Chemical Intelligence Summer 2025 issue

Society for the History of Alchemy and Chemistry

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Appointment of New *Ambix* Editorial Team

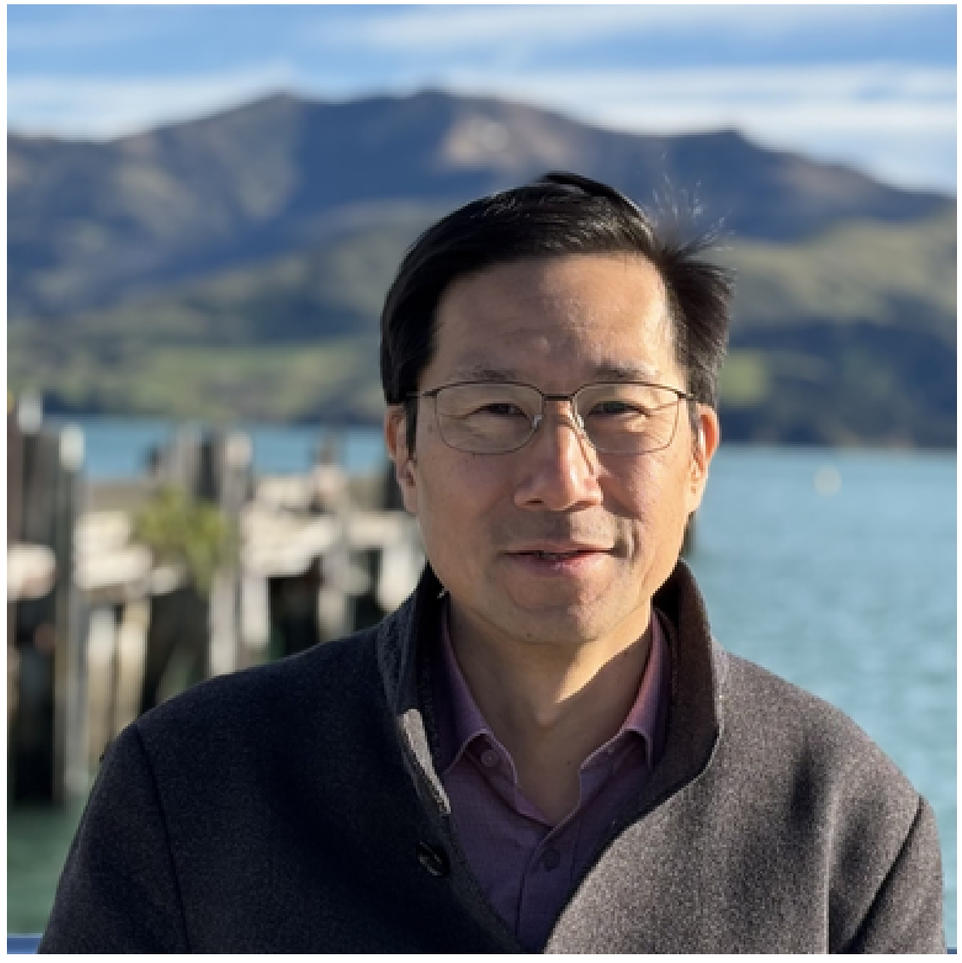
The Council of the Society for the History of Alchemy and Chemistry is delighted to announce that Annette Lykknes has been appointed Editor-in-Chief of *Ambix* when Bruce Moran steps down at the end of 2025. Annette will be joined by Carmen Schmechel and Stephen Clucas as Associate Editors for the pre-modern period. Peter Ramberg will continue as an Associate Editor and Viviane Quirke will be stepping down from her role. We are also delighted to announce that Sarah Hijmans will be joining Tillmann Taape as Co-editor for Book Reviews with immediate effect.

Frank James and Annette Lykknes signing the new *Ambix* editorial agreement at the International Conference on the History of Chemistry in Valencia, June 2025

Prof. Hasok Chang, FBA

Hasok Chang, a long-standing SHAC council member and the Hans Rausing Professor of History and Philosophy of Science at University of Cambridge, has been elected a Fellow of the British Academy. Many congratulations to Hasok!

https://www.thebritishacademy.ac.uk/fellows/hasok-chang-fba/



Royal Society of Chemistry Historical Group Meetings

History of Astrochemistry Meeting

The next Royal Society of Chemistry Historical Group Meeting will take place at Burlington House, London, on **Thursday 16 October 2025** with a mixture of talks by historians on the pre-1950 period and by astrochemists on the more recent history of the field. The history of chemistry in space began with the development of stellar spectroscopy in the 1860s and took off a century later when organic molecules were discovered in space using radio astronomy. Astrochemists now use a combination of observation (using radio and millimetre telescopes including ALMA), theoretical chemistry and laboratory studies to build up a complete picture of how molecules are formed in space and react with each other.

The event is free of charge and open to everyone. Coffee and tea will be available, but lunch is not included, although there are plenty of cafes nearby in Piccadilly and adjoining streets. Please register for this meeting by emailing the Secretary of the Historical Group, Mike Leggett, at leggett189@btinternet.com.

