson;
  (2) an abstract for each paper (300 words maximum);
  (3) a one-page CV (maximum) for each contributor and chairperson.
Panels should consist of three or four speakers. Several panels may be organized on one topic. We encourage creating panels which examine history of technology in different parts of the world, enabling international comparisons, and contributing to an emerging transnational historiography. Please note, the programme committee reserves the right to make adjustments to proposed panels, relocating papers to different themes and/or adding papers to panels, as required.

ICOHTEC webmaster designed two new tools to announce calls for panelists and to find interesting sessions; please visit: http://www.icohtec.org/forums/forum/find-your-panelists/ and https://docs.google.com/document/d/1ldKBmBmMzr5jCyuwVnBZ-zSOWqx7kgOergINxaugMwk/edit

• POSTER PROPOSALS MUST INCLUDE:
  (1) a 300-word (maximum) abstract; and
  (2) a one-page CV.

Abstracts should include the author’s name and email address, a short descriptive title, a concise statement of the thesis, a brief discussion of the sources, and a summary of the major conclusions.

The programme committee also encourages submission of ALTERNATIVE FORMATS for sessions: round tables, the presentation of an important book or film, etc. If you wish to submit a proposal for a session in an alternative format, please contact the Chair of the Program Committee, Stefan Poser, stefan.poser(at)kit.edu. Please consider joining ICOHTEC. Members of ICOHTEC pay reduced conference fees. Additional benefits of membership and subscription information can be found at http://www.icohtec.org/a-homepage-section/join-or-renew-icohtec/

Proposal submissions
The final deadline for all submissions is January 31th, 2020. Instructions on submissions can be found on our website: http://www.icohtec.org/. Please submit your session, individual paper, or poster, online: http://www.icohtec.org/w-annual-meeting/eindhoven-2020/ The submission form will guide you through the submission process. If questions arise, please consult the pdf document ‘Technical instructions’, which can be found on the opening page of the submission form and downloaded.

The Program Committee
Stefan Poser GE (Chair) stefan.poser@kit.edu
Francesco Gerali IT
Jan Hadlaw CA
Stefan Krebs LUX
Jacopo Pessina IT
Thomas Schütz GE
Kamna Tiwary IND
Erik van der Vleuten NL
Artemis Yagou GE/GR
Magdalena Zdrodowska PL
Giants and Dwarfs in Science, Technology and Medicine

The International Committee for the History of Technology will hold its 48th symposium as part of the 26th International Congress of the History of Science and Technology in Prague, Czech Republic, 25 – 31 July 2021 (ICHST) https://www.ichst2021.org/

The new deadline for proposals is March 1st, 2020

The general theme of the Congress is “Giants and Dwarfs in Science, Technology and Medicine” and ICOHTEC encourages proposals for sessions dealing with the history of technology within this broad framework. The programme committee offers the following sub-themes for the consideration of session organizers and contributors, but welcomes proposals on a wide spectrum of topics related to the general Congress theme in the context of history of technology.

1. Gender and Technological Systems
2. Class, Poverty, and Technology
3. Technology Usage by Minorities and Small States in a Global World
4. Migration and Transportation
5. Maintaining Technological Systems, Large and Small
6. Politics, Protest, and Big Technology
7. Technological Teams
8. Global Military Technologies and Societies
9. Art and Play – Technologies and Protest
10. Environmental Change and Energy Systems
11. Assistive Technologies and (Dis)ability Studies
12. Sustainability and Economies of Scale
13. Traditional Engineering and new IT Technologies
14. Workers in Post-industrial Society
15. Medical Technologies

We urge contributors to organize a full session of three papers, or multiple related sessions of three papers each, with a named chair for each session. Session organizers should reflect diversity and, consistent with the diversity of this international conference ICHST has asked that there be two organizers from different countries for each session. Individual paper submissions may be considered if deemed appropriate, but full sessions are strongly preferred and will be given priority. The programme committee encourages the organizers of sessions to announce their plans to compile sessions and communicate with potential collaborators through H-NET and other networks such as social media. ICOHTEC offers to publish an organizer's call for an ICOHTEC session on our conference page (send them directly to s.lotysz@gmail.com). Calls concerning any topic of HoT are welcome. It is also possible to propose sessions unrelated to the general Congress theme. We especially encourage graduate students and early career researchers to participate in the symposium and submit their proposals. Limited travel grants will be available; for further information go to: http://www.icohtec.org.

SESSION proposals must include: (1) an abstract of the session (350 words maximum), listing the proposed papers (see individual paper proposal guidelines below), the two organizers from
different countries and the chairperson; (2) abstracts for each paper (250 words maximum); (3) a one-page CV (maximum) for each contributor and chairperson. Sessions should consist of at least one set of presentations (90 minutes time slot) and they may include three or four papers in each, which might extend to a series of successive sections over more than one day. Each individual section should have a chairperson. Proposing a commentator – instead of the fourth presenter – is also possible. The programme committee reserves the right to relocate papers to different themes and add papers to sessions. We also encourage proposing roundtables and other “new” as well as innovative, experimental session formats. Whatever the session format will be, organizers and chairs are expected to reserve enough time for general discussion between the presenters and audience. Individual paper abstracts should include the author’s name and email address, a short informative title of the paper, a concise statement of the thesis, a brief discussion of the sources, and a summary of expected conclusions. In preparing your paper, remember that presentations are not full-length articles. You will have no more than 15-20 minutes speaking time, which is roughly equivalent to 6-8 double-spaced typed pages. Contributors are encouraged to submit full-length versions of their papers after the congress for consideration by ICOHTEC’s journal ICON. If you are submitting an independent paper proposal dealing with a particular sub-theme, please indicate this in your proposal.

