



Knowledge at work

21–28 July 2013

Summary Programme

See full programme at ichstm2013.com/programme

Blogs, audio and live streams at ichstm2013.com/blog



[@ichstm2013](https://twitter.com/ichstm2013) #ichstm



ICHSTM 2013



ICHSTM 2013 [flickr flickr.com/photos/ichstm2013](https://www.flickr.com/photos/ichstm2013)

MANY THANKS TO OUR SPONSORS FOR THEIR SUPPORT OF iCHSTM 2013:

International Union of History and Philosophy of Science
Division of History of Science and Technology (IUHPS/DHST)

British Society for the History of Science

Wellcome Trust

Visit Manchester

Centre for the History of Science, Technology and Medicine,
Faculty of Life Sciences, University of Manchester

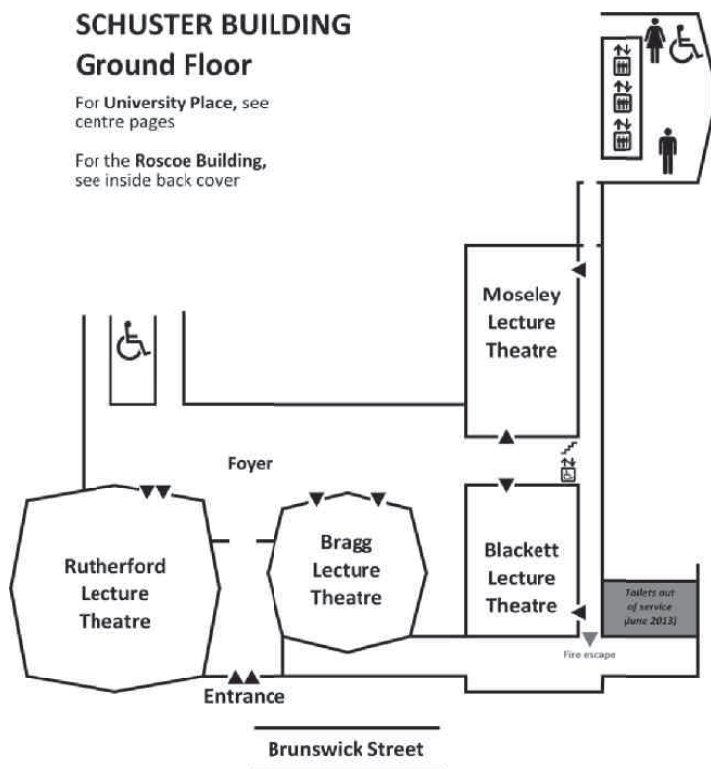
City of Helsinki ▪ History of Geology Group with INHIGEO ▪ Institute of Physics History of Physics Group ▪ Manchester Literary and Philosophical Society ▪ Manchester Metropolitan University ▪ Music Finland ▪ Newcomen: The International Society for the History of Engineering and Technology ▪ Notes and Records of the Royal Society ▪ Royal Society of Chemistry Historical Group ▪ Science Museum Group ▪ Society for the History of Alchemy and Chemistry ▪ Society for the History of Natural History ▪ Society for the History of Technology ▪ Society for the Social History of Medicine ▪ Waters Corporation

SCHUSTER BUILDING

Ground Floor

For **University Place**, see
centre pages

For the **Roscoe Building**,
see inside back cover



WELCOME TO iCHSTM 2013

On behalf of the British Society for the History of Science, I would like to welcome you all to the 24th International Congress of the History of Science, Technology and Medicine. The BSHS is proud to host the International Congress, in the United Kingdom for the third time, with support and encouragement from many other UK-based bodies. We have all appreciated this opportunity to contribute to the global development of our subject. The 2013 meeting promises to be the largest ever, with quality to match. Manchester is a very appropriate place for our meeting, with its rich and unique traditions of science, technology and medicine. Our colleagues on the Local Organising Committee have truly put their hearts and souls, as well as countless hours of work, into the preparation of this event, and I think you will be able to see evidence of the care and trouble they have taken. I hope your week at the Congress will be filled with stimulating discussions and congenial interactions with colleagues from many corners of the world.



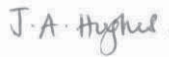
Hasok Chang

President

British Society for the History of Science

WELCOME TO MANCHESTER

On behalf the Local Organising Committee for iCHSTM2013, it is a pleasure and a privilege to welcome iCHSTM delegates to the City and University of Manchester. For this exceptionally large meeting, we have tried to provide a wide variety of intellectual and social activities. With up to 24 parallel tracks, the academic programme is the heart of iCHSTM, and we hope it will stimulate lively discussion and debate both within and about our field. But iCHSTM also offers an extensive formal and informal social programme, from official receptions to HSTM-related music and comedy, and a wide range of HSTM-themed walks, tours and visits. And iCHSTM will actively use social media to promote our field to the wider world. We hope that iCHSTM2013 will be a Congress to remember, and that you enjoy your time in Manchester!



Jeff Hughes and James Sumner

Co-chairs

iCHSTM Local Organising Committee

REGISTRATION

The registration desk (0161 306 4098) will be open Sunday 21 July from 15:00 to 19:00, Monday 22 July from 08:00 to 16:00, and from 08:30 to 16:00 Tuesday 23 July to Friday 26 July.

FOOD AND DRINK

Delegates who pre-ordered lunches will find vouchers for these in their Congress packs. Vouchers for hot lunches may be used in the restaurant on the ground floor of University Place between 12:15 and 14:15, Monday to Saturday. **The restaurant will not be open for cash sales.** Pre-ordered packed sandwich lunches may be collected from the ground-floor Drum area of University Place starting at 12:15 each day. Delegates on the centrally-organised excursions (Jodrell Bank, Chatsworth House, Quarry Bank Mill) will have their takeaway lunches delivered directly to them on the excursion buses.

A limited range of hot and cold beverages and snacks is also available for purchase in the shop on the ground floor of University Place.

For suggestions of other nearby restaurants, cafés and food vendors, please see the Restaurants and Drinks Guides under ‘Manchester’ on the Congress website – or ask a Congress volunteer.

EXCURSIONS, TOURS, SITE VISITS AND EVENT TICKETS

The Congress Events Desk on the ground floor of University Place is the central hub for information about social events, tours, walks, excursions, site visits, and Manchester sights in general.

If you have reserved a ticket for a social programme event, please collect it at the Events Desk.

If you booked a ticket for a centrally organised tour or excursion, please consult your Congress pack or the Congress website for information on these, including details of departure and return times, and the location of departure points.

Several museums and historic sites have reserved tours and special exhibits for Congress delegates. For more information about these or to sign up, please consult the Congress Events Desk.

The Congress Events Desk will be staffed

Sunday	15:00 - 18:00	Wednesday	09:00 – 16:00
Monday	10:30 - 16:00	Thursday	09:00 – 12:00
Tuesday	09:00 - 16:00	Friday	09:00 – 16:00

ANNOUNCEMENTS AND PROGRAMME UPDATES

As far as is possible, announcements and updates to the Congress’s schedule will be made via the Congress’s website and Twitter feed (@ichstm2013), and also broadcast on plasma screens in University Place.

Also, keep an eye out for the Congress *Transmission*. This daily publication will recap the previous day’s events and highlight upcoming ones, and also provide information about any changes to the established programme. Print copies of *Transmission* will be available each day, starting Monday morning, in all three buildings where paper sessions are being held (University Place, Roscoe, and Schuster). *Transmission* will also be published on the Congress website each morning and sent to all delegates on the Congress email list.

DISABILITY AND MOBILITY ASSISTANCE

Please ask at the registration desks for assistance.

EXHIBITORS

Several publishers have exhibits in the ground-floor Drum area of University Place. The second-hand and antiquarian book display is in the foyer on Floor 1. (Please see the University Place floorplans in the centre of this booklet.)

Exhibits will be open the following hours, including during Monday's early drinks reception:

Monday	09:00 – 19:30	Thursday	09:00 – 16:00
Tuesday	09:00 – 17:30	Friday	09:00 – 17:30
Wednesday	09:00 – 17:30	Saturday	09:00 – 15:00

CONNECTIVITY

A temporary user id and password for University of Manchester wifi is printed on the reverse side of each registered delegate's name badge. Eduroam is also available on most of campus.

PRACTICAL NECESSITIES

ATMs: There are several cashpoints within a five- to ten-minute walk of University Place. The closest are at the NatWest bank branch, on the corner of Oxford Road and Dover Street; and inside the Spar convenience store (open 08:00 to 22:00) on the ground level of the Precinct Centre near the intersection of Oxford Road and Booth Street (please note that charges may apply for users of this ATM). Another ATM is at the Royal Bank of Scotland branch, just south of the Student Union.

Chemists and pharmacies: The small independent Faith Pharmacy deals mostly with over-the-counter medicines and sundries, and is open 09:00 – 18:30, Monday to Friday and Saturday 10:00 – 13:00. It is located at 59 Booth St West, just west of campus (phone 0161 232 8044). Spar and Sainsbury's (see 'convenience stores' below) also carry basic over-the-counter medicines. Several full-service pharmacies in the city centre have longer opening hours and pharmacists on staff who can give advice for minor conditions. These include branches of Boots in Piccadilly Train Station, on Portland St, and in Piccadilly Gardens, where there is also a large branch of Superdrug.

Convenience stores and groceries: the convenience store Spar is located on the ground level of the Precinct Centre, entrance next to Blackwell's, near the intersection of Oxford Road and Booth Street. A Sainsbury's mini grocery, open 07:00 – midnight 7 days a week, is located a few blocks south of University Place, near the intersection of Oxford Road and Grafton Street. Around the corner on Grafton Street is a bigger grocery, Morrisons, which is open 06:00-23:00 Monday to Saturday, and 12:00 - 18:00 on Sunday.

EMERGENCY ASSISTANCE

In life-threatening and other serious situations, please dial 999 or 112, which reaches police, ambulance, and fire dispatch. (From University landlines, please dial 9999.)

For fast medical help and information about walk-in and urgent health care facilities, call NHS Direct at 111, or check www.nhs.uk.

If you need non-emergency police help on campus, contact University Security (0161 306 9966, or 69966 from a University landline); off campus, contact Greater Manchester Police by dialling 101.

USING THIS SCHEDULE

This summary programme only lists times, locations, and brief titles for symposia, individual sessions, social and public events, meetings. For more detail, please consult the interactive online programme. (Some titles of symposia and sessions have been abbreviated for space.) Use the provided session number to find more information quickly in the larger programme.

Only the times and brief titles of walks, tours, excursions, and social programme events are listed here. For more information or to sign up, please consult the Congress Events Desk.