Programme

10.00: Coffee and tea

Session One (chair: John Nicholson)
10.20: Welcome from **John Nicholson**, Chair of the Historical Group
10.25: **Ileana Chinnici**, "Early History of Astronomical Spectroscopy".
10.55: **Helge Kragh**, "Element Abundances in the Stars and Beyond, ca. 1925-1940".
11.25: **Simon Mitton**, "Seven Steps to Element Synthesis: B2FH".
11.55: **Jonathan Hare**, "Carbon Astrochemistry and the Discovery of Buckminsterfullerene".

12.25: Lunch (not provided for audience)

Session Two (chair: Jeremy Shears)
1.45: **John Black**, "Alexander Dalgarno and the Growth of Astrochemistry".
2.15: **Jonathan Rawlings**, "First Detection of Molecules in Space".
2.45: **Glenn White**, "The Development of Submillimetre Astronomy in the UK and Elsewhere".

3.15: Tea and coffee

Session Three (chair: Peter Morris)
3.40: **Mike Edmunds**, "A History of the Chemical Analysis of Extragalactic Systems".
4.20: **David Carty**, "Laboratory Astrochemistry".
4.50: Closing remarks by Peter Morris
5.00: Meeting ends

The History of Alchemy and Chemistry

16 and 17 October 2025, at the Science History Institute, Philadelphia

The Society for the History of Alchemy and Chemistry (SHAC) now has as many members in North America as it does in Britain. So, the autumn/fall meeting of the Society will be held jointly with and in the Science History Institute (SHI) in Philadelphia.

The draft programme is below and registration will open in early September.

Thursday 16 October

1.30 **Registration and Coffee**

2.00 **Meagan Allen**, Johns Hopkins University: Roger Bacon's medical analogies in the *Epistola de secretis operibus artis et naturae et de nullitate magiae*

2.40 **Matteo Soranzo**, McGill University: Searching for the Philosophers' Stone in Quattrocento Venice: Cristoforo da Parigi's *Summetta,* a Forgotten Best-Seller

3.20 **Claire Litt,** Tufts University: A Missing Link in Medicean Alchemy: The Book of C.P.

4.00 **Tea/Coffee**

4.30 **Stefania S. Buosi-Moncunill**, Barcelona University: Alchemy of the Forest: Sacred Plants, Golden Wine, and Healing Powers Across Continents

5.10 **Brian Li,** University of Cambridge: White Stones vs. Jade: The Aesthetics of Bodily Alchemy in Early Modern China

5.40 **Sarah Lang** and **Farzad Mahootian,** University of Graz and New York University: Computational Studies of Martin Ruland's Lexicon Alchemiae

6.00 **Short break**

6.15 **Keynote: Alan Rocke,** Case Western Reserve University: Gay-Lussac *Aeronaute*: Constructing a Career in the Napoleonic Era

7.30 **Reception sponsored by Taylor and Francis**

Friday 17 October

9.30 **Coffee**

10.00 **Sarah Lowengard**, Independent Scholar: Vegetable-Animal Transformations

10.40 **John Powers**, Virginia Commonwealth University: John Redman Coxe and the New Chemistry in Early 19th-Century America

11.20 **George Borg**, University of Pennsylvania: Modelling the Carbon Cycle, 1953-1981: A Foundational Debate in Modern Climate Science

12.00 **Lunch**

1.30 **Stephen Weininger**, Worcester Polytechnic Institution: Air Power and Pure Chemistry: Bartlett, Ingold, and the Diffusion of Physical Organic Chemistry

2.10 **Patrick Charbonneau**, Duke University: From Göttingen to Bristol to Cambridge: Lennard-Jones and the Emergence of Computational Quantum Chemistry

2.50 **Tea/Coffee**

3.30 **Christopher Halm**, Deutsches Museum: Escaping Earth, Sustaining the Moon: Chemistry and the West's Narrative Redemption—Once from World War II, Now from the Climate Crisis

4.10 **Jeffrey I. Seeman**, University of Richmond: Recent Advances in the History of Modern Chemistry

4.40 **Departure**

Morris Award – Society for the History of Alchemy and Chemistry

In June 2025 the Morris Award for 2024 was presented to Carsten Reinhardt of Bielefeld University. The award lecture "Executive Science: Governmental Research in Germany, 1933-1945" took place in Valencia at the International Conference on the History of Chemistry. Carsten was presented with the award and a framed photograph by Frank James, chair of the Society for the History of Alchemy and Chemistry. The Morris Award recognised Carsten's outstanding work as an innovator and a leader in the history of modern chemistry and chemical industry from the beginning of his career, exploring the instrumental, theoretical, commercial, industrial and regulatory dimensions of the field that we call chemistry, while emphasising the frequent "disappearance" of "chemistry" into other fields, such as molecular biology, materials science, nanotechnology, or environmental science. The Morris Award honours the memory of John and Martha Morris, the late parents of Peter Morris, the former editor of *Ambix.*

Presentation of Morris Award 2024 to Carsten Reinhardt by Frank James. Photograph courtesy of Annette Lykknes.

Paul R. Jones Outstanding Paper Award for 2024

Seth C. Rasmussen

Seth C. Rasmussen of North Dakota State University is the recipient of the 2024 Paul R. Jones Outstanding Paper Award for "Edward Frankland and the Birth of Organometallics (1)," *Bull. Hist. Chem.* 49(2) (2024), 111-121.