PROPOSAL SUBMISSIONS
Submit all session and individual paper proposals to: www.prague2021.icohtec.org.
The final deadline for all submissions is February 10th, 2020. Please check updated instructions on submissions at our website: http://www.icohtec.org. Please pay close attention to the instructions, particularly the word length of submitted documents.

Note that this date is only 10 days later than the submission date for the 2020 ICOHTEC Eindhoven proposals. Because of the complex nature of organizing so large a meeting, this call for papers has an unusually early deadline.

ICOHTEC webmaster designed two new tools to announce calls for panelists and to find interesting sessions; please visit: http://www.icohtec.org/forums/forum/find-your-panelists/ and https://docs.google.com/document/d/1ldKBmBmMzr5jCyuwVnBZ-zSOWq7kqOergINxauqMwk/edit

PROGRAMME COMMITTEE:
Susan Schmidt Horning, Chair (USA)
Florian Bettel (Austria)
Roberto Cantoni (Spain)
Jiri Janac (Czech Republic)
Fanxiang Min (China)
Peeter Mürsepp (Estonia)
Jan Musekamp (USA)
Jaroslav Svelach (Czech Republic)
Ewelina Twardoch (Poland)
Ruth Schwartz Cowan (USA)
### Key Facts

**Theme**

*A History of Technology for an Age of Crisis*

**Target participants**

PhD students and recent post-doctoral researchers

Early career researcher and professionals with a subject-relevant academic background

**Dates**

- Thu 09 July to Sun 12 July, 2020 (*Part 1 - Summer school*)
- Mon 13 to Sun 19 July, 2020 (*Part 2 - Summer school & Symposium*)

**Venue**

Eindhoven University of Technology, Eindhoven, the Netherlands

**Fees**

1. Fee of the Summer school only (ICOHTEC Member): 100 € (After 31 May: 150 €)
2. Fee of the Summer school only (ICOHTEC Non Member): 115 € (After 31 May: 165 €)
3. Fee of Summer school & Symposium (ICOHTEC Member): 150 € (After 31 May: 200 €)
4. Fee of Summer school & Symposium (ICOHTEC Non Member): 165 € (After 31 May: 215 €)

These ICOHTEC’s registration fees include participation services, lunches, and accommodation. A limited number of ICOHTEC travel grants will be available for Summer School participants and they cover part of travel costs from regions outside The Netherlands.

**Admission**

Applications will be accepted by email until 2\textsuperscript{nd} March, 2020. The results of selection will be announced to the applicants by 31\textsuperscript{st} March 2020.

**Objectives**

The Fourth ICOHTEC Summer School will combine the 47th ICOHTEC Symposium with a three-day intensive seminar course geared to PhD students and young post-doctoral scholars. The Summer School brings together conventional seminars and the participation in the ICOHTEC Symposium. The topic of the ICOHTEC Summer School is "A History of Technology for an Age of Crisis" and it aims, in conjunction with the main thematic objectives of the ICOHTEC Symposium, to approach its theme open-mindedly and multidisciplinarily. The School enhances students’ skills to comprehend and study versatile relationships between science, society and technology. The Summer School aims to deal with responding to the following questions:

- In which ways have crises influenced technological change?
- What’s the role of technology to predict, avoid or manage crisis?
• Which technologies caused (environmental, societal etc.) crises and in which way did different societal groups try to cope with these crises?
• What’s the role of protests and resistance against technology to cope with technology-related problems, to handle crises?
• Do crises “reveal” how deep technology is embedded in society?
• What (and whose) histories do technological crisis imaginaries and historiographies highlight and obscure?

Lecturers
The programme of the Summer School is composed of lectures, seminars dealing with students’ papers, plenary discussions, and social events. The following three lecturers, who are recognised researchers in their fields, will deliver introductions to the key themes of the school (See their bios and abstracts via hyperlinks below).

Aristotle Tympas
Professor at National and Kapodistrian University of Athens, specialist in the study of technology from the humanities and the social sciences

Talk: Social/Environmental Crises and industrial Revolutions, from the 1st to the 4th: Historiographical Considerations on Artificial Intelligence, Robotics and Big Data

The presentation will introduce to a set of historiographical considerations that connect the rhetoric surrounding the key technologies of the so-called ‘4th Industrial Revolution’ to the dramatic worsening of the unprecedented environmental crisis, and, also, to the acute social crisis caused by the transition from welfare capitalism to neoliberal capitalism. These considerations will further connect the history of artificial intelligence, robotics and big data to a deeper historical context and to a broader periodization scheme, just as they will historiographically link it to crises, social and environmental.