Sessions have been arranged with staggered start and end times, to facilitate the flow of traffic between sessions in Congress venues. In the early morning timeslot, for example, half the sessions start at 09:00, and the others at 09:10. Please observe the listed start and end times for sessions.

The letters prefixing the event codes have the following meanings:

- A:** plenary events
 - C:** committee meetings
 - E:** special sessions (discussion events, talks and film screenings)
 - F:** lunchtime advice sessions aimed at graduate students and early-career researchers
 - J:** formal social programme (receptions and Congress Dinner)
 - K:** ‘fringe’, informal social programme (music and comedy)
 - L:** public events
 - M:** walks and tours on the University campus
 - P:** organised symposia accepted by ICOHTEC
 - Q:** sessions compiled from stand-alone papers accepted by ICOHTEC
 - R:** other receptions
 - S:** organised symposia accepted by the central Congress organisers
 - T:** sessions compiled from stand-alone papers accepted by the central Congress organisers
 - W:** sessions compiled from stand-alone papers accepted by the Scientific Instrument Commission
- Room locations are given with the building name first, followed by the room number. The lecture theatres in the Schuster Building are not numbered, but take their names from Manchester physicists: ‘**Schuster Rutherford**’ refers to the Schuster Building’s Rutherford Lecture Theatre, etc.

Sunday afternoon

Committee meeting

C271 DHST Council Meeting 1
15:00-17:30 ▪ Simon 2.57

Sunday evening

Reception

Welcome reception
18:00 – 20:00 ▪ Manchester Museum

Monday early morning

Plenary session

A391 Congress opening and keynote
08:45 – 10:30 ▪ Uni Place Lecture Theatre A/B
Please arrive promptly.

11:00 – 12:30

S025-A Uni Place 2.218

Headwinds through the Iron Curtain: fundamental and applied sciences in Communist Eastern Europe

S045-A Roscoe 1.007

Mathematical facets of measurement, measuring units, measured quantities and their uses ▪ How did actors compute with measured numbers? Part 1

S072-A Uni Place 1.218

Preserving scientific heritage to enable working with knowledge: preserving and disseminating scientific heritage via a global online system

S075-A Uni Place 3.204

Publishing the sciences ▪ Scientific intelligence and expertise

S084-A Roscoe 2.4

Social science, ideology, and public policy in the United States, 1961 to 2011

S092-A Schuster Blackett

Astronomy and its applications in ancient and medieval societies ▪ Astronomy and its cultural role in the ancient Near East

S099-A Roscoe 2.2

History of metrology: comparison between the West and the East ▪ Ancient metrology

S114-A Roscoe 1.009

Mathematics and patronage ▪ Eighteenth and nineteenth centuries

T159-A Uni Place 4.204

Place and affect in early-modern sciences ▪ Early modern

T167-A Uni Place 4.206

Working worlds of the twentieth-century biological sciences ▪ Pure and applied life sciences

Committee meeting

C268 Science and Empire Commission business meeting
11:00–13:00 ▪ Uni Place 4.212

Off-site excursions and tours

09:15–13:00 ▪ Jodrell Bank Observatory

11:10 – 12:40

S017 Uni Place 3.205

Boundaries at work: producing experimental and clinical knowledge of/with epilepsy in the nineteenth and twentieth centuries

S058-A Uni Place 1.219

Working in science and as art: twentieth-century ‘experimental’ relationships ▪ Demonstrating natures

S062-A Roscoe 2.3

Reworking the history of chemistry ▪ Practice: recovering early alchemy and chemistry

S091-A Roscoe 2.5

The achievements of R J Bosovich in the philosophy of nature, astronomy, technique and culture ▪ Philosophy of nature and modern science

S105-A Schuster Moseley

One hundred years of the Bohr atom ▪ Foundations

S108-A Roscoe 1.010

Knowledge at work in the oceans of the world ▪ Observers and instruments

T163-A Roscoe 1.008

Mapping, geography and geology ▪ The politics of mapping

T181-A Uni Place 4.205

Cultures of eighteenth- and nineteenth-century science and engineering ▪ Cultures of knowledge and practice

Special session

E118-A 40th anniversary history of ICOHTEC symposium ▪ Get socialised: ICOHTEC in the big picture
11:10–12:40 ▪ Schuster Bragg

Lunchtime advice sessions

F303 Why blog? An introduction
13:00–13:45 ▪ Uni Place 4.205

F311 Graduate student guide to Manchester
13:00–13:45 ▪ Uni Place 4.204

Nearby walks and tours

12:00–13:00 ▪ Manchester Museum tour
13:00–14:00 ▪ Manchester Museum tour
13:00–13:45 ▪ Campus history walk: Physics
13:00–13:45 ▪ Campus history walk: Turing

14:00 – 15:30

S025-B Uni Place 2.218

Headwinds through the Iron Curtain: fundamental and applied sciences in Communist Eastern Europe

S045-B Roscoe 1.007

Mathematical facets of measurement, measuring units, measured quantities and their uses ▪ How did actors compute with measured numbers? Part 2

S072-B Uni Place 1.218

Preserving scientific heritage to enable working with knowledge: preserving and disseminating scientific heritage via a global online system ▪ Sharing knowledge in context

S075-B Uni Place 3.204

Publishing the sciences ▪ Periodicals and popularisation

S084-B Roscoe 2.4

Social science, ideology, and public policy in the United States, 1961 to 2011

S092-B Schuster Blackett

Astronomy and its applications in ancient and medieval societies ▪ Instruments and inscriptions in Greco-Roman astronomy

S099-B Roscoe 2.2

History of metrology: a view of comparison between the West and the East ▪ Metrology and standardization

S114-B Roscoe 1.009

Mathematics and patronage ▪ Nineteenth and twentieth centuries

T159-B Uni Place 4.204

Place and affect in early-modern sciences ▪ Spaces and practical knowledge

T167-B Uni Place 4.206

Working worlds of the twentieth-century biological sciences ▪ Eugenics

14:10 – 15:40

S026-A Uni Place 3.205

Pratiques et théories dans le champ de la santé mentale: quel(s) rapport(s)?

S058-B Uni Place 1.219

Working in science and as art: twentieth-century 'experimental' relationships ▪ Demonstrating technologies

S062-B Roscoe 2.3

Reworking the history of chemistry: practice, revolution, visualization and exchange ▪ Visualising: the matter of form in modern chemistry

S086-A Uni Place 2.219

Data at work ▪ Biology, agriculture and medicine

S091-B Roscoe 2.5

The achievements of R J Boscovich in the philosophy of nature, astronomy, technique and culture: historical resources and contemporary epistemic reflections ▪ Boscovich's heritage in the European context

S105-B Schuster Moseley

One hundred years of the Bohr atom ▪ Elucidations

S108-B Roscoe 1.010

Knowledge at work in the oceans of the world ▪ Expeditions

T163-B Roscoe 1.008

Mapping, geography and geology ▪ Geological travels

T181-B Uni Place 4.205

Cultures of eighteenth- and nineteenth-century science and engineering ▪ The machine

Special session

E118-B 40th anniversary history of ICOHTEC symposium ▪ From hardware to software: Changes in the ICOHTEC research agenda 14:10–15:40 ▪ Schuster Bragg

16:00 – 17:30

S025-C Uni Place 2.218

Headwinds through the Iron Curtain: fundamental and applied sciences in Communist Eastern Europe

S045-C Roscoe 1.007

Mathematical facets of measurement, measuring units, measured quantities and their uses ▪ How did actors use and discuss measuring units?

S072-C Uni Place 1.218

Preserving scientific heritage to enable working with knowledge: how historians, archivists and scientists can engage in preserving and disseminating scientific heritage via a global online system

S075-C Uni Place 3.204

Publishing the sciences ▪ Why publish?

S084-C Roscoe 2.4

Social science, ideology, and public policy in the United States, 1961 to 2011

S092-C Schuster Blackett

Astronomy and its applications in ancient and medieval societies ▪ European medieval astronomy and astrology

S099-C Roscoe 2.2

History of metrology: a view of comparison between the West and the East ▪ The modernization of metrology

S114-C Roscoe 1.009

Mathematics and patronage ▪ Twentieth century

T159-C Uni Place 4.204

Place and affect in early-modern sciences

Special sessions

E118-C 40th anniversary history of ICOHTEC symposium ▪ Long-term research themes 16:10–17:40 ▪ Schuster Bragg

E302 Discussion: social media, public engagement and HSTM 16:10–17:40 ▪ Uni Place 1.219

Nearby walks and tours

17:45–18:30 ▪ Campus history walk

16:10 – 17:40

S026-B Uni Place 3.205

Pratiques et théories dans le champ de la santé mentale: quel(s) rapport(s)?

S062-C Roscoe 2.3

Reworking the history of chemistry: practice, revolution, visualization and exchange ▪ Exchange: global histories of chemistry

S067 Roscoe 1.008

Corps, santé, médecine et maladies en milieu de travail en Amérique latine, 19e et 20e siècles

S086-B Uni Place 2.219

Data at work ▪ Making coding cultures

S105-C Schuster Moseley

One hundred years of the Bohr atom ▪ Ramifications

S108-C Roscoe 1.010

Knowledge at work in the oceans of the world ▪ On the interpretation of in-situ data

T181-C Uni Place 4.205

Cultures of eighteenth- and nineteenth-century science and engineering ▪ Eighteenth- and nineteenth-century science and engineering

Monday evening

Receptions

UK learned societies' reception 18:00–19:30 ▪ Uni Place Drum
ICOHTEC anniversary reception 17:45–18:45 ▪ Schuster Foyer
iCHSTM tweetup 18:00–19:30 ▪ Ducie Arms

Social programme

Music: The Noisy Frame 21:00–22:30 ▪ Jabez Clegg

Public event

The Turing Machine Opera, with Decode/Recode 18:15–20:00 ▪ Capitol Theatre

09:00 – 10:30

S011-A **Uni Place 4.213**

Les sciences mathématiques 1750-1850: continuités et ruptures

S020-A **Uni Place 4.204**

Plant science and global food security in the twentieth century

S051-A **Roscoe 1.007**

Population control and reproductive health rights in Cold War Asia ▪ East Asia

S087-A **Roscoe 1.009**

Science and the emotions: transnational and interdisciplinary perspectives

S092-D **Schuster Blackett**

Astronomy and its applications in ancient and medieval societies ▪ Astronomy and its applications in western Asia and the Islamic world

S112-A **Uni Place 1.218**

Geology in art and literature ▪ The geological imagination

S115-A **Roscoe 2.4**

Mathematical knowledge at work in Ancient China

P125 **Uni Place 4.206**

Enforced specialization in computing technology: debugging the history of cooperation and competition in COMECON countries

W131-A **Schuster Rutherford**

32nd Scientific Instrument Symposium ▪ Trade and transfer of scientific instruments, part 1

T165-A **Uni Place 3.204**

Contexts of natural history ▪ Botany books and careers in the eighteenth and nineteenth centuries

T193-A **Uni Place 2.218**

Science, technology and medicine in the public sphere ▪ Science, technology and medicine in the public sphere

09:10 – 10:40

S002-A **Uni Place 1.2**

Research in science museums: the state of the art ▪ Museum-university collaborations: an ideal marriage?