Seth Rasmussen obtained his B.S. in Chemistry from Washington State University in 1990. He obtained his Ph.D. in Inorganic Chemistry from Clemson University in 1994, with thesis "Synthesis and Design of Conjugated Organic Metallopolymers Containing Ruthenium Chromophoric Units" working with John D. Petersen . He was a Postdoctoral Fellow (1995-1997) and an Instructor at the University of Oregon from 1997-1999. Seth joined North Dakota State University in 1999 and became a full Professor in 2012. He spent his first sabbatical leave (2018) in Australia as a Fulbright Senior Scholar with the Centre for Organic Electronics in Newcastle. He is very active in the Divisions of the ACS that deal with polymers, and with his local Section.

Seth's time at the University of Oregon allowed him to develop his interests in the history of chemistry, including its incorporation in his teaching. He joined the HIST division in 2000 and was soon giving papers at meetings. His first paper presented to HIST was in 2004 at the Anaheim ACS Meeting: "Advances in 13th Century Glass Manufacturing and Its effect on Chemical Progress." Seth's interest in glass remains strong and he has become a recognized expert in the

history of glass. He has also contributed to the use of history in the teaching of chemistry and gave his first talk on this topic in 2004 at the 18th Biennial Conference on Chemical Education. Seth has become a prolific presence at HIST meetings ever since his first presentations.

Seth has served the HIST Division with distinction since 2008, when he became the Program Chair. His term, until 2017, was characterized by a high level of organization, a great broadening of both the number and scope of the papers, and an example of inter-Division cooperation. One of his greatest achievements was the establishment of the *Springer Briefs in the History of Chemistry* book series, of which he is the Series Editor. It has resulted in a great increase in both the number and quality of books published in America on the History of Chemistry. Most recently, he served as Chair of the HIST Division (in all three versions) from 2019-2024. In 2025, Seth received the Joseph B. Lambert HIST Award for Outstanding Achievement in the History of Chemistry.

Seth Rasmussen is now uniformly respected in the worldwide community of the history of chemistry. He is a Fellow of the Royal Society of Chemistry, an ACS Fellow, and was one of the second cohort of HIST Fellows. He serves on editorial and advisory boards of journals and represents HIST on various international bodies in the history of chemistry.

Seth's first paper to appear in the *Bulletin for the History of Chemistry* was the written form of the talk he gave in 2004: Vol. 33, No. 1, 28-34 (2008). He has since written 10 more papers and one book review for the *Bulletin* and qualifies as the most prolific of *Bulletin* authors in the 21st century.

Seth previously won the 2018 OPA for his paper "Cuprene: A Historical Curiosity Along the Path to Polyacetylene," Vol. 42, No. 1, 63-78 (2017). The paper concerns the product of the polymerization of acetylene under various conditions. It is an exhaustive chronicle of the many attempts to both synthesize and characterize the products of this reaction. The moniker "cuprene" was acquired when copper or copper oxide were used as a catalyst under high temperature conditions. The paper contains a fascinating figure of the final product that was chosen as the cover figure for Volume 42, Number 1. The colored product was a highly crosslinked hydrocarbon sheet. Once the original polymer was initiated, the temperatures were sufficient to promote further reactions with newly activated acetylene. In addition to the demanding historical research necessary for this topic, Seth has added his modern knowledge of the chemistry of polymerization. He compares the result to polyethylene which can be prepared in a "low density" form that is highly branched due to further reactions of the system after initiation of the reaction.

In addition to his work in glass and polymers, Seth has a longstanding interest in organometallic chemistry. It was thus a natural choice to write a historical biography and scientific evaluation of the work of Edward Franklin (1825-1899) in this currently recognized paper. Seth always digs deep and finds the full scope of a historical subject. He cites and analyzes the early work of Cadet, a Parisian apothecary, on "fuming arsenical liquid." Eventually Robert Bunsen achieved both understanding and full characterization of this early organometallic compound. Berzelius also contributed to the research and named the substance cacodyl.

The realities of lower-class life in England made Franklin's early life challenging, but he was blessed by a position with Lord Lyon Playfair, one of the greatest scientists in England. Another member of Playfair's laboratory was Herman Kolbe, who had obtained his Ph.D. under Bunsen. The two eager chemists also returned to Bunsen's lab for more work. This led to an appointment at Queenwood College in Hampshire. When Frankland returned to Bunsen's lab, he brought a sealed tube containing a reaction between zinc and ethyl iodide. Further work led to a Ph.D. from Marburg in 1849. Frankland then worked with Liebig at Giessen. He extended his work on zinc compounds, which led to his appointment as Playfair's successor at Putney and soon to Owens College in Manchester in 1851.

Seth's contention that Frankland should be viewed as "The Father of Organometallic Chemistry" is centered on the following figure:

Hydrogen series.	Methyl series.	Ethyl series.	Butyl series.	Valyl series.	Amyl series.	Phenyl series.
ZnH	$Zn(C_2H_3)^*$	$Zn(C_4H_5)^*$	$Zn(C_8H_7)$	$Zn(C_{10}H_9)$	$Zn(C_{10}H_{11})$	$Zn(C_{12}H_5)$
AsH_2^*	$As(C_2H_3)_2^*$	$As(C_4H_5)_2$	$As(C_8H_7)_2$	$As(C_{10}H_9)_2$	$As(C_{10}H_{11})_2$	$As(C_{12}H_5)_2$
SbH_2^*	$Sb(C_2H_3)_2$	$Sb(C_4H_5)_2$	$Sb(C_8H_7)_2$	$Sb(C_{10}H_9)_2$	$Sb(C_{10}H_{11})_2$	$Sb(C_{12}H_5)_2$
PH_2^*	$P(C_2H_3)_2^*$	$P(C_4H_5)_2$	$P(C_8H_7)_2$	$P(C_{10}H_9)_2$	$P(C_{10}H_{11})_2$	$P(C_{12}H_5)_2$

Figure 6. Frankland's table of known (*) and predicted alkyl species relative to the parent hydrides (36a).