• http://scholar.uoa.gr/tympas/home

Ruth Oldenziel
Professor of the History of Technology at Eindhoven University of Technology (TU/e).

Talk title: Crisis: thinking about the issue of continuities or discontinuities
Historian’s core business is to think about diachronic processes to understand the different time dimensions. Crises are usually understood by contemporaries as violent ruptures that upset set patterns, but are they really. Using historian’s toolkit of path dependencies, pockets of persistence, tipping points, ruptures, and
framing, the lecture will explore the phenomenon of crisis as a special kind of unit of analysis to understand historical process and contingency.

(https://www.tue.nl/en/research/researchers/ruth-oldenziel/)

Siegfried Zielinski
Michel-Foucault-Professor for Techno-Aesthetics and Media Archaeology at EGS Saas Fee (CH) and Professor em. for Archaeology & Variantology of the Arts & Media at Berlin University of the Arts

Talk: PRO-SPECTIVE ARCHAEOLOGIES. Travelling through DEEP TIME of Media Technologies - into Possible Futures.

The seemingly paradoxical abstract mixtum compositum that is prospective archaeology consists of a practice that operates in accordance with two opposing arrows of time. One of these arrows is oriented vertically into the deep time of techno-cultures that still remains to be explored and that, for me, is forever remade by virtue of interdependencies in the relationships among the arts, sciences and technologies. The other arrow points from the now into an enduringly and unremittingly opaque future. Where the utopian potential of media-archaeological activity and its associated artistic practices resides is in the possibility of bringing these two arrows of time into relation with one another, such that the passengers inside this particular time machine aren’t torn apart in the process. – At least two case studies will be presented, which resonate strongly the common subject of the 2020 seminar. First the >thinking machines< developed by the Catalan philosopher and theologian Ramon Llull in the 13th century for communicating between Muslims, Christians and Jews. Second a universal music machine (automaton) from the 9th cent Baghdad, today’s Iraq.

(http://genealogy-of-media-thinking.net/?lang=en)

Description
The ICOHTEC Summer School consists of two parts:

Part 1. Interactive discussion seminars
Objectives of the School include discussions of daily lectures, students’ research papers distributed in advance, and appropriate methodological and theoretical approaches to the research themes under examination. Expert tutors will moderate these discussions in small groups.

Applicants are strongly encouraged to propose a presentation format that deviates from the standard 20 minutes frontal talk. This can include active engagement of the other summer school participants and also an outside-classroom activity, for example an excursion to a location linked to your topic. A joint feedback colloquium will end the School.
Part 2. Active attendance in the ICOHTEC Symposium

Students of the Summer School are expected to participate in the ICOHTEC Symposium and its scientific sessions according to their personal tailor-made schedules. Please visit the website: [https://icohtec2020eindhoven.org/](https://icohtec2020eindhoven.org/). All students who complete the programme will receive an attendance certificate.

For whom is the programme?
- Ph.D. students with a subject-appropriate academic background.
- Post-doctoral researchers with a subject-appropriate academic background

Participants are expected to
- be able to speak, read and write in English.
- undertake preparatory reading in advance of the programme.
- attend all lectures and seminar sessions.
- be actively engaged with the topics of the sessions.
- attend the ICOHTEC 2020 Symposium and present a paper there as a single or co-author.
- submit a final assignment of 2,000-2,500 words on one of the topics discussed in the Summer School within six weeks after the summer school.

Application for this course:
- Applicants must send the following data by email file attachments to Maria Elvira Callapez: mariaelviracallapez@gmail.com.

1) A brief one-page cv, which must include the main personal data, academic training and career, selected publications and e-mail for further contact.

2) A short statement of purpose (350-400 words) detailing your academic reasons for wishing to attend the summer school. This should include your expectations what you hope to get out of the summer school and its education, and what you are likely to contribute to the intellectual life of the summer school. This may include details of history, political or social science courses you have previously taken, or the relevance of the summer school to your present course of study or professional development. If you are preparing a thesis or research paper at the moment, please write a brief description of it. Include also the title of your possible paper submission to the ICOHTEC Symposium, which follows the Summer School (Further information: [http://www.icohtec.org/w-annual-meeting/eindhoven-2020/](http://www.icohtec.org/w-annual-meeting/eindhoven-2020/))

3) A letter of recommendation by your teacher or supervisor, referring to your application to the ICOHTEC Summer School.

The subject line of the email should be "Summer School Application" and in the titles of your file attachments mark your surname first and then the title of the file (e.g. Smith.CV). Please note that incomplete applications will not be considered. After you have submitted your application, you will receive a response by 31 March 2020.
Members of the Summer School Committee

- Maria Elvira Callapez (chair), Portugal
- Karena Kalmbach, The Netherlands
- Sofia Alexia Papazafeiropoulou, Greece
- Magdalena Zdrodowska, Poland

I.4 ICOHTEC Travel Grants 2020

The 47th annual symposium will be held in the Eindhoven University of Technology, The Netherlands, on 13-19 July 2020, with the general theme A History of Technology for an Age of Crisis. We offer a limited number of grants to help defray some of the expenses of attending the symposium. The Grants will be made available largely thanks to a generous support from the Juanelo Turriano Foundation and the Division of History of Science and Technology (DHST).