S033-A **Uni Place 4.2**

Paris: capital of hygiene? ▪ Food, fitness, and fatality: hygiene and bodies

S046-A **Roscoe 1.0**

Visual communication in early-modern to modern learned journals

S053-A **Roscoe 1.0**

Knowledge at work across cultural boundaries

S074-A **Uni Place 4.2**

Connected histories? Science and technology from a new historiographical perspective

S079-A **Uni Place 3.2**

Materia medica and pharmacy: from the medicinal virtues to the active principles of plants

S106-A **Roscoe 1.0**

Philosophy at work in modern physics

T182-A **Uni Place 2.2**

Post-Second World War science and technology ▪ Postwar contexts

S199-A **Roscoe 1.0**

Science, technology and medicine in the Ottoman Empire

Committee meeting

C260 Oceanography Commission

09:10–10:40 ▪ Uni Place 4.214

Off-site excursions and tours

09:15–13:00 ▪ Jodrell Bank Observatory

11:00 – 12:30**S011-B Uni Place 4.213**

Les sciences mathématiques 1750-1850:
continuités et ruptures

S019 Uni Place 4.206

The history of radio communications: how
radio has transformed the world and
exploration since David Livingstone

S020-B Uni Place 4.204

Plant science and global food security in the
twentieth century

S051-B Roscoe 1.007

Population control and reproductive health
rights in Cold War Asia ▪ South Asia

S087-B Roscoe 1.009

Science and the emotions: transnational and
interdisciplinary perspectives

S092-E Schuster Blackett

Astronomy and its applications in ancient and
medieval societies ▪ South and East Asian
astronomy, part 1

S100-A Roscoe 2.2

Comparative perspectives on ancient
astronomy ▪ Chinese calendar-making

S112-B Uni Place 1.218

Geology in art and literature ▪ Geology
between Enlightenment and Romanticism

S115-B Roscoe 2.4

Mathematical knowledge in Ancient China

W131-B Schuster Rutherford

32nd Scientific Instrument Symposium ▪ Trade
and transfer of scientific instruments, part 2

T165-B Uni Place 3.204

Contexts of natural history ▪ Spaces and
places of natural history

T193-B Uni Place 2.218

STM in the public sphere ▪ Science and
religion in local contexts

Special session

E308 Victorian science spectacular
11:00–12:30 ▪ Pear LT, Coupland 1 Bldg

Off-site excursions and tours

11:00–12:00 ▪ Ordsall Hall Gardens tour
11:00–13:00 ▪ Cottonopolis walk

11:10 – 12:40**S002-B Uni Place 1.219**

Research in science museums ▪ Artefacts and
beyond: material culture research

S033-B Uni Place 4.212

Paris: capital of hygiene? ▪ Administering the
hygienic city: regulation and reform

S046-B Roscoe 1.008

Visual communication in early-modern to
modern learned journals

S053-B Roscoe 2.3

Knowledge at work across cultural boundaries

S074-B Uni Place 4.205

Connected histories? Science and technology
from a new historiographical perspective

S079-B Uni Place 3.205

Materia medica and pharmacy: from
medicinal virtues to active principles of plants

S106-B Roscoe 2.5

Philosophy at work in modern physics

P123-A Schuster Bragg

The invisible bicycle: new insights into bicycle
history ▪ Patterns of growth and decline

T182-B Uni Place 2.219

Post-Second World War science and
technology ▪ Organisations

S199-B Roscoe 1.010

STM in the Ottoman Empire

Committee meetings

C264 Modern Physics Commission
12:45–13:45 ▪ Roscoe 2.5

C275 Tyndall Correspondence Project
12:45–13:45 ▪ Uni Place 3.205

Nearby walks and tours

12:00–13:00 ▪ Manchester Museum tour
12:00–13:00 ▪ Museum Herbarium tour
13:00–13:45 ▪ Campus history walk: Chemistry
13:00–14:00 ▪ Manchester Museum tour

Lunchtime advice sessions

F317 Careers and funding: academia,
museums and public institutions
13:00–13:45 ▪ Uni Place 4.205

F312 Graduate student guide to Manchester
13:00–13:45 ▪ Uni Place 4.204

14:00 – 15:30

S016-A Roscoe 1.007

Image-making and knowledge-making in early-modern Europe ▪ Images at work

S037-A Uni Place 4.206

Cornucopia or Pandora's box: digital working methods, web portals and VREs in the history of science and technology

S040-A Uni Place 4.204

Science in agriculture ▪ Remembering Rachel Carson: the Green Revolution and the politics of industrial agriculture

S087-C Roscoe 1.009

Science and the emotions: transnational and interdisciplinary perspectives

S092-F Schuster Blackett

Astronomy and its applications in ancient and medieval societies ▪ South and East Asian astronomy, part 2

S100-B Roscoe 2.2

Comparative perspectives on ancient astronomy ▪ Greek tradition in various cultures

S112-C Uni Place 1.218

Geology in art and literature ▪ Geology and nineteenth-century fiction

S115-C Roscoe 2.4

Mathematical knowledge in Ancient China

W131-C Schuster Rutherford

32nd Scientific Instrument Symposium ▪ The bigger, the better: physics and astronomy

T155-A Uni Place 4.213

Early-modern mathematics ▪ Working cultures of early modern-European maths

T165-C Uni Place 3.204

Contexts of natural history ▪ Local contexts for natural history

T193-C Uni Place 2.218

STM in the public sphere ▪ Public cultures of nineteenth-century science

Off-site excursions and tours

13:30–15:30 ▪ John Dalton walk

14:00–16:30 ▪ Manchester peace and justice trail guided walk

15:00–15:30 ▪ Imperial War Museum tour

14:10 – 15:40

S002-C Uni Place 1.219

Research in science museums ▪ Using the Web and social media to extend the traditional aims of museums

S027-A Uni Place 3.205

Cross-cultural transmissions of medical knowledge in premodern Asia

S060-A Roscoe 1.010

The transmission of medical knowledge in the Islamic world

S063-A Roscoe 1.008

The paper world of science in the age of industry and Empire ▪ Communicating through manuscript and print

S065 Roscoe 2.3

Knowledge between transmission and local cultural boundaries: migrating scientists and physicians in the twentieth century

S073-A Uni Place 4.212

Medical knowledge at the colonial work front: health reports as research tools ▪ Writing knowledge: colonial physicians

S106-C Roscoe 2.5

Philosophy at work in modern physics

T182-C Uni Place 2.219

Post-Second World War science and technology ▪ The politics of STM in the European context

Special sessions

E301 The future of journals in HSTM

14:10–15:40 ▪ Uni Place 4.214

E309-A Manchester in HSTM ▪ Using campus

heritage for public history: cases and issues

14:10–15:40 ▪ Uni Place 4.205

Committee meetings

C265 IASCUD Executive Committee 1

14:00–15:30 ▪ Simon Building, Room 2.57

C261-A ICOHTEC Executive Committee

14:10–15:40 ▪ Schuster Bragg

16:00 – 17:30

S016-B Roscoe 1.007

Image-making and knowledge-making in early-modern Europe ▪ Colour matters

S037-B Uni Place 4.206

Cornucopia or Pandora's box: digital working methods, web portals and VREs in the history of science and technology

S040-B Uni Place 4.204

Science in agriculture: interactions of science, agriculture and environment ▪ Agricultural science: interactions between agricultural problems and theoretical knowledge

S092-G Schuster Blackett

Astronomy and its applications in ancient and medieval societies ▪ South and East Asian astronomy, part 3

S112-D Uni Place 1.218

Geology in art and literature ▪ The art of geological mapping

W131-D Schuster Rutherford

32nd Scientific Instrument Symposium ▪ Understanding instruments of physics through re-use and replication

T152 Roscoe 1.009

Gender at work

T155-B Uni Place 4.213

Early-modern mathematics ▪ Non-western mathematics in translation and appropriation

T165-D Uni Place 3.204

Contexts of natural history ▪ Animals, monsters, and culture

Special session

E309-B Manchester in HSTM ▪ Roundtable discussion: Manchester topics and contexts
16:10–17:40 ▪ Uni Place 4.205

Committee meetings

C261-B ICOHTEC Executive Committee
16:10–17:40 ▪ Schuster Bragg

C281 IASCUD General Assembly
16:10–17:40 ▪ Uni Place 4.214

16:10 – 17:40

S002-D Uni Place 1.219

Research in science museums: the state of the art ▪ Developing a public history of STM

S027-B Uni Place 3.205

Cross-cultural transmissions of medical knowledge in premodern Asia

S060-B Roscoe 1.010

The transmission of medical knowledge in the Islamic world

S063-B Roscoe 1.008

The paper world of science in the age of industry and Empire ▪ Newspaper networks

S073-B Uni Place 4.212

Medical knowledge at the colonial work front: health reports as research tools ▪ Writing, counting and accounting for public health: empire, state and nation

S106-D Roscoe 2.5

Philosophy at work in modern physics

T182-D Uni Place 2.219

Post-Second World War science and technology ▪ The nuclear Pacific

Public event

L345 Strange Ice

16:00–17:30 ▪ Room G51, Chemistry Building

Nearby walks and tours

17:45–18:30 ▪ Campus history walk

Tuesday evening

Reception

Civic reception

19:00–21:00 ▪ Manchester Town Hall

Social programme

Comedy: XS Malarkey

20:00–22:30 ▪ Jabez Clegg

Public events

The Turing Machine Opera, with

Decode/Recode

18:15–20:00 ▪ Capitol Theatre

Victorian science spectacular

19:30–21:00 ▪ Portico Library

09:00 – 10:30

S015-A Roscoe 1.009

Novel expertise and emerging specialists

S022-A Uni Place 4.204

From natural history to ecology: towards a comparative history of life sciences in the long nineteenth century

S029-A Roscoe 1.007

Visual, material and empirical culture in early-modern Iberian science: artifacts, regiments, vessels, nautical charts, natural specimens, cosmographers, naturalist and pilots

S031-A Uni Place 4.213

The contribution of Friedrich Engels in the history of science and technology ▪ The actuality of Engels' work

S064-A Uni Place 3.204

Science × Medicine: Promiscuous objects, entangled problems

S069-A Roscoe 2.2

Putting the human sciences to work in the twentieth century ▪ Governing minds and bodies with the human sciences

S092-H Schuster Blackett

Astronomy and its applications in ancient and medieval societies ▪ Ptolemy Graecus, Arabus, Latinus, part 1

S096-A Roscoe 2.4

The making of transnational science: scientific contacts between China and the West during the late Qing and Republican China

S112-E Uni Place 1.218

Geology in art and literature ▪ Communicating geological knowledge

T190-A Uni Place 2.218

Literary approaches in HSTM ▪ Literary approaches

Committee meeting

C253 Scientific Instrument Commission
09:00–10:30 ▪ Schuster Rutherford

Off-site excursions and tours

09:15–13:00 ▪ Jodrell Bank Observatory

09:10 – 10:40

S035 Roscoe 1.008

Image and context: visual representations and the boundaries of scientific practice

S036-A Uni Place 3.205

Systems biology: a paradigm at work?