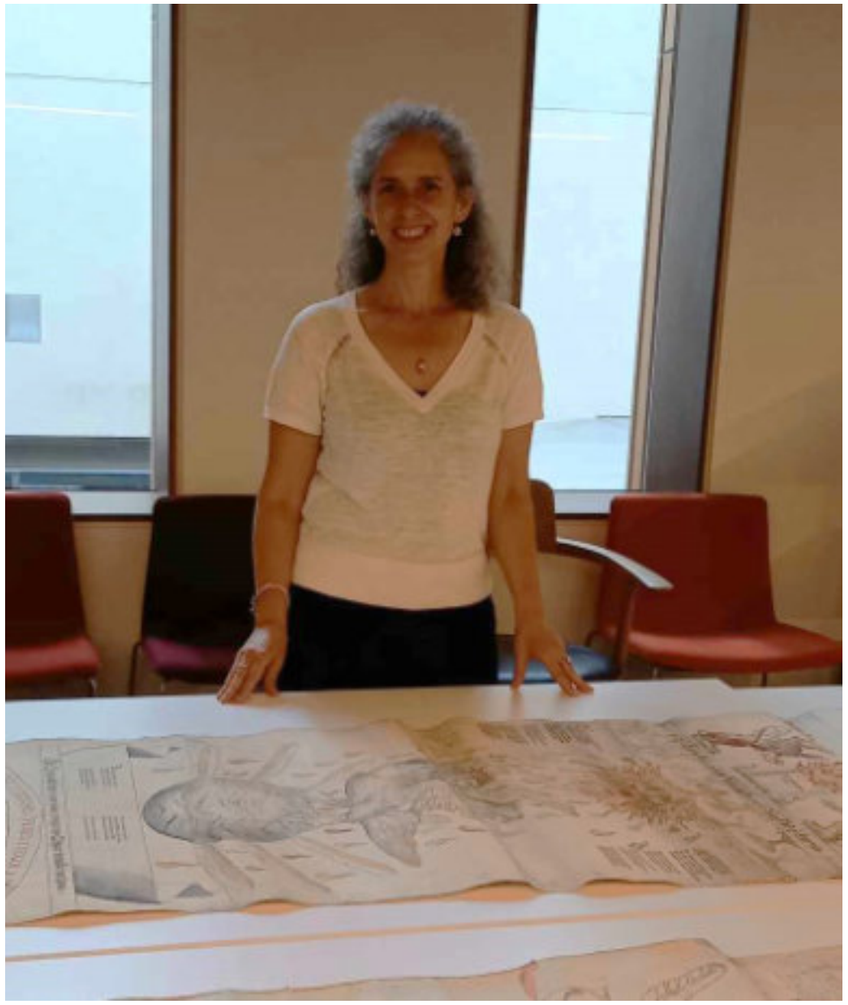
Frankland soon expanded on this family of compounds, coined the term *organometallic* in 1852, and developed both forms of transmetallation, a fundamental reaction of organometallic chemistry.

Meet our New SHAC Ambassador: Ellen Hausner

Our Winter 2025 issue introduced SHAC's new ambassador Sofiya Kamalova and student representative Amber Rozenrichter. We also welcome Ellen on board!

Ellen Hausner is a doctoral student in the Department of the History of Science, Medicine, and Technology at the University of Oxford. Her doctoral project explores the evolution of notations and signs, often known in the period as 'characters,' as a method for transmitting knowledge within European alchemical texts c. 1350-1700. Before starting her doctoral studies, she had a career in academic libraries, including almost six years in the Special Collections department of the Bodleian Library in Oxford. She gained her Master's degree in History from the University of Oxford's Department for Continuing Education.

In the autumn of 2025, Ellen will take up an Allard Pierson Library Fellowship in Amsterdam, followed by a Brill Fellowship at the University of Leiden. She was granted a Scatcherd European Scholarship to assist her on this trip to the Netherlands. She has received research and travel grants from several other funding bodies, including the British Society of the History of Science and the British Archaeological Association. Ellen was awarded the 2023 Jane Willis Kirkaldy Senior Prize, which recognises outstanding essays in the history of science, medicine, and technology, for her essay 'Prima Materia Lapidis: A Late Medieval Alchemical Scroll and its Early Modern Reception'.



Ellen with Ripley Scroll manuscript from the Bodleian Libraries

SHAC grant for participation in 14ICHC – **Jennifer Dobson**

In June 2025, I received financial support from SHAC to participate in the 14ICHC in Valencia, for which I am very grateful. The experience overall was highly enriching and stimulating for my PhD project, which focuses on the Chemical Revolution from the perspective of Translation Studies.

The conference began with a guided tour of Valencia with an emphasis on its scientific history. The relevance of the theme of the conference, Chemistry and Capitalism, was evident even in this tour, which highlighted links between chemistry and trade, be that of pigments or pesticides, and the establishment of a municipal laboratory as a response to the cholera crisis.