Who is eligible?
In 2020, the ICOHTEC Travel Grants will be awarded in two categories:

Up to 350 Euro each – eligible for applying are graduates, post-graduates and young scholars whose papers have been accepted for the scientific programme of our 2020 Symposium. Special preference will be given to participants from low-income countries, who are not able to receive sufficient financial support elsewhere. These travel grants are not intended to cover the full costs of attending the Symposium and may be used to bus/train/ferry/flight tickets, lodging and/or registration fee.

Up to 200 Euro each – eligible for applying are the students and early career researchers participating in the ICOHTEC Summer School in Eindhoven. Students and researchers, whose papers have also been accepted for the scientific programme of our 2020 Symposium, following immediately the Summer School, are eligible for the Travel Grant of up to 350 Euro each.

How do I apply?
The Travel Grant Application Form (see below or consult www.icohtec.org) must be filled in, and sent by 5 April 2020 as an e-mail attachment to Yoel Bergman, the Chair of the Travel Grant Committee at yoelb062@gmail.com. In addition to the information provided in the application form, please attach a short CV or bio, as well as an appropriate document proving your status (a scan of your student’s ID or supervisor’s/professor’s letter if applicable). The reimbursement will be made after the accepted paper is presented in person by the Grantee at the Symposium. Please, note that all money transfers can be made only after the symposium. In addition, make sure you will save your original tickets and invoices to hand them over to the Treasurer at the meeting.

What is the time schedule?
The completed applications, along with applicable attachments, should be submitted by e-mail by Monday 5 April. The grants will be announced by mid-May 2020.
APPLICATION FORM

First and last name:  
Postal address:  
E-mail address:  
Your status  
(mark right options):  
graduated student/post-doc/independent young scholar/other (explain)  
member of ICOHTEC: yes/no  
male/female  
Institutional affiliation:  

THE ESTIMATED EXPENSES

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NOTE: If you are unable to accept international bank transfer, cash payment can be arranged for you at the symposium. Please, ask the Chair of the Travel Grant for details.

PROFESSIONAL ACTIVITIES AT SYMPOSIUM (other than presenting paper or poster)

- **Student accepted for the Summer School**  
  (if yes, type below the title of your presentations)

- **Organising a session or roundtable**  
  (if yes, please give the title below)

- **Chairing a session**  
  (if yes, please give the title of the session below)

- **Acting as a commentator or discussant**  
  (if yes, please give the title of the session below)
II. EXHIBITS: WOMEN IN THE SPACE AGE & CHANGE OF GENERATION IN VOLKSWAGEN

*Imaging Women in the Space Age*

**New Art Exhibition on View at the New York Hall of Science**

**July 13, 2019 – March 29, 2020**

Exhibit Curator Julie Wosk, Professor Emerita, State University of New York, Maritime College, Queens, NY. jwosk@sunymaritime.edu

https://nysci.org/imaging-women-in-the-space-age/

Dr. Julie Wosk, Professor Emerita at SUNY Maritime College in Throggs Neck, NY reports that her exhibit “Imaging Women in the Space Age” at the New York Hall of Science in Queens, NY has been extended until March 29, 2020. After that, it will be available to travel. She has also written an essay on this topic which will appear in an upcoming book on the cultural and political impact of the Apollo 11 lunar landing. For further information about the exhibit contact jwosk@sunymaritime.edu. July 2019 marks the 50th anniversary of the Apollo 11 lunar landing, and to help celebrate, the New York Hall of Science (NYSCI) is presenting a new exhibition Imaging Women in the Space Age, curated by Dr. Julie Wosk, Professor Emerita at SUNY Maritime College and author of *Women and the Machine*. The exhibit runs from July 13 – November 3, 2019. The exhibition showcases the achievements of America’s pioneering female astronauts and highlights the fascination with space women in movies, television, advertising, fashion design and today’s toys. From the earliest moon goddesses to today’s galactic fashions, visions of females in space have sparked the creative imagination. On display in the museum’s gallery are vintage and current images of female space travelers in television shows like *Lost in Space* and *Star Trek*, photographs of space-inspired fashions including Pucci’s designs for Braniff Airlines flight attendants and Chanel’s 2017 futuristic dresses, and screenshots from films like *Barbarella*, which starred Jane Fonda and *Gravity*, which starred Sandra Bullock. The exhibition reminds us of the groundbreaking achievements of pioneering astronauts with photographs of Sally Ride, America’s first woman in space, Mae Jemison, America’s first African-American female astronaut, and Ellen Ochoa, America’s first Hispanic woman to go into space. Also on view are photographs of astronaut Dr. Ellen K. Baker, who grew up in New York City and is the daughter of former Queens Borough President Claire Shulman. The exhibition also reflects a world where important changes are underway as more and more women are participating in NASA’s space program as astronauts and as astronautical engineers. It reveals innovative new developments in space suits specifically designed for women. Imaging Women in the Space Age is part of the museum’s Space Out Summer, a season filled with flight and space-themed exhibits, workshops, demonstrations, installations and a new film, all to celebrate the 50th anniversary of the Apollo 11 mission. **Further Contact:** Mary Record, New York Hall of Science, mrecord@nysci.org, 718-595-9123
**Generation changes, Volkswagen AutoMuseum, Wolfsburg, Germany**