S060-C Roscoe 1.010

The transmission of medical knowledge in the Islamic world

S088-A Roscoe 2.3

Expanding women's sphere: knowledge and the re-definition of women's work in the twentieth century

S107-A Roscoe 2.5

Poincaré's *Méthodes nouvelles de la mécanique céleste* in historical context ▪ Wireless technology and theory, 1896-1914

S111-A Uni Place 1.219

Geography and its publics ▪ Multiple publics, part 1

P120-A Schuster Moseley

Eighth annual symposium on the social history of military technology, incorporating the Gunpowder Study Group ▪ Premodern military technology

P123-B Schuster Bragg

The invisible bicycle: new insights into bicycle history ▪ Adoption, appropriation, demonstration

T183-A Uni Place 4.205

Twentieth-century sciences in comparative (inter)national contexts ▪ Mid twentieth-century applied sciences

T201-A Uni Place 4.214

History of technology ▪ Ships

T204-A Uni Place 4.212

Science and technology museums in context ▪ Science and technology collections

Special session

E047-A Historical and contemporary communications technologies in Africa: case study in Cameroon ▪ Generating knowledge
09:10–10:40 ▪ Uni Place 2.219

11:00 – 12:30

S015-B Roscoe 1.009
Novel expertise and emerging specialists

S022-B Uni Place 4.204
From natural history to ecology: towards a comparative history of life sciences in the long nineteenth century

S029-B Roscoe 1.007
Visual, material and empirical culture in early-modern Iberian science

S031-B Uni Place 4.213
The contribution of Friedrich Engels in the history of science and technology ▪ Analyzing Engels' work

S039-A Uni Place 4.206
Literary history and the history of science ▪ Scientific institutions and literary culture

S064-B Uni Place 3.204
Science × Medicine: Promiscuous objects, entangled problems

S069-B Roscoe 2.2
Putting the human sciences to work ▪ Culture and constructing citizens with the human sciences

S092-J Schuster Blackett
Astronomy and its applications in ancient and medieval societies ▪ Ptolemy Graecus, Arabus, Latinus, part 2

S096-B Roscoe 2.4
The making of transnational science: scientific contacts between China and the West during the late Qing and Republican China

W131-E Schuster Rutherford
32nd Scientific Instrument Symposium ▪ The ravages of time

T190-B Uni Place 2.218
Literary approaches in HSTM ▪ Literary sources in HSTM

Special sessions

E307 Screening: John Milne documentary
11:00–12:30 ▪ Uni Place 1.218

E047-B Historical and contemporary communications technologies in Africa: case study in Cameroon ▪ Using knowledge
11:10–12:40 ▪ Uni Place 2.219

11:10 – 12:40

S036-B Uni Place 3.205
Systems biology: a paradigm at work?

S088-B Roscoe 2.3
Expanding women's sphere: knowledge and the re-definition of women's work

S107-B Roscoe 2.5
Poincaré's *Méthodes nouvelles de la mécanique céleste* in historical context ▪ Early applications of *Méthodes nouvelles*

S111-B Uni Place 1.219
Geography and its publics ▪ Multiple publics

P120-B Schuster Moseley
Eighth annual symposium on social history of military technology incorporating Gunpowder Study Group ▪ Early modern guns and forts

P123-C Schuster Bragg
The invisible bicycle: new insights into bicycle history ▪ Cycling down by the memory lane

T177-A Roscoe 1.008
Images and models in modern medicine ▪ Visual cultures in modern medicine

T183-B Uni Place 4.205
Twentieth-century sciences in comparative (inter)national contexts ▪ UK state institutions

T200 Roscoe 1.010
Islamic science, technology and medicine

T201-B Uni Place 4.214
History of technology ▪ Aeronautics and infrastructures

T204-B Uni Place 4.212
Science and technology museums in context ▪ Museum, history and nation

Nearby walks and tours

12:00–13:00 ▪ Manchester Museum tour

Off-site excursions and tours

12:00–13:00 ▪ Working Class Movement Library tour

Lunchtime advice sessions

F315 Publishers' advice: thesis to book
13:00–13:45 ▪ Uni Place 4.206

F318 Careers and funding: public engagement
13:00–13:45 ▪ Uni Place 4.205

14:00 – 15:30

S022-C Uni Place 4.204

From natural history to ecology: towards a comparative history of life sciences in the long nineteenth century

S039-B Uni Place 4.206

Literary history and the history of science ▪
Literary knowledge, scientific knowledge, and literary form

S059-A Roscoe 1.009

Space at work ▪ Space programmes and nuclear technology

S071-A Roscoe 2.2

The science of man? Bounds of knowledge in the twentieth century

S076-A Roscoe 1.007

Theology at work in science / Science at work in theology

S089-A Uni Place 3.204

Beyond the animal model: Linking humans and animals in modern medicine

S098-A Roscoe 2.4

Religion and natural knowledge in East Asian encounters with Europe, 1600-1800

S129-A Schuster Blackett

Islamic astronomy in its cultural context ▪
Cosmography and hay'a

W131-F Schuster Rutherford

32nd Scientific Instrument Symposium ▪
Instruments for exploration

T186 Uni Place 4.213

Ecology, conservation, environment

T192-A Uni Place 2.218

Medicine and the media

Nearby walks and tours

13:00–14:00 ▪ Manchester Museum tour

13:00–14:30 ▪ Campus history walk: North Campus

Committee meeting

C272 DHST General Assembly 1
14:00–17:30 ▪ Uni Place LT A and B

14:10 – 15:40

S010-A Roscoe 1.010

The introduction of mathematics in Iberoamerica ▪ Foundations of mathematics

S021-A Uni Place 4.212

Industrial heritage and history of technology in the Luso-Brazilian world

S023-A Uni Place 2.219

Wiring intelligence

S081-A Roscoe 2.5

Between physics and technology: the inter-war embodiment of knowledge

S110-A Roscoe 2.3

Homemade science: domestic sites and the gendering of knowledge

S111-C Uni Place 1.219

Geography and its publics ▪ Geopolitics and exploration, part 1

P120-C Schuster Moseley

Eighth annual symposium on social history of military technology incorporating the Gunpowder Study Group ▪ Nineteenth-century military technology

P121 Schuster Bragg

Men, knowledge and technologies in the development of the modern oil industry up to the early decades of the twentieth century

T177-B Roscoe 1.008

Images and models in modern medicine ▪
Models and worldviews

T183-C Uni Place 4.205

Twentieth-century sciences in comparative (inter)national contexts ▪ Modern French science: economy and institutions

T201-C Uni Place 4.214

History of technology ▪ Knowledge transfer in universities and industry

Off-site excursions and tours

13:30–16:30 ▪ Heritage bus trip/Museum of Transport

14:00-15:00 ▪ People's History Museum tour

14:00-16:00 ▪ Manchester 'smellwalk'

15:00–15:30 ▪ Imperial War Museum North tour

16:00 – 17:30

S022-D Uni Place 4.204

From natural history to ecology: towards a comparative history of life sciences in the long nineteenth century

S039-C Uni Place 4.206

Literary history and the history of science ▪ Historicism in science and literature

S059-B Roscoe 1.009

Space at work ▪ Space programmes and the environment

S071-B Roscoe 2.2

The science of man? Bounds of knowledge in the twentieth century

S076-B Roscoe 1.007

Theology at work in science / Science at work in theology

S089-B Uni Place 3.204

Beyond the animal model: Linking humans and animals in modern medicine

S098-B Roscoe 2.4

Religion and natural knowledge in the East Asian encounter with Europe, 1600-1800

S129-B Schuster Blackett

Islamic astronomy in its cultural context ▪ Observational astronomy and its applications

W131-G Schuster Rutherford

32nd Scientific Instrument Symposium ▪ Instruments and public health

T151 Uni Place 4.213

Philosophical issues

T192-B Uni Place 2.218

Medicine and the media

Special session

E343 Of music, engineers and drugs: when Cottonopolis became Madchester
16:00–17:30 ▪ Uni Place 1.218

Committee meeting

C272 DHST General Assembly 1
14:00–17:30 ▪ Uni Place LT A and B

Nearby walks and tours

17:45–18:30 ▪ Campus history walk

16:10 – 17:40

S010-B Roscoe 1.010

The introduction of mathematics in Iberoamerica (part II)

S021-B Uni Place 4.212

Industrial heritage and history of technology in the Luso-Brazilian world

S023-B Uni Place 2.219

Wiring intelligence

S081-B Roscoe 2.5

Between physics and technology: embodiment of knowledge in the inter-war period

S110-B Roscoe 2.3

Homemade science: domestic sites and the gendering of knowledge

S111-D Uni Place 1.219

Geography and its publics ▪ Geopolitics and exploration, part 2

P120-D Schuster Moseley

Eighth annual symposium on the social history of military technology, incorporating the Gunpowder Study Group ▪ The era of the First World War

T177-C Roscoe 1.008

Images and models in modern medicine ▪ Medical techniques and medical knowledge

Wednesday evening

Receptions

Annals of Science anniversary reception (invitation only)