In general, the conference theme provided a basis for important reflections on the relationship between economics and chemical research. This was addressed directly in the keynote lecture given by Prof. David Edgerton, who highlighted our need as history of chemistry scholars to recognise the capitalist nature of production, to look beyond university research, and to set our own intellectual agenda, rather than being limited by the ideology of science today, as well as to include (oft-neglected) chemistry in the history of science.

SHAC project reports

The opening session of the conference, designed for early career researchers, provided a very helpful overview of the different networks, institutions and publications available within the field of History of Chemistry.

The conference was attended by over 100 participants, providing a rich variety of interventions and stimulating discussions. Particularly relevant to my work on translation in the Chemical Revolution was the intervention by Dr Francesca Antonelli, who discussed the economic situation of the Paulze and Lavoisier families (key players in the Chemical Revolution), Lavoisier's role as Fermier Général and Marie-Anne Paulze Lavoisier's role in managing the *registres de laboratoire*. The panel entitled *Chemical Industry Transformed: Knowledge, Labour, and Professions in the long Eighteenth-Century* was also highly relevant to my research, bringing to the fore the multiplicity of chemistry-related professions in Paris during this period (papers by Prof. Marco Beretta and Dr. Bérangère Pinaud) and demonstrating how the epistemic shift between sensory and analytical chemistry was operated by Scheele (Prof. Hjalmar Fors).

The many other interventions demonstrated the importance of research into the History of Chemistry and the breadth and depth of unexplored territory.

I would like to sincerely thank all the participants and SHAC for their financial support.

SHAC grant for participation in 14ICHC – **Christopher Halm**

Enjoying the international community of historians of chemistry, I attended the 14th International Conference on the History of Chemistry (ICHC14), held in Valencia from 11 – 14 June 2025, with the support of the SHAC award.

I presented the paper "Cultivating Earth, Sustaining the Moon – Bridging Two Epochs of Chemistry and Material Narratives" in the panel "Public Image of Chemistry and Historical Narratives." The paper explored how the chemical redefinition of soil in the late eighteenth and early nineteenth centuries intersects with twentieth- and twenty-first-century approaches to lunar regolith. By juxtaposing early agricultural chemistry with the material practices of Moon rock analysis, I argued that chemistry functions not only as a discipline of measurement and transformation but also as a cultural force, shaping narratives of control, precision, and prospective habitation.

In addition to my research presentation, I initiated and chaired the first Early Career Scholar Session (ECSS), co-organised with Silvia Pérez Criado and Sofiya Kamalova. This new format was designed to connect early career researchers with established members of the history of chemistry community, fostering dialogue across generations and increasing the field's visibility. The session featured concise presentations from leading societies, journals, and institutions – including SHAC, CHCMS, the Science History Institute, *Ambix*, and *ChemTexts* – followed by a brief discussion and informal networking. The high attendance and favourable feedback suggest that the ECSS is well positioned to continue and develop further at the next conference in Bologna in 2027.

ICHC14 offered an intellectually rewarding environment, supporting focused discussions and renewed collaborations within the international history of chemistry network. The experience both advanced my research and strengthened my connections within the scholarly community. I am deeply grateful to SHAC for its support, which enabled my active contribution to the conference.

Welcome reception

SHAC grant for participation in 14ICHC – **Silvia Pérez Criado**

Thanks to the generous support of the Society for the History of Alchemy and Chemistry (SHAC), I was able to attend the 14th International Conference on the History of Chemistry (ICHC), held in Valencia from 11 to 14 June 2025. The award enabled me to participate in the conference in multiple, complementary roles—academic, organisational, and institutional.

I organised the thematic panel *"20th Century Pesticides Chemical Industry"*, which was also kindly sponsored by SHAC. The session brought together four scholars—Frederick Rowe Davis (Purdue University), Anne Jorunn Frøyen (Jærmuseet), David Beorlegui Zarranz (Distance University of Madrid), and myself—working on the history of pesticides, industrial chemistry, and environmental risk. Contributions focused on case studies from Spain, Norway, and the United States, analysing how narratives of scientific progress, regulatory structures, and corporate interests shaped the production and public perception of chemical pesticides under different political regimes and in various geographical contexts. My own presentation, *"Pesticides and Franco Dictatorship: Building Spain's Chemical Industry"*, explored the co-production of authoritarian politics and agrochemical development in mid-20th-century Spain. The panel was chaired by José Ramón Bertomeu Sánchez (University of Valencia).

In addition, I co-organised the *Early Career Scholar Session* (ECSS), together with Christopher Halm and Sofiya Kamalova. This new initiative—held for the first time at ICHC—provided a dedicated space for early career researchers to engage with journals, societies, and funding opportunities relevant to the field, including SHAC and *Ambix*. The session fostered intergenerational dialogue and offered practical resources to support the professional development of emerging scholars.

Beyond these two core activities, I also served as a member of the local organising committee of ICHC 2025, assisting with planning and logistics both before and during the conference. Moreover, in my capacity as Secretary of the Division for the History of Chemistry (DHC) of the European Chemical Society (EuChemS), I took part in the DHC Business Meeting, where I recorded the minutes and contributed to the coordination of future divisional initiatives.

Thanks to SHAC's support, I was able to contribute meaningfully to the intellectual programme, professional development opportunities, and institutional infrastructure of the ICHC. I am sincerely grateful for this opportunity, which strengthened my research, expanded my academic network, and deepened my commitment to community-building within the history of chemistry.