With the large special show *Change of Generation. The quantum leap to the new water-cooled models*", the Volkswagen AutoMuseum will be presenting the exciting development history of Volkswagen's new front-wheel drive engines and models for the first time. The exhibits - prototypes, production models and power units - show how solutions were found, rejected or implemented, partly in competition and partly together, between the group subsidiaries Audi/NSU, VW and Porsche. The show can be visited from 29.08.2019 to 1 March 2020.

In the mid-1960s, sales figures for the Beetle were still booming. However, Volkswagen, also inspired by its 'daughter Audi, was striving for a successor to its bestseller. From 1973, a completely new model family was launched with the Scirocco, Passat, Golf and Polo. They all featured innovations in engine technology - now front-wheel drive and water cooling. However, the road to this success was sometimes rocky, partly due to the internal competition between the group brands Audi, Porsche and Volkswagen. For the first generation of the new models, Audi prevailed with the EA 827 and EA 801 engines, which are still being developed today. With meticulousness and countless interviews with contemporary witnesses and technicians, engine researcher Michael Willmann and the Volkswagen AutoMuseum Friendship Association have succeeded in uncovering previously unknown facts and making the relevant exhibits suitable for exhibition.

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Stiftung AutoMuseum Volkswagen
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38446 Wolfsburg
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Fax 0 53 61 / 5 20 10
e-mail: extern.susanne.wiersch@volkswagen.de

**III. Book Presentation**


Until the early 1970s, Volkswagen produced models with air-cooled rear-mounted engines. But as early as the mid-1960s, a development process towards modern, innovative engines and vehicles began, the technical content of which paved the way into the future. The book traces the long and sometimes bumpy path of Volkswagen's engine history towards the new, water-cooled front-
wheel drive units. It shows and describes both the engines that eventually reached production maturity, which were developed in collaboration with AUDI, and those that had to remain in the prototype stage. The research was based on recent interviews with the engineers and technicians of the time.

IV. CONFERENCES, SEMINARS, AND WORKSHOPS ANNOUNCEMENTS

Roundtable on “Plastics and their controversies” within the 47th ICOHTEC Symposium
Maria Elvira Callapez (History of Science and Technology, CIUHCT-FCUL, Lisbona) invites you to participate at the potential roundtable on “Plastics and their controversies” within the 47th ICOHTEC Symposium that will take place in Eindhoven University of Technology, Eindhoven, the Netherlands Eindhoven, from 13 to 18 July 2020.

Plastics and their controversies
Plastics are everywhere! we take them for granted, they have helped to improve living standards, hygiene and nutrition around the world. Plastics serve positive functions in sectors as important as medicine (human tissues, organ transplants), transport (cars and ultralight aircraft), construction (insulation), food (smart packaging that monitors food content for signs of deterioration), etc. Plastics will keep playing an increasingly significant role in our lives in the future. Despite the enormous potential of plastics, there are still concerns about its impact on the environment. Plastics are not enemies, on the contrary, they will be more and more the materials for all uses. This roundtable intends to discuss why, nowadays, the plastics have been demonized and to what extension the Plasticophobia impacts the consumption, the economy and, the artistic, architectural, ecological and social life”.

If you are interested in debating this topic, you’re very welcome. Please contact Maria Elvira Callapez at mariaelviracallapez@gmail.com by 21st February 2020.
The Futures of STS in Engineering and Polytechnic Universities

The Center for STS at Missouri S&T (Rolla, Missouri) is hosting a symposium on April 17, 2020 entitled "The Futures of STS in Engineering and Polytechnic Universities." We have invited a number of STS scholars who will ask and answer questions such as: What does the future of STS look like in engineering and polytechnic universities? In such STEM-focused environments, where STS scholars often operate independently and without a central STS department or program, how can STS researchers maximize their impact on the education of undergraduate and graduate students, as well as on the original research conducted by (and often financially supported by) colleagues in engineering departments? How can STS researchers become indispensable to engineering and scientific research endeavors without being perceived as simply support personnel? Assembling convergent research teams to tackle important social and scientific challenges is an acknowledged best practice, so how should STS researchers embrace convergent research endeavors in order to add value and lead inquiries into areas of new and developing knowledge? We hope you can join us! Registration is open and free, but space is limited. See https://csts.mst.edu/ for more information, to see the day’s schedule and to register. If you have questions, please contact us at stcsts@mst.edu

Manchester CHSTM Research Seminars 2020

This is to present the speakers for the upcoming seminar series at the Centre for the History of Science, Technology, and Medicine (CHSTM), University of Manchester. Please find the programme for the 2019–20 academic year below. CHSTM seminars will be held fortnightly on Tuesdays at 4pm in 2.57 Simon Building, with tea and biscuits from 3.30 pm – unless otherwise indicated. All are welcome! Please pass this on to interested colleagues/students. If you have any questions, please direct them to myself, Tom Quick (thomas.quick@manchester.ac.uk) or Pratik Chakrabarti (Pratik.chakrabarti@manchester.ac.uk).