17:30–19:00 ▪ Uni Place 4.209

Women in Science Research Network launch
18:30–20:30 ▪ Manchester Museum

Social programme

Comedy: Bright Club

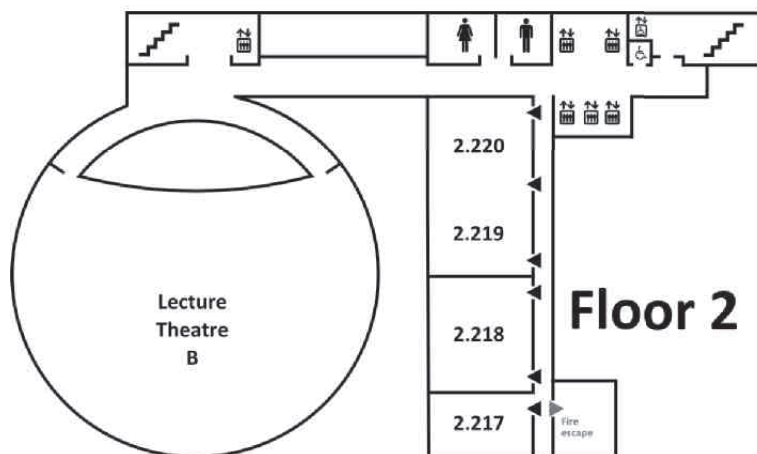
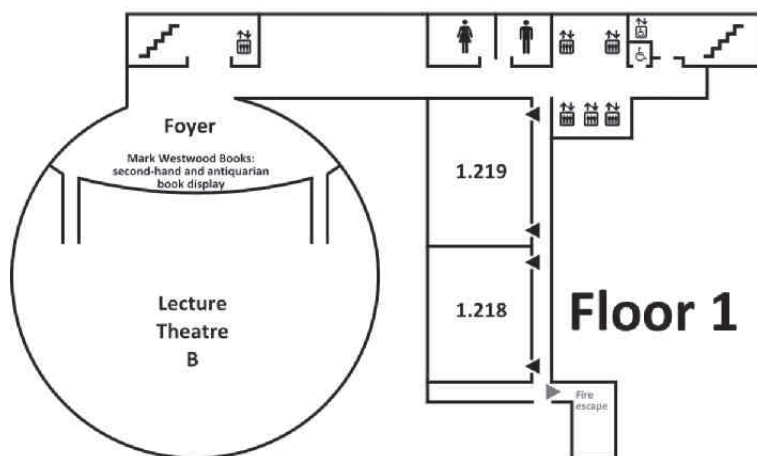
21:00–22:30 ▪ Jabez Clegg

Special session

E336 Film screening: *A City Speaks* (1947)
18:00–19:30 ▪ Schuster Bragg

Public event

Chemists, brewers and beer-doctors
20:00–20:45 ▪ Jabez Clegg

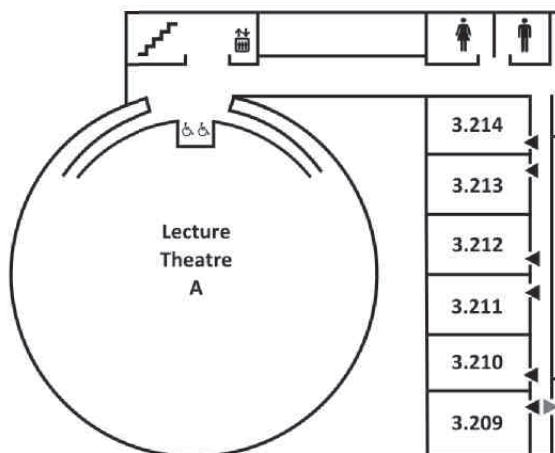


Lecture Theatres A
combined for the Comp
You can enter on Flo

UNIVERSITY PLACE

For the **Schuster
Building**, see inside front
cover

For the **Roscoe Building**,
see inside back cover

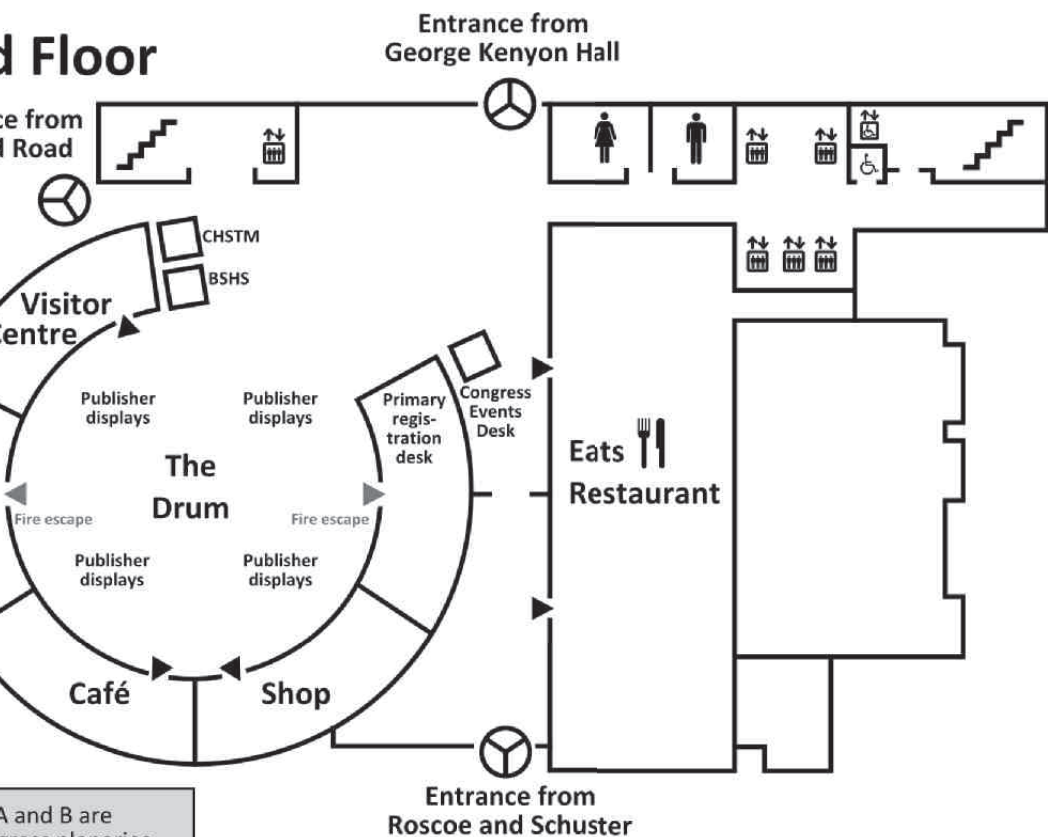


Ground

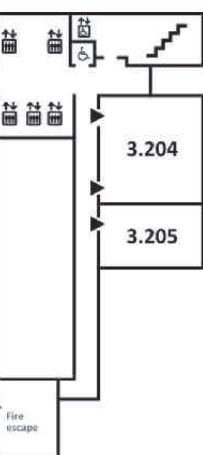
Entrance
Oxford



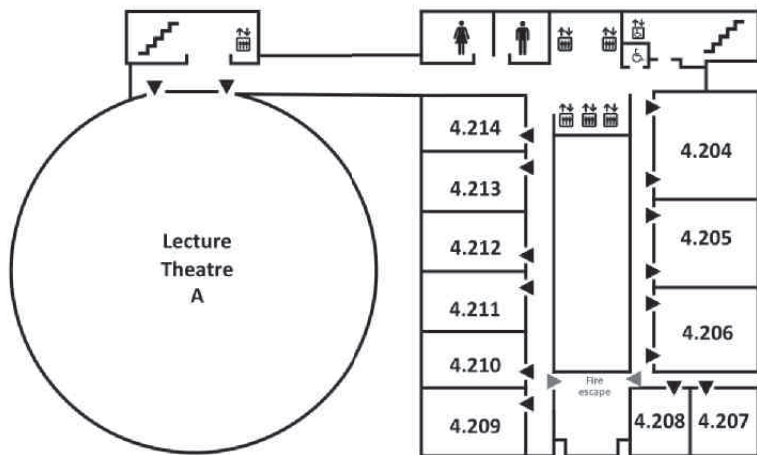
2d Floor



Floor 3



Floor 4



09:00 – 10:30

S001-A Roscoe 1.009

Knowledge preserved, knowledge lost: challenges in collecting and interpreting material culture of science and technology ▪ Knowledge preserved

S008-A Uni Place 3.204

Science as Public Culture revisited ▪ Institutions

S009 Roscoe 2.2

Leonardo da Vinci and the history of science

S034-A Uni Place 4.206

From patronage to biotech: new perspectives on medicine and commerce

S043-A Uni Place 1.218

Creating facts: disputed knowledge-claims in the nineteenth century ▪ Establishing and standardizing knowledge

S055-A Uni Place 4.204

Putting knowledge to war: research, development and the image of science in the First World War

S070-A Roscoe 1.007

Transferring and forming pharmaceutical knowledge: from practical work to academic disciplines and back, from the seventeenth to twenty-first centuries ▪ Documenting pharmaceutical knowledge

S095-A Uni Place 2.218

Using modern computing power to analyse and explicate ancient astronomical sources: opportunities and challenges

S117-A Roscoe 2.4

The institutionalization of mathematics and the founding of national societies

W131-H Schuster Rutherford

32nd Scientific Instrument Symposium ▪ Innovative optical instruments

T153-A Uni Place 4.213

New themes and approaches in science studies ▪ Interdisciplinarity

09:10 – 10:40

S012-A Roscoe 1.010

Arabic foundations of science ▪ Demonstration and empiricism in Avicenna

S014-A Roscoe 2.5

Fossil work: making paleontological specimens and knowledge

S042-A Uni Place 4.205

Practising photography in the sciences

S048 Uni Place 4.212

Putting Chinese natural knowledge to work in the long eighteenth century

S078-A Uni Place 2.219

Collecting and using oral histories of science and technology: international perspectives

S082-A Roscoe 1.008

Ideological blueprints: rational choice, equilibrium and planned development in economics ▪ Equilibrium and rational choice

S093-A Roscoe 2.3

New perspectives on classification and methodology in history of science: theoretical and technological bases for managing primary sources

S111-E Uni Place 1.219

Geography and its publics ▪ Geographical education and knowledge, part 1

S116-A Uni Place 3.205

The history and philosophy of mathematical optimization

P120-E Schuster Moseley

Eighth annual symposium on the social history of military technology, incorporating the Gunpowder Study Group ▪ Between the wars

Q127-A Schuster Bragg

ICOHTEC special topics in the history of technology

T160-A Uni Place 4.214

Topics in nineteenth-century physics ▪ Eighteenth- and nineteenth-century physical sciences

Off-site excursions and tours

09:15–13:00 ▪ Jodrell Bank Observatory

09:30–17:30 ▪ Chatsworth House

11:00 – 12:30**S001-B Roscoe 1.009**

Knowledge preserved, knowledge lost: challenges in collecting and interpreting material culture ▪ Knowledge lost

S008-B Uni Place 3.204

Science as Public Culture revisited ▪ Media

S034-B Uni Place 4.206

From patronage to biotech: new perspectives on medicine and commerce

S043-B Uni Place 1.218

Creating facts: disputed knowledge-claims in the nineteenth century ▪ Communicating and disputing knowledge-claims

S055-B Uni Place 4.204

Putting knowledge to war: research, development and the image of science in the First World War