SHAC grant for participation in 14ICHC – **Umberto Veronesi**

As an archaeologist and heritage scientist with a strong academic interest in alchemical practices, I often collaborate with historians of science and chemistry, and I strive to disseminate my research among them. The SHAC award allowed me to take part in the 14th International Conference on the History of Chemistry, which was held in Valencia between 11-14 June 2025. This year's was in fact my second ICHC conference, after the successful participation in Vilnius two years ago. My talk "The glass industry at colonial Jamestown (Virginia): a capitalistic dream that never came true", discussed my latest work on the analysis of glass-related remains from the early Jamestown settlement, between 1607 and 1610, when the English colonists attempted at establishing glassworks at the site. The paper well exemplifies the type of research I carry out, which combines archaeology and the history of science by using the analysis of material culture to address questions related to the creation and modification of knowledge in the pre-modern world.

The talk was very well-received but, more importantly, taking part in this event allowed me to both reinforce existing connections and create new synergies with international scholars at different levels and from numerous institutions around the world. Importantly, I also had the chance to meet people from Portugal, where I am currently based, share ideas with them and make room for upcoming collaborations at a national level. In this sense, I believe that my participation in the 14ICHC conference will lead to further exchanges and shared work and I am therefore extremely grateful to SHAC for giving me the chance to make my trip possible.

SHAC grant for participation in 14ICHC – **Brian Li**

I was able to attend the 14ICHC in Valencia thanks to a generous Special 14ICHC Award from SHAC. My poster, "Industrializing the Academy: Chemistry, Commodification, and the Early Modern Glass Delusion," examined the socioeconomic context of a bizarre mental condition in which early modern scholars believed themselves to be made of glass. This was an extension of an undergraduate research project undertaken with Eileen Reeves of Princeton University, who introduced me to my current interest in early modern history of science.

During the poster session, my work was joined by a diverse series of other presentations ranging from early environmental chemistry at the University of Coimbra (Pedro J. E. Casaleiro et al.) and the history of steroids (Ivana Kuzminac). The poster session went smoothly, and during the conference's welcome reception, I was able to field questions and comments that I hope to incorporate into my manuscript on the glass delusion, which is currently under revision. I was inspired by the work of historians with an interest in reconstruction and the considerable number of colleagues present trained in physical chemistry and materials science. Their insights were especially valuable, and indeed the eclectic academic backgrounds of many of my fellow attendees made for stimulating conversations and new perspectives.

The highlight of my time in Valencia, however, was the opportunity to network and engage with scholars from across the world. As an early modernist, I work in a somewhat smaller subfield within the history of science. Conferences are therefore an exceedingly important venue for networking, sharing work, and building collaborations—I have been fortunate to acquaint myself with several future collaborators during 14ICHC. As an American, I have found that our domestic conference circuit can be fairly insular; I have therefore been very eager to meet researchers from beyond the US during my time in the UK as a master's student. I had the pleasure of meeting new and established scholars alike, particularly Frank James, whom I hope to meet again at a

at a SHAC conference in Philadelphia in October, and Christian Schnurr, a PhD student at the University of Augsburg with whom I hope to collaborate on a paper. I would be remiss not to mention that research in the history of science, technology, and medicine—and the humanities and social sciences more broadly—will face an increasingly hostile political milieu in the coming years in my home country. For American historians of science, building connections and solidarity with global researchers is of tremendous importance during this trying time, and my time at 14ICHC did just that.

My conference experience would also not have been possible without the wonderful hospitality of the organizers and student assistants, especially Ignacio Suay-Matallana and Tiago Gomes. SHAC's award enabled me to participate in lively scholarly exchanges and build meaningful new connections, all of which took place against the backdrop of Valencia's stunning old town. I am deeply thankful to SHAC for having provided me with a grant to attend 14ICHC, and I look forward to continuing my involvement with SHAC in the future.

SHAC grant for participation in 14ICHC – **Lorenzo Francisci**

Delighted to have participated as a speaker at the ICHC14 (14th International Conference on the History of Chemistry), held in Valencia (Spain) from June 11 to 14, thanks to the generous grant offered by the SHAC (Society for the History of Alchemy and Chemistry).

The conference, organized by the López Piñero Inter-University Institute (University of Valencia) in collaboration with EuChemS (European Chemical Society – Division of the History of Chemistry), was an outstanding opportunity for interdisciplinary exchange.

My sincere thanks and congratulations to Annette Lykknes (EuChemS – Division of the History of Chemistry), Brigitte Van Tiggelen (Science History Institute, Philadelphia), and Ignacio Suay-Matallana (University of Valencia) for the excellent organization.

It was an inspiring experience, particularly thanks to two keynote lectures: Carsten Reinhardt (University of Bielefeld) on scientific research in Nazi Germany; David Edgerton (King's College London) on the relationship between chemistry and capitalism, which was the core theme of the conference.

In my presentation, titled, "A Comparative Global Case Study of the Global Transfer of Chemical Technology: The Development of the Nitrogen Industry in Italy and Japan Before and After the First World War", I analyzed and compared two very different industrial trajectories:

- Japan, where the strong coordination between the state, industrialists such as Shitagau Noguchi, and research institutions led to the creation of a powerful national chemical industry;

- Italy, where institutional fragmentation and the failure to leverage domestic innovations – such as the Casale process and the Fauser process for ammonia synthesis – hindered coherent industrial modernization.