Calendar of the Seminars


10 March, Laura Tisdall (Queen Mary’s, University of London). ‘Just a stage I’m going through’: Lesbian and gay adolescents, developmental psychology, and psychoanalysis in Britain, c. 1950–1990

24 March, Caitjan Gainty (King’s College, London). Healthy skepticism

21 April, Sarah Marks (Birkbeck, University of London). ‘Brainwashing for benevolent purposes’? Historical reflections on behavioural therapy from the Cold War to CBT

5 May, Cornelius Borck (University of Lübeck). Changing approaches to visualization in brain research: A case study based on the Max-Planck Society
V. Call for Manuscripts

Essays in History 2020 (Articles, Book Reviews, and Historiographical Essays)

Essays in History (EiH), the annual peer-reviewed journal of the University of Virginia’s Corcoran Department of History, is currently soliciting articles, book reviews, and historiographical essays for its fifty-third issue, to appear in the fall of 2020. EiH is a journal for emerging scholars that has been staffed and published by graduate students at the Corcoran Department of History since 1954. Each year EiH publishes peer-reviewed articles and historiographical essays in all fields of history, as well as reviews of the most recent scholarship. In recent years, EiH has published the work of scholars from leading universities in the United States and around the world. The deadline for submissions is March 1, 2020. Article submissions should include a copy of the author’s curriculum vitae and an abstract of roughly one hundred words in length. Authors interested in submitting book reviews and historiographical essays should provide a current curriculum vitae and contact the journal prior to their submission in order to confirm the monograph to be reviewed. For additional submission guidelines see http://www.essaysinhistory.com/submissions/. If you have questions after reviewing the submission guidelines, please email us at essays_in_history@virginia.edu

Vision Loss through Many Lenses: Insights from Myth, Media, Music, Medicine & More

While vision loss directly concerns medical and mental health professions, this theme also attracts the attention of artists and scholars from many disciplines. This collection falls under the rubric of "medical humanities" and includes essays on vision loss or blindness in visual arts, literature, music, comics, film, myth, history, religion, philosophy, sociology and more—but it does not include medical or mental health issues per se. Some topics are already accounted for but open topics include memoirs by persons who lost their vision; masculinity in blind samurai warrior series; blindness as a metaphor for colorblindness in Civil Rights era films; music by and about blind persons; why groups such as Blind Boys of Alabama proliferated in Southern U.S.A.; disability debates invoked by Oliver Sack’s Island of the Colorblind; dance by or about persons w/ visual loss; portrayals of vision-impaired females in film; poetry by or about vision-impaired persons; Catholic/Protestant/Hindu/Muslim/Jewish attitudes toward vision loss; healing shrines and patron saints and miracle cures for vision loss; East Asian attitudes toward vision loss; philosophical debates about blindness and cognition; etc. We are open to other innovation ideas. If you are uncertain if your topic is still available, please send a short 1-2 sentence query plus a short bio. Otherwise, please send a short precis of 200-400 words along with a short bio &/or resume. Abstracts due 12-15-19. Papers of 3,000-4,000 words (w/ 5-15 citations) in University Chicago style due June 1, 2020 (first draft). Final drafts due August 30, 2020. Remuneration includes 1 book/essay. This essay collection is already in contract with a respected academic publisher. Contact Info: drsharonpackermd@gmail.com, add VISION LOSS through MANY LENSES in subject.
VI. CALLS FOR PAPERS

The Petroleum History Institute invites you to attend its 2020 Annual Symposium and Field Trip. This year we will meet in beautiful Santa Barbara, California, on April 2-4.

ABSTRACTS BEING ACCEPTED: Please send abstracts to: Dr. William Brice - wbrice@pitt.edu or call Marilyn Black – 814-677-3152 ext. 105; mblack@oilregion.org

Click here for the meeting invitation.
Click here to get the registration form.
NOTE: Please Mail Completed Form and Check to:
Petroleum History Institute
P. O. Box 165
Oil City, PA 16301-0165

REGISTRATION AND EVENING RECEPTION Thursday, April 2, 2020
PRESENTATIONS – ORAL AND POSTER – Friday, April 3, 2020
FIELD TRIP – Saturday, April 4, 2020
HEADQUARTERS HOTEL – Best Western/Pepper Tree Inn, Santa Barbara, California
https://groups.guestreservations.com/eh/3754c-66h or 800-338-0030 For Group Rate Mention “Petroleum History Institute”

Proceedings to be published in the 2020 volume of Oil-Industry History
We look forward to seeing you there.
Stephen Testa, Symposium Chair
Matt Silverman, PHI President
https://www.frontiersin.org/research-topics/11981/public-research-and-private-knowledge--science-in-times-of-diverse-research-funding#overview

Description
The production and distribution of knowledge is a key process in scientific and scholarly inquiry. However, this process is not and has never been limited to universities and public research institutes alone, but extends to agents as diverse as the Research & Development Departments of companies, citizen scientists, and private non-profit research institutes. In recent years, these agents have shown an increased interest in basic - as opposed to applied - science, for example in fields of rising social significance such as AI or biomedical technology. These specific research interests in turn direct attention to the sources of funding, and, as a consequence, to the direction of inquiry and the accessibility of results. The main problem that arises from this development can be expressed in two questions: First, does the influence of private funding change the selection of research topics in an epistemically or otherwise (un-) desirable direction? And second, does it lead to a privatization of knowledge, and if so, what are the consequences of this privatization?