S070-B Roscoe 1.007

Transferring and forming pharmaceutical knowledge: from practical work to academic disciplines and back ▪ Transferring pharmaceutical knowledge

S095-B Uni Place 2.218

Using modern computing power to analyse and explicate ancient astronomical sources: opportunities and challenges

S117-B Roscoe 2.4

The institutionalization of mathematics and the founding of national societies

W131-J Schuster Rutherford

32nd Scientific Instrument Symposium ▪ Mathematical instruments for royalty and the rich

T153-B Uni Place 4.213

New themes and approaches in science studies ▪ Current problems and approaches

T162 Roscoe 2.2

Aspects of the history of modern chemistry

Nearby walks and tours

12:00–13:00 ▪ Manchester Museum tour

Off-site excursions and tours

11:00–17:00 ▪ Godlee Observatory (sign up for specific time slot)

11:10 – 12:40**S012-B Roscoe 1.010**

Arabic foundations of science ▪ Foundations of science from Avicenna onwards

S014-B Roscoe 2.5

Fossil work: making paleontological specimens and knowledge

S042-B Uni Place 4.205

Practising photography in the sciences

S078-B Uni Place 2.219

Collecting and using oral histories of science and technology: international perspectives

S082-B Roscoe 1.008

Ideological blueprints: rational choice, equilibrium and planned development in economics ▪ Beyond, before and beneath planned welfare

S093-B Roscoe 2.3

New perspectives on classification and methodology in history of science: theoretical and technological bases for managing primary sources

S111-F Uni Place 1.219

Geography and its publics ▪ Geographical education and knowledge, part 2

S116-B Uni Place 3.205

The history and philosophy of mathematical optimization

P120-F Schuster Moseley

Eighth annual symposium on social history of military technology incorporating Gunpowder Study Group ▪ WWII military technology

Q127-B Schuster Bragg

ICOHTEC special topics in the history of technology ▪ Knowing users: social demands in shaping technology and designing products

T160-B Uni Place 4.214

Topics in nineteenth-century physics ▪ Discipline and metrology

Lunchtime advice sessions

F316 Metrics and journal rankings workshop
13:00–13:45 ▪ Uni Place 4.204

F319 Careers and funding: policy advisors and history
13:00–13:45 ▪ Uni Place 4.205

Thursday afternoon

Plenary session

A392 IAHS keynote address and prize award ceremonies

14:00–15:30 ▪ Schuster Rutherford

Committee meetings

C283 Teaching Commission
12:45–13:45 ▪ Uni Place 3.205

C274 IAHS General Assembly
15:45–17:45 ▪ Schuster Rutherford

Nearby walks and tours

13:00–13:45 ▪ Campus history walk

13:00–14:00 ▪ Manchester Museum tour

13:00–14:00 ▪ Manchester Museum herbarium tour

14:00–16:00 ▪ University of Manchester Museum of Medicine and Health collections

Off-site excursions and tours

For detailed information, departure locations, and/or directions to venues for the excursions and tours below, please see the Congress website and/or the Congress Events Desk.

Spaces on these excursions and tours are limited, and you must sign up in order to attend. To sign up for an excursion or tour if you have not done so already, please consult the Congress Events Desk.

11:00–17:00 ▪ Godlee Observatory (sign up for specific time slot)

12:00–13:00 ▪ Working Class Movement Library tour

12:45–17:30 ▪ Quarry Bank Mill and Styal Estate excursion

13:00–15:30 ▪ Modernist Manchester walk

13:30–15:30 ▪ Police Museum tour

14:00–15:00 ▪ People's History Museum tour

14:00–15:30 ▪ Chetham's Library tour

14:00–16:30 ▪ Victorian and Edwardian Manchester guided walk

14:00–16:30 ▪ Manchester peace and justice trail guided walk

14:00–17:00 ▪ Museum of Science and Industry tours and 'meet the curators and archivists' sessions

14:30–16:00 ▪ National Media Museum tour, Bradford*

14:30–16:30 ▪ National Railway Museum tour, York*

15:00–15:30 ▪ Imperial War Museum North tour

** The National Media Museum (Bradford) and National Railway Museum (York) are located 1-2 hours from Manchester by train. You will need to make your own travel arrangements so as to be on site when the tours begin. Consult the Congress Events Desk for more information and assistance.*

Thursday evening

Reception

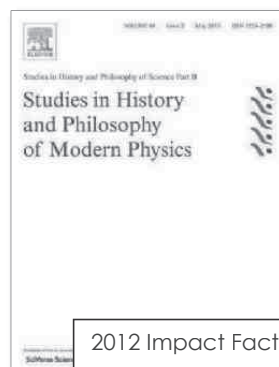
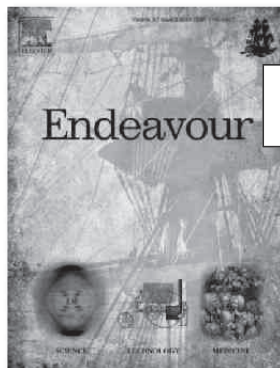
Museum of Science and Industry reception
19:00–21:00 ▪ Museum of Science and Industry

Social programme

Music: Dave Haslam, Hacienda DJ, presents "Madchester": Music from the Manchester icons of the 1980s
21:00–23:00 ▪ Jabez Clegg

LEADING HISTORY AND PHILOSOPHY OF SCIENCE JOURNALS FROM ELSEVIER

- Over 250,000 downloads in 2012
- Open Access options available for all HPS journals
- Discounted personal rates are available to members of CSHPS, BSHS, BSPS, HSS, ISHPSSB and PSA



09:00 – 10:30

S044-A Uni Place 4.213

Forensic histories: global perspectives ▪
Spaces and traces: global takes on forensic investigation in the late nineteenth and early twentieth centuries

S097-A Roscoe 2.2

From antiquity to tradition? Innovation and the past in East Asian science, technology and medicine, from the seventeenth to the twentieth century ▪ Antiquity and tradition before the colonial eras

S102-A Uni Place 2.218

The historical and cultural dimensions of Islamic science ▪ Transmission of knowledge over time and between cultures

S103-A Uni Place 1.218

Gaining it / losing it/ regaining it(?) Knowledge production in climate science, status anxiety, and authority across disciplines ▪ Climates of conquest? Anxieties about climate variability and change in Africa, the Americas, Asia and Australia

S117-C Roscoe 2.4

The institutionalization of mathematics and the founding of national societies

W131-K Schuster Rutherford

32nd Scientific Instrument Symposium ▪
Heritage and collections

T161-A Schuster Blackett

Modern physics and astronomy at work ▪
Twentieth-century astronomy

T166-A Roscoe 1.007

Eighteenth- and nineteenth-century biological sciences ▪ Networks of circulation and exchange

T170 Uni Place 4.204

Medicine and colonialism

T195-A Roscoe 1.009

Science education ▪ The role of HSTM in teaching to scientists, medics and engineers

09:10 – 10:40

S005-A Roscoe 2.3

Mathematics and machines: explorations of machine-assisted mathematics since 1800 ▪
Approaching machines and mathematics

S007-A Uni Place 4.205

Dynamics of knowledge: how technologies evolve, triumph and die ▪ What is progress?

S066-A Uni Place 2.219

Planet Earth, the environment, and the Cold War ▪ A 'Red' International Geophysical Year?

S104-A Roscoe 1.010

Materials and chemistry from bench to brand and back ▪ Early synthetic materials

S113-A Uni Place 1.219

Geologists in the field ▪ Methodology of fieldwork

P120-G Schuster Moseley

Eighth annual symposium on the social history of military technology, incorporating the Gunpowder Study Group ▪ Weapons of mass destruction

T158-A Roscoe 1.008

Knowledge and experiment in natural philosophy ▪ Working with Newton: contexts of Newtonianism in the eighteenth century

T175-A Uni Place 3.205

Contemporary medical practice and ethics

Committee meetings

C251 Women and Gender Studies

Commission

09:00–10:30 ▪ Uni Place 3.204

C255 CHAMA

09:10–12:40 ▪ Roscoe 2.5

C257 History of Geography IUC

09:10–10:40 ▪ Uni Place 4.214

Off-site excursions and tours

09:15–13:00 ▪ Jodrell Bank Observatory

11:00 – 12:30

S044-B Uni Place 4.213

Forensic histories: global perspectives ▪
Questions of expertise: experts in criminal investigations and criminal trials

S094-A Uni Place 3.204

History of science and the ecology of knowledge: the limitations, expectations, and needs of four knowledge communities

S097-B Roscoe 2.2

From antiquity to tradition? Innovation and the past in East Asian science, technology and medicine, from the seventeenth to the twentieth century ▪ Transmission and traditions: East Asian versus Western technology and medicine

S102-B Uni Place 2.218

The historical and cultural dimensions of Islamic science ▪ Medicine in context

S103-B Uni Place 1.218

Gaining it / losing it/ regaining it(?) Knowledge production in climate science, status anxiety, and authority across disciplines ▪ Narratives on climate and water

S117-D Roscoe 2.4

The institutionalization of mathematics and the founding of national societies

W131-L Schuster Rutherford

32nd Scientific Instrument Symposium ▪ The big picture: documenting and displaying historic instruments and their makers

T161-B Schuster Blackett

Modern physics and astronomy at work ▪
Theory in early twentieth-century physics

T166-B Roscoe 1.007

Eighteenth- and nineteenth-century biological sciences ▪ The history and philosophy of biology

T191 Roscoe 1.009

Science and art

T197-A Uni Place 4.206

History and historiography of HSTM ▪ Histories of the history of STM

11:10 – 12:40

S005-B Roscoe 2.3

Mathematics and machines: explorations of machine-assisted mathematics since 1800 ▪
Numerical mathematics and analog computing

S007-B Uni Place 4.205

Dynamics of knowledge: how technologies evolve, triumph and die ▪ Constructing technologies

S066-B Uni Place 2.219

Planet Earth, the environment, and the Cold War ▪ Resources and national security

S104-B Roscoe 1.010

Materials and chemistry from bench to brand and back ▪ Late advanced materials

S113-B Uni Place 1.219

Geologists in the field ▪ The importance of place

P120-H Schuster Moseley

Eighth annual symposium on the social history of military technology, incorporating the Gunpowder Study Group ▪ Cold War military technology

T158-B Roscoe 1.008

Knowledge and experiment in natural philosophy ▪ Sixteenth- and seventeenth-century natural philosophy

T175-B Uni Place 3.205

Contemporary medical practice and ethics

Committee meetings**C255 CHAMA**

09:10–12:40 ▪ Roscoe 2.5

C263 Pacific Circle Commission

11:10–12:40 ▪ Uni Place 4.214

Nearby walks and tours

12:00–13:00 ▪ Manchester Museum tour

Off-site excursions and tours

12:00–13:00 ▪ Working Class Movement Library tour

14:00 – 15:30

S030-A Roscoe 1.009

Is it the medium? Ways of communicating science in twentieth-century Europe ▪ Print, radio, news-reel