The event also provided an excellent opportunity for international networking with historians of chemistry, industrial chemists, and researchers from around the world.

In the coming months, I will collaborate with several colleagues met during the conference on scientific publications exploring the history of the nitrogen industry – especially the Casale process – in different national contexts (Spain, Egypt, and the former USSR), under the expert guidance of my dear friend and mentor, Prof. Anthony S. Travis (Sidney M. Edelstein Center for the History and Philosophy of Science, Technology and Medicine – University of Jerusalem), one of the world's leading experts on the topic.

Thanks once again to SHAC for aiding me in advancing my academic career on this crucial occasion.

SHAC grant for participation in 14ICHC – **Elisabeth Moreau**

The 14th International Conference on the History of Chemistry took place in Valencia (Spain), from Wednesday 11 to Saturday 14 June 2025, with the last day dedicated to an excursion to the historical surroundings of the city. Hosted by the Lopez Piñero Inter-University Institute at the University of Valencia, the event centred around the theme of capitalism, specifically the relationship between chemistry, broadly construed, industry, environment, and regulations from a historical perspective. Before its official kick-off, the conference held an Early Career Scholar session, animated by Christopher Halm (German Museum, Munich). During this session, the representatives of SHAC, the Lopez Piñero Inter-University Institute, IUPHST / DHST (including the Commission on the History of Chemistry and Molecular Science), Science History Institute, and GDCh – German Chemical Society presented funding and research opportunities for postgraduate students and early career researchers. Along with SHAC academic journal *Ambix*, several journals and publication platforms on the history of chemistry and the sciences were showcased, such as *ChemTexts* (Springer), *Centaurus* (Brepols), and *Jargonium* academic blog.

The conference was introduced by a Welcome session from the ICHC organising committee members from EuChemS – European Chemistry Society, including Annette Lykknes (Norwegian University of Science and Technology), Brigitte Van Tiggelen (Science History Institute), and Ignacio Suay-Matallana (University of Valencia). Over the three days of the conference, a series of inspiring keynote lectures nurtured the conference theme. On the first day, Francesca Antonelli (University of Valencia) presented a lecture on eighteenth-century pre-capitalist interest in chemistry in the case of Lavoisier, with a close attention to his economic ties with the Paulze family and his professional activities in the tobacco industry. On the second day, David Edgerton (King's College London) discussed the relationship between chemistry and the lesser-known context of the industrial revolution for the production of oil, photography and war weapons, among other chemicals, from a global viewpoint. On the third day, Angela Creager (Princeton University) gave a thought-provoking lecture on environmental regulation and the trade of toxic industrial substances through 'chemical passports' and online data summaries in US and European institutions.

In addition to the plenary lectures, the event hosted a series of panels on the history of alchemy and chemistry from ancient times to the contemporary period, across various regions of the globe. Among them, a roundtable sponsored by the event and animated by Georgiana Hedesan (Oxford University) explored experimental and digital trends, including computational methods applied to EMLAP and Reaxys data resources, as well as the historical reconstruction of phlogiston, charcoal furnace, and alchemical materials. The last day of the conference featured the prizegiving ceremony of the SHAC Morris Award for Outstanding Achievement in the History of Chemistry, awarded to Carsten Reinhardt (University of Bielefeld). The awardee delivered a lecture on German executive science during the Nazi period, from 1933 to 1945, as a form of capitalism headed by the state government and articulated through industry, academia, and agencies. This talk was followed by a closing session, which comprised an engaging musical moment led by the ICHC organising committee.

Conference opening

SHAC dinner

Project report – **Sergei Zotov**

The SHAC research award enabled my highly productive visit to the St. Gallen Kantonsbibliothek, where I consulted a significant group of alchemical manuscripts from the Vadiana collection. My work focused on MSS VadSlg 300, 390, 391, 394a, 394b, 395b, 397, 407, 408, 409, and 428. These manuscripts represent a rich corpus of alchemical texts and illustrations from the fifteenth and sixteenth centuries, many of which are central to my current and forthcoming research projects.

One of the key outcomes of this visit was the opportunity to examine what appears to be the earliest known version of the *Rosarium philosophorum*. I conducted a detailed paleographical analysis of this manuscript, which allowed me to propose a revised dating following the assessment by Manuel Bachmann and Thomas Hofmeier. This revised chronology might be of considerable significance for the textual and visual history of the *Rosarium*, a foundational treatise for the European alchemical image tradition.

In addition, I discovered another previously unknown version of the *Rosarium* preserved in this collection, which I previously have not seen. Its textual and iconographic variants promise to contribute valuable new material to the evolving map of *Rosarium* transmissions across Europe.

The Vadiana holdings also include two important versions of the *Buch der heiligen Dreifaltigkeit*, one also fully illustrated, which will be essential for my forthcoming monograph on alchemical iconography. These versions provide unique visual and textual interpolations not found in other known witnesses of this treatise, and help illuminate its theological and symbolic developments in the sixteenth century.

Finally, I studied two additional illustrated manuscripts that have been largely overlooked in recent scholarship. These documents are particularly important for their inclusion of rare fifteenth-century iconography, including an exceptional tricephalic Christ motif, which holds strong relevance for the study of visual allegory of alchemical and theological thought.