Some key questions in this area of investigation are:
• Where do new sources of research funding come from, and how important a role do they play? Which agents foster the development, which methods do they use, and what are their primary motivations?
• What are the epistemic consequences, and who is affected by them? What is the impact of business interests on epistemic norms and ideals, and are there any (additional) sources of bias to be expected?
• Have there been any (changes of) institutional structures in the last decades that have stimulated or hindered these tendencies? Which historical idea of science is at stake? Which factors affected the practices of organizing the production and distribution of scientific knowledge during the second half of the 20th century?
• Is academic freedom threatened by these developments, and if so, to what extent? How could it be maintained? What are the epistemic effects of endowment chairs and industry-sponsored PhD projects?

Contributions may approach these and related questions from various disciplinary perspectives such as philosophy of science, history of science, science and technology studies, social epistemology, and formal epistemology.

Submission:
Contributions must be original and may not be under review elsewhere. Extended abstracts should be no longer than 1000 words and describe the topic, structure, and argument of the paper. We will invite the submission of full manuscripts, based on the quality of the extended abstract. All manuscripts will be subject to single-blind peer-review.

Deadlines
Abstracts: 29 March 2020
Manuscripts: 31 July 2020

Keywords:
public research, private research, research funding, private knowledge, research grants, business interests, scientific knowledge, academic freedom, epistemology
Important Note:
All contributions to this Research Topic must be within the scope of the section and journal to which they are submitted, as defined in their mission statements. Frontiers reserves the right to guide an out-of-scope manuscript to a more suitable section or journal at any stage of peer review.

VII. JOBS, POSTDOCTORAL POSITIONS, RESEARCH FELLOWSHIPS, AND GRADUATE SCHOOL OPPORTUNITIES

IEEE History Center Elizabeth & Emerson Pugh Summer History Internship, 2020
Scholars early in their career studying the history of electrical technology and computing are invited to contact the Center to be considered for this supported stay at the Center’s offices on the Stevens Institute of Technology campus in Hoboken, New Jersey, USA. The IEEE History Center, a center for the public history of technology, is cosponsored by the Institute of Electrical and Electronics Engineers, Inc. (IEEE)—the world’s largest professional technical society—and Stevens Institute of Technology.
This program seeks to provide research experience for graduate students and other young scholars in the history of any IEEE field of interest (electrical and computer sciences and engineering and related fields), while enlisting the help of promising young scholars for the Center’s projects. The recipient generally works full-time for two months at the History Center on a Center project that is connected to his or her own area of interest, often involving taking advantage of the resources of the IEEE History Center and other New York area institutions. This time is usually during the summer, but other arrangements will be considered. The stipend paid to the recipient is US$5,000. This program is supported by the generosity of Elizabeth and Emerson Pugh through a gift to the IEEE Life Member Fund of the IEEE Foundation.
There is no formal application form. To apply, please email curriculum vitae showing your studies in electrical history, a three- to five-page page (single or double spaced) writing sample, along with a cover letter describing the sort of project you would be interested in doing, to Dr. Michael Geselowitz, Senior Director, IEEE History Center, m.geselowitz@ieee.org. The deadline for contacting the IEEE History Center is 1 March 2020. More details can be found at https://www.ieee.org/about/history_center/internship.html.

Scholar in Residence Program of the Iron Library 2020
Twice a year the Iron Library offers a scholar the possibility of intensive study of its holdings as its Scholar in Residence (SiR). The program is addressed to both established researchers and younger scholars or advanced students from Switzerland and abroad.
Aim of the Program
In keeping with the Iron Library’s specialization, preference will be given to applications from scholars with research projects on the history of metallurgy and mining and the history of technology and materials science, which are the focal points of the Iron Library’s collection. Topics from the history of chemistry, the history of science or industrial history and culture will also be given consideration. Innovative research projects that draw on the Library’s historical holdings in depth are particularly welcome. Research on the history of the Georg Fischer Corporation is especially welcome because projects that are based wholly or in part on the Corporate Archives of Georg Fischer Ltd will also be supported by the SiR Program.
What the Iron Library offers
The Iron Library, located in the former Clarissen convent Paradies, is an attractive place for focused research and creative writing. The research period may last from two to three weeks, and the precise dates and modalities will be arranged individually with the successful applicants. The Iron Library will assume the costs of a hotel for the SiR near the Library during the research period, will pay an allowance for the cost of meals during this time and will make a one-time contribution to the costs of travel to and from the Iron Library. The employees of the Iron Library will assist the SiR in his/her research work and in obtaining the relevant literature. The SiR Program is expressly not a full scholarship; any further claims on the Iron Library are excluded.