S056-A Uni Place 4.213

Medical knowledge traditions at work

S094-B Uni Place 3.204

History of science and the ecology of knowledge: the limitations, expectations, and needs of four knowledge communities

S097-C Roscoe 2.2

From antiquity to tradition? Innovation and the past in East Asian STM ▪ Antiquity, tradition and self-construction in the age of nationalism, part 1

S102-C Uni Place 2.218

The historical and cultural dimensions of Islamic science ▪ Mathematics, physics, and the heavens

S103-C Uni Place 1.218

Gaining it / losing it/ regaining it(?) Knowledge production in climate science ▪ Working atmospheres: histories of climate, technology and economics

T161-C Schuster Blackett

Modern physics and astronomy at work ▪ Techniques in modern physics

T166-C Roscoe 1.007

Eighteenth- and nineteenth-century biological sciences ▪ Philosophy, race, ethnography

T172-A Uni Place 4.204

The politics of public health ▪ Public cultures of nineteenth-century medicine

T197-B Uni Place 4.206

History and historiography of HSTM ▪ Nineteenth- and twentieth-century humanities and social sciences

Committee meetings

C254 Meteorology Commission
12:45–13:45 ▪ Uni Place 1.218

C275 BSHS EGM
12:45–13:45 ▪ Schuster Blackett

C269 History of Astronomy IUC
15:00–15:30 ▪ Uni Place 4.212

14:10 – 15:40

S005-C Roscoe 2.3

Mathematics and machines: explorations of machine-assisted mathematics ▪ Mathematics through the machine's eye: digital computing

S066-C Uni Place 2.219

Planet Earth, the environment, and the Cold War ▪ Environmental monitoring and the ideological battlefield

S104-C Roscoe 1.010

Materials and chemistry from bench to brand and back ▪ Infrastructure, instruments & ideas

S113-C Uni Place 1.219

Geologists in the field ▪ Constraints on fieldwork

T158-C Roscoe 1.008

Knowledge and experiment in natural philosophy ▪ Prints, texts and readings

T178-A Uni Place 4.205

Science, medicine, industry and markets ▪ Medicine, science and industry

T179-A Uni Place 3.205

Bio/medical practices

T196-A Uni Place 4.214

Pedagogy and textbooks ▪ Mathematical and technical pedagogy

Special sessions

E337 Nineteenth-century geological sections viewing

13:00–13:30 ▪ Uni Place 1.219

E310 The tables turned: Victorian séance event

14:00–15:30 ▪ Pear LT, Coupland 1 Bldg

Nearby walks and tours

13:00–14:00 ▪ Manchester Museum tour

13:00–13:45 ▪ Campus history walk: Physics

Off-site excursions and tours

14:00–15:00 ▪ People's History Museum tour

14:00–15:00 ▪ Salford Museum and Art Gallery: Victorian street tour

15:00–15:30 ▪ Imperial War Museum North tour

16:00 – 17:30

S030-B Roscoe 1.009

Is it the medium? Ways of communicating science in twentieth-century Europe ▪ Exhibition, museum, TV

S056-B Uni Place 4.213

Medical knowledge traditions at work

S103-D Uni Place 1.218

Gaining it / losing it/ regaining it(?) Knowledge production in climate science, status anxiety, and authority across disciplines ▪ Climate change discourse and the IPCC

T172-B Uni Place 4.204

The politics of public health ▪ Topics in eighteenth-century medicine

T176 Roscoe 2.2

East Asian medicine

T197-C Uni Place 4.206

History and historiography of the history of science, technology and medicine ▪ Professional issues in HSTM

Special sessions

E300 Neu-Whitrow Bibliography Prize presentation and Commission on Bibliography and Documentation business meeting
16:00–17:30 ▪ Uni Place 3.204

E306 Screening: Ernest Rutherford documentary
16:00–17:30 ▪ Schuster Blackett

Committee meetings

C258 CHOSTIS
16:00–17:30 ▪ Uni Place 2.218

C262 History of Mathematics IUC
16:10–17:40 ▪ Uni Place 2.219

C267 ICOHTEC General Assembly
16:00–17:30 ▪ Schuster Rutherford

C282 IASCUD Executive Committee 2
16:10–17:40 ▪ Uni Place 4.212

C266 East Asia Commission
17:45–19:00 ▪ Room 2.57, Simon Building

16:10 – 17:40

S005-D Roscoe 2.3

Mathematics and machines: explorations of machine-assisted mathematics since 1800 ▪ Programming mathematics on digital computers

S104-D Roscoe 1.010

Materials and chemistry from bench to brand and back ▪ Modelling natural materials

S113-D Uni Place 1.219

Geologists in the field ▪ Fieldwork case studies

T178-B Uni Place 4.205

Science, medicine, industry and markets ▪ Medical markets

T179-B Uni Place 3.205

Bio/medical practices

T196-B Uni Place 4.214

Pedagogy and textbooks ▪ Educational contexts

Nearby walks and tours

17:45–18:30 ▪ Campus history walk: Chemistry

Friday evening**Receptions**

Manchester Lit and Phil reception (follows Rutherford documentary screening)
17:30–18:45 ▪ Schuster Foyer

History of Mathematics IUC reception
17:30–18:45 ▪ Uni Place Restaurant

Social programme

Music: Email Special jazz troupe
21:00–23:00 ▪ Jabez Clegg

Public events

BSHS Dingle Prize lecture: David Wright, *Downs: the history of a disability*
18:00–19:00 ▪ Kanaris Lecture Theatre, Manchester Museum

The tables turned: Victorian séance event
19:30–21:00 ▪ Portico Library

09:00 – 10:30

S003-A Roscoe 1.009

Historical development, contemporary investigations and perspectives of the logical and philosophical foundations of STM ▪ The logical foundations of scientific knowledge

S004 Uni Place 2.218

Colonial science at work

S052-A Uni Place 4.206

The work of medical schools since the Second World War: the reconfiguration of knowledge, practice and pedagogy ▪ The identity, space and organization of medical education

S077-A Uni Place 1.218

Transnational nuclear perspectives

S101-A Roscoe 2.4

Ancient cultural and technological interactions between East and West along the Silk Road

T157-A Roscoe 2.2

Pre-modern astronomy and cosmology ▪ Early astronomical contexts

T180-A Uni Place 3.204

Scientific expeditions, travels and colonialism ▪ Colonial expeditions

T202 Uni Place 4.204

Information technology, communications, networks

T203-A Roscoe 1.007

Technical cultures of practice and knowledge ▪ Pre- and early-modern texts and technologies

09:10 – 10:40

S006-A Roscoe 1.010

Empires of longitude: international perspectives on navigation, mapping and science ▪ State interests

S018-A Roscoe 2.5

Global Spencerism

S028-A Roscoe 1.008

Genetics, eugenics and culture: transatlantic perspectives, 1900-2000

S061-A Roscoe 2.3

Re-creating past science and technology

S113-E Uni Place 1.219

Geologists in the field ▪ Travels and new worlds

P119-A Schuster Moseley

Everlasting bath: the history of sauna technology and culture ▪ Technological basis and social context

Q127-C Schuster Bragg

ICOHTEC special topics in the history of technology ▪ Just applied science? The origins of technological knowledge

T156-A Uni Place 4.212

Topics in the history of modern mathematics ▪ Mathematical institutions and communities in modern Brazil

T171-A Uni Place 4.205

Medical authority boundaries and medical knowledge ▪ Eighteenth- and nineteenth-century medicine

T174-A Uni Place 2.219

Twentieth-century medicine ▪ Cancer

11:00 – 12:30**S003-B Roscoe 1.009**

Historical development, contemporary investigations and perspectives of the logical and philosophical foundations of STM ▪ Philosophico-methodological problems of mathematics and physics in the process of their historical development

S052-B Uni Place 4.206

The work of medical schools since the Second World War: the reconfiguration of knowledge, practice and pedagogy ▪ Policy and specialisms in medical education

S077-B Uni Place 1.218

Transnational nuclear perspectives

S101-B Roscoe 2.4

Ancient cultural and technological interactions between East and West along the Silk Road

T157-B Roscoe 2.2

Pre-modern astronomy and cosmology ▪ Astronomy and instruments in Asian contexts

T180-B Uni Place 3.204

Scientific expeditions, travels and colonialism ▪ Eighteenth- and nineteenth-century colonialism and travel

T184 Uni Place 2.218

International organisations in twentieth-century STM

T203-B Roscoe 1.007

Technical cultures of practice and knowledge ▪ Skills, knowledges and practical work

11:10 – 12:40**S006-B Roscoe 1.010**

Empires of longitude: international perspectives on navigation, mapping and science ▪ Knowledge in circulation

S018-B Roscoe 2.5

Global Spencerism

S028-B Roscoe 1.008

Genetics, eugenics and culture: transatlantic perspectives, 1900-2000

S061-B Roscoe 2.3

Re-creating past science and technology

S113-F Uni Place 1.219

Geologists in the field ▪ Landscapes and meaning

P119-B Schuster Moseley

Everlasting bath: the history of sauna technology and culture ▪ Cultural heritage and scientific knowledge

P132 Schuster Bragg

Sonic skills at work: listening as an entrance to knowledge acquisition

T156-B Uni Place 4.212

Topics in the history of modern mathematics ▪ Biographies and contexts in history of maths

T171-B Uni Place 4.205

Medical authority boundaries and medical knowledge ▪ Medical boundaries and disputes

T174-B Uni Place 2.219

Twentieth-century medicine ▪ Asian, Pacific and Western medicine

Committee meeting

C252 Modern Chemistry Commission
11:10–12:40 ▪ Uni Place 4.214

14:00 – 15:30

S003-C Roscoe 1.009

Historical development, contemporary investigations and perspectives of the logical and philosophical foundations of STM ▪ Epistemological and ontological aspects of scientific knowledge

S038-A Uni Place 4.204

“A work to be done”: the manual and the cognitive in early-modern science

S049-A Uni Place 3.204

Science and optical media: imaging technologies, knowledge formation and the rise of the scientific imagination ▪ Optical media and scientific practices

S077-C Uni Place 1.218

Transnational nuclear perspectives

T157-C Roscoe 2.2

Pre-modern astronomy and cosmology ▪ Astronomy: techniques of the east and west

T173-A Uni Place 4.206

Medical ethics and psychology ▪ Institutions and ethics

T185-A Uni Place 2.218

STM and the state ▪ Science, medicine and the authoritarian state

T195-B Roscoe 2.4

Science education ▪ Translating science across borders: the role of textbooks

T203-C Roscoe 1.007

Technical cultures of practice and knowledge ▪ Contexts of innovation

Committee meetings

C273 DHST General Assembly 2
14:00–17:30 ▪ Uni Place LT A and B

C256 INHIGEO
14:10–17:40 ▪ Roscoe 2.3

14:10 – 15:40

S006-C Roscoe 1.010

Empires of longitude: international perspectives on navigation, mapping and science ▪ Navigation, encounter and exchange