I am especially grateful to Theres Flury, whose assistance in the archive made this research possible. Her support in locating materials and navigating the Kantonsbibliothek's manuscript collections was both generous and efficient.

The materials consulted during this visit will form a key part of both my current publication efforts and long-term projects. The visit to St. Gallen has not only deepened my understanding of the transmission and reinterpretation of alchemical imagery but also uncovered several previously undocumented textual witnesses. I am thankful to SHAC for supporting this work, which has greatly enriched the scope and scholarly foundation of my research.

Project report – **Ellen Hausner**

I am a second-year doctoral student in the History of Science, Medicine, and Technology Department at the University of Oxford, and was given a SHAC research award to help enable me to go to Italy for two weeks. The incentive was to attend a conference called 'Visita Interiora: Reimagining Allegory in Alchemical Tradition,' which took place 16-17 June 2025 at the University of Warwick's Venice Centre, through Warwick's Institute of Advanced Studies. I then stayed in Italy to undertake research in four libraries in Venice and Florence.

My doctoral project explores the evolution of notations and signs, known in the period as 'characters,' as a method for transmitting knowledge within European alchemical texts in the period c. 1400-1700. As my project is on the subject of late medieval and early modern alchemical imagery, especially the methods and reasons that figuration gave way to abstract imagery, the Venice conference

conference precisely addressed some of my chief concerns. I was given the opportunity to present the latest chapter of my thesis and received helpful feedback from some of the experts in the field. I also heard some of the most recent findings by both eminent scholars and early career researchers within the subject.

After the conference, I stayed in Venice to undertake research at the Biblioteca Marciana. The library houses an 11th-century manuscript from Byzantium which contains the earliest extant example of a full range of alchemical characters used within a text. It was a privilege to be able to consult it in person. The following week I travelled to Florence, where I conducted research in the Biblioteca Laurenziana, the Biblioteca Nazionale Centrale Firenze, and the Biblioteca Riccardiana. Altogether I viewed 80 manuscripts during my two weeks in Italy.

I examined all of these manuscripts in a large sweep to find any evidence of alchemical characters in texts from the medieval period through to 1700.

My research for the past two years has shown that a wide range of alchemical characters (beyond the seven metals) began in the sixteenth century and became pervasive in texts from England and probably Germany. Being in Italy gave me the opportunity to investigate whether alchemical characters were also used south of the Alps. From the limited number of manuscripts I managed to see, it is quite clear that alchemical characters were not as common in Italy during the early modern period as the other countries mentioned. The medieval manuscripts, however, used a rich variety of characters to represent the seven metals, indicating a growing interest in abstract notations as a method of communication. My most exciting find was a 15th-century Greek alchemical text, housed at the Biblioteca Laurenziana, which employed a full range of characters. This provides evidence that the use of alchemical characters continued within the Greek tradition, even as it was ignored in the Latin world.

The trip to Italy was vital for my research, my networks, and my development, and I am most grateful for the award from SHAC which helped make it possible.

A note from the editor: *due to an error, two reports by Christopher Halm have been accidentally excluded from previous issues of this newsletter. They have been included here, in full, for the SHAC community to enjoy, with due apologies for the delay.*

Project report – **Christopher Halm**

How lucky can a journey to an archive and a conference start? Setting off to Ireland, I was grateful for being endowed with a SHAC award. I like to take the opportunity of this report to thank Rebecca Martin and Rob Johnstone. They were very keen on providing answers to my questions. And they were always courteous and patient with me.

Having arrived in Dublin, I was joyful proceeding with my newest research: moon rocks in labs and museums – the value of their past. This project deals with the changing public perception and the developing impact of moon rocks on understanding over time.

The trip was meant to do archival research in the National Archives of Ireland, the Dublin City Archive, and the National Museum of Ireland. I am happy to have visited all three of them and that the outcome of my on-site work gave my project a more vital international angle.

To my great surprise, as I entered the lift of the National Archives on my very first day, I was welcomed by a framed picture of one of the main sources I was looking for: A covering letter of US President Richard Nixon to Erskine H. Childers, President of Ireland in 1973, concerning a gift of a moon rock fragment gathered during the Apollo 17 mission (photographer: Ch. Halm; National Archives of Ireland, 19 July 2022). Has a former me been here before?

I used some of my archival findings rightly afterwards in a work-in-progress style paper at BSHS' 2022 conference in Belfast (Panel 6D, Public History of Science 3, 22 July 2022). I like to thank Sam Robinson (University of Southampton) and the organising team, in particular, for realising this conference as an in-person event. For early career scholars, the direct and partly informal exchange is crucial and can hardly be replaced by online meetings. I am glad to have met, among others, Tim Boon (Science Museum London), Daniella McCahey (Texas Tech University) and Alexis Rider (University of Pennsylvania). Their input to my presentation significantly enhanced my research. (2022)

Project report – **Christopher Halm**

The SHAC grant supported my participation in the 13th International Conference on the History of Chemistry in Vilnius (2023), which, in my case, was a busy event.

Due to some last-day changes, I found myself giving two papers on the first conference day. I gave a work-in-progress report on my latest research project dealing with "Moon Rocks And Their Technocultural Global History". In the related paper, I focused on the history of moon rocks in West German museums and research institutions, particularly the Deutsches Museum Munich, the Senckenberg Museum Frankfurt, and the Max-Planck-Institute Mainz