What we expect from the Scholar in Residence
It is expected that the SiR will work intensively with the Library holdings during the period of research and will take up residence near the Library. The research period may come at the beginning of a re-search project or may serve to complete an existing project. The results of the research period must be incorporated into a publication (print or online) and/or a degree (master's, Ph.D. or "Habilitation"), in which the use of the Iron Library is mentioned expressly. When the publication has been completed, the SiR will send the Iron Library two copies without being requested. The SiR undertakes, in addition, to write a short report on the research period in the Iron Library and gives his/her consent for this report to be published on the Iron Library's website, in its Annual Report and, if appropriate, elsewhere (e.g. social media). The same shall apply to the abstract of the research project (see below).

Applications
Applicants are requested to submit the following documents:
❖ an abstract describing the research project (maximum 150 words);
❖ a detailed description of the project that makes it clear which holdings in the Iron Library are to be consulted (maximum 1000 words).
❖ a curriculum vitae (resume);
The application documents may be written in English or German and may be submitted by mail or by e-mail. The Management of the Iron Library will decide on the selection of the Scholar in Residence.

Application deadlines
Applications may be submitted at any time.

Please address any questions and your application to:
Franziska Eggimann, Head Iron Library and Corporate Archivist Georg Fischer Ltd Kloster Gut Paradies, 8252 Schlatt, Switzerland, franziska.eggimann@georgfischer.com

Studying in Switzerland
Studying in Switzerland is a platform that aims to provide all relevant information about conducting your studies in Switzerland. We have the most comprehensive information about Swiss universities and scholarships, and we keep up to date about living costs in Switzerland. Find complete information and details on Studying in Switzerland educational offer at https://studyinginswitzerland.com/.
Clara Huber, Career Counselor, clara.huber@studyinginswitzerland.com
The Center for Philosophy of Science at the University of Pittsburgh invites applications for a new month-long Summer Archival Fellowship supporting a visit in the Center and research at the Archives of Scientific Philosophy. The Summer Archival Fellowship is available for June or July 2020. The Summer Archival Fellow will be given an office at the Center and will receive a $1,500 stipend.

Please send by March 15, 2020 the following materials to Carolyn Oblak:
(1) A cover letter that indicates a Summer Archival Fellowship is sought and describes: the month of proposed residence in the Center; note previous fellowships at the Center.
(2) A description of the research to be undertaken at the Archives of Scientific Philosophy during residence (1500 words).
(3) A curriculum vitae.

We particularly welcome submissions from members of underrepresented groups in philosophy of science.

SUBMIT MATERIALS BY MARCH 15 to: cj013@pitt.edu
SEE MORE INFORMATION:
https://www.centerphilsci.pitt.edu/programs/summer-archival-fellowship/
https://pitt.libguides.com/asp

Edouard Machery, Director
Center for Philosophy of Science
University of Pittsburgh
https://www.centerphilsci.pitt.edu
VIII. Join ICOHTEC

Please share this form with a colleague who is not yet a member or ask your library to subscribe

Form for annual membership renewals / registration of new members

Annual membership includes subscription to ICOHTEC's refereed annual journal ICON, access to all back issues of ICON in electronic form via the ICOHTEC website, a monthly Newsletter, and special registration rates at the annual ICOHTEC symposium.

I wish to renew my membership / to become a new member in ICOHTEC. (Tick below the appropriate description/rate):

☐ An individual. Rate: (40 $ or 30 € or equivalent) per year
☐ A student. Rate: (40 $ or 30 € or equivalent for two years)
☐ An institution. Rate: (100 $ or 75 € or equivalent) per year
☐ A library. Rate: (Europe: 36 €, Oversees 39 € or 52 $) per year

Tick the years of membership to be paid: □ 2017 □ 2018 □ 2019 □ 2020

I submit the total amount: ______ euro (or USD)

Your first name and surname: ______

Email: _______________________

Postal address: ___________________

Country: ___________________

Tick the method of your payment:

☐ Through international money transfer: Make international money transfer to:

“ICOHTEC“ at Commerzbank Bochum (Husemannplatz 3-4, D-44787 Bochum, Germany):

IBAN: DE44 4304 0036 0390 2590 00; BIC: COBADEFFXXX (members in Germany take Commerzbank Bochum BLZ 43040036, Nr. 390259000).

☐ Through a cheque. Send the check with the appropriate sum made out to “ICOHTEC“ and send to: Dr. Lars Bluma, Otmarstrasse 5, D-45131 Essen, Germany.

After filling the form, please scan and send by email to Timo Myllyntaus, ICOHTEC Treasurer at timmyl@utu.fi or, send a hardcopy by regular mail to Timo Myllyntaus, Turku School of Economics, Rehtorinpellonkatu 3 Room 313, 20 500 Turku, Finland. Your filled form will facilitate sending ICONs and allocating access privileges.