S018-C Roscoe 2.5

Global Spencerism

S028-C Roscoe 1.008

Genetics, eugenics and culture: transatlantic perspectives, 1900-2000

S054 Uni Place 4.214

Alchemy: the relationship between working and knowing from late antiquity to the seventeenth century

P124 Schuster Moseley

Generating knowledge in practice: experiments in the building sector

P133 Schuster Bragg

Knowledge for use: universities, industry and roots of the knowledge economy

T154-A Uni Place 1.219

Sources and biography

T156-C Uni Place 4.212

Topics in the history of modern mathematics ▪ Nineteenth- and twentieth-century mathematics

T171-C Uni Place 4.205

Medical authority boundaries and medical knowledge ▪ Medical boundaries of authority and expertise

T174-C Uni Place 2.219

Twentieth-century medicine ▪ Institutions

Nearby walks and tours

13:00–14:30 ▪ Campus history walk: Biology and medicine

Off-site excursions and tours

15:00–15:30 ▪ Imperial War Museum North tour

16:00 – 17:30

S038-B Uni Place 4.204

“A work to be done”: the manual and the cognitive in early-modern science

S049-B Uni Place 3.204

Science and optical media: imaging technologies, knowledge formation and the rise of the scientific imagination ▪ Scientific images and the scientific imagination

S077-D Uni Place 1.218

Transnational nuclear perspectives

T173-B Uni Place 4.206

Medical ethics and psychology ▪ Late twentieth-century psychology and psychiatry

T185-B Uni Place 2.218

STM and the state ▪ Postwar physical sciences

T195-C Roscoe 2.4

Science education ▪ Science and education

T203-D Roscoe 1.007

Technical cultures of practice and knowledge ▪ Science and technology across boundaries

Committee meetings

C273 DHST General Assembly 2
14:00–17:30 ▪ Uni Place LT A and B

C256 INHIGEO
14:10–17:40 ▪ Roscoe 2.3

Nearby walks and tours

17:45–18:30 ▪ Campus history walk

16:10 – 17:40

S018-D Roscoe 2.5

Global Spencerism

T154-B Uni Place 1.219

Sources and biography

T156-D Uni Place 4.212

Topics in the history of modern mathematics ▪ Problems in the history of maths in the long nineteenth century

T171-D Uni Place 4.205

Medical authority boundaries and medical knowledge ▪ Knowledge-making in modern medicine

T210 Uni Place 2.219

Islamic science and medicine

Saturday evening

Social programme

Congress dinner
19:00-22:00 ▪ Manchester United Football Club

Buses depart University Place for pre-dinner tours of Old Trafford at 17:00 and 17:30. Those delegates attending for only the Congress dinner should catch the buses departing at 18:30.

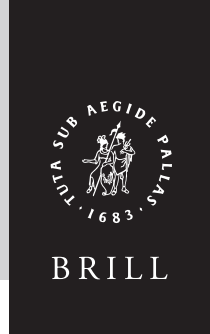
Sunday

Plenary

A399 DHST and BSHS Young Scholars' Prize presentations and Congress closing ceremony
09:30–12:00 ▪ Uni Place LT A and B

Committee meetings

C284 DHST Council 2 (incoming and outgoing Council)
08:30–09:30 ▪ Room 2.57, Simon Building



Early Science and Medicine

A Journal for the Study of Science, Technology and Medicine in the Pre-modern Period

Edited by **Christoph Lüthy**,
Radboud University, Nijmegen

brill.com/esm

A peer-reviewed journal for English-language studies dealing with the content and influence of science, medicine and technology from the earliest times through to the end of the eighteenth century. Science is defined in its widest form to include, for example, natural philosophy, optics, astronomy, natural history, and the occult sciences. Includes articles, text-editions, book reviews, and special issues on defined topics. Online from 2004.

- 2014: Volume 19, in 6 issues
- ISSN 1383-7427 / E-ISSN 1573-3823
- Institutional subscription rate
Electronic only: EUR 304.- / US\$ 398.-
Electronic + print: EUR 365.- / US\$ 478.-
Print only: EUR 334.- / US\$ 438.-
- Individual subscription rate
Print OR Online only: EUR 80.- / US\$ 105.-

Nuncius

Journal of the Material and Visual History of Science

Editor-in-Chief: **Marco Beretta**,
Museo Galileo and University
of Bologna

brill.com/nun

Nuncius is a peer-reviewed, international, biannual journal devoted to the historical role of material and visual culture in science. *Nuncius* explores the material sources of scientific endeavor, such as scientific instruments and collections, the specific settings of experimental practice, and the interactions between sciences and arts. The materiality of science is a fundamental source for the understanding of its history, and the visual representation of its concepts and objects is equally crucial.

- 2014: Volume 29, in 2 issues
- ISSN 0394-7394 / E-ISSN 1825-3911
- Institutional subscription rate
Electronic only: EUR 186.- / US\$ 243.-
Electronic + print: EUR 223.- / US\$ 292.-
Print only: EUR 205.- / US\$ 267.-
- Individual subscription rate
Print OR Online only: EUR 68.- / US\$ 89.-

Vulcan

The International Journal of the Social History of Military Technology

Editor in Chief: **Bart Hacker**,
Smithsonian Institution,
Washington D.C.

brill.com/vulc

Vulcan is a peer-reviewed, international, interdisciplinary journal which aims to cover all aspects of the social and cultural contexts of military invention and innovation. It focuses on questions such as: how do the social and cultural environments within the military itself or in the larger society affect military technological change? And the indispensable corollary: how does changing military technology affect other aspects of society and culture?

- 2014: Volume 2, in 1 issue
- ISSN 2213-459X / E-ISSN 2213-4603
- Institutional subscription rate
Electronic only: EUR 84.- / US\$ 110.-
Electronic + print: EUR 101.- / US\$ 132.-
Print only: EUR 92.- / US\$ 121.-
- Individual subscription rate
Print OR Online only: EUR 31.- / US\$ 41.-



WIREs

CLIMATE CHANGE



Editor in Chief: **Professor Mike Hulme**
University of East Anglia, UK

Impact Factor
3.462

- An important new forum to promote cross-disciplinary discussion of a global phenomenon with long-term societal implications
- Published in association with the Royal Meteorological Society and the Royal Geographical Society (with IBG)
- An authoritative, encyclopedic resource addressing key topics from diverse research perspectives
- Now indexed by TRSI (formerly ISI), CAB Abstracts, and Scopus

**BROWSE ONLINE THE NEW COLLECTION OF ARTICLES,
FREE TO ACCESS THROUGHOUT THE CONGRESS!**

THE HISTORY OF CLIMATE CHANGE: IDEAS, KNOWLEDGE AND EXPERTISE

This *WIREs Climate Change* Collection for the 24th International Congress of the History of Science, Technology and Medicine, at the University of Manchester, 21-28 July 2013, represents some of the emerging literature in the field. Topics include historiography of climate change, history of climate modelling and climate engineering, construction and use of climate models. *WIREs Climate Change* welcomes suggestions for review articles which deal with climate change from the STS perspective.

Read online at www.wires.wiley.com/climatechange or
scan the QR code below.



WIREs Climate Change is only
available through online subscription.
Recommend to your librarian at
wileyonlinelibrary.com/recommend

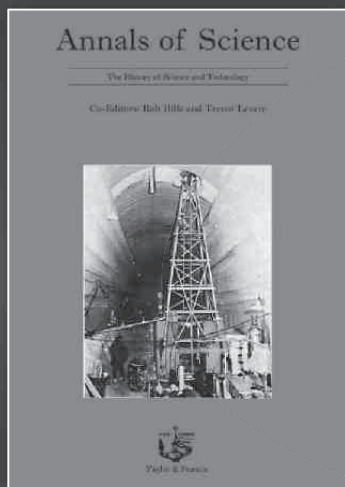


Visit the Taylor & Francis booth to find out more about our full range of journals, enjoy discounts on books and enter our **FREE PRIZE DRAW**. Prizes include a **Kindle Fire HD™** and books. **Don't miss out!**

Annals of Science

70TH VOLUME

**FREE
access**



Let's celebrate with
FREE ACCESS*
to the Editors' Choice.

The article collection includes over 80 articles
across the 77 years of publication of the Journal.

www.tandfonline.com/r/Annals70

ENJOY

Find out more about the Journal at our booth.

Do you have access to our portfolio of **History of Science** titles?

Enjoy 14 days **FREE ONLINE ACCESS*** to the 2011 and 2012 volumes at:
www.tandfonline.com/r/history_of_science



Keep up-to-date with all things Science, Technology & Society... Register your email address at www.tandfonline.com/eupdates to receive information on books, journals and other news within your areas of interest.

Become a fan on Facebook



Science, Technology & Society www.facebook.com/routledgeSTS
History www.facebook.com/routledgehistory

Follow us on Twitter



Science, Technology & Society www.twitter.com/routledge_STS
History www.twitter.com/routledgeHist



Find out more about Open Access:
www.tandfonline.com/page/openaccess



Taylor & Francis
Taylor & Francis Group



Routledge
Taylor & Francis Group

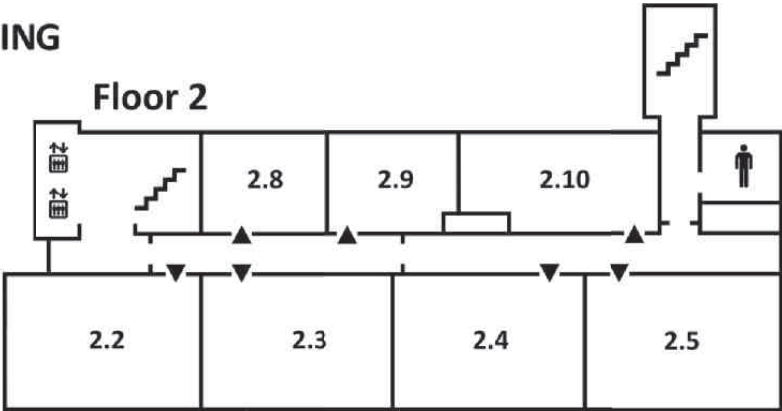
* free access valid until 31 December 2013

ROSCOE BUILDING

For the **Schuster Building**, see inside front cover

For **University Place**, see centre pages

Floor 2



Floor 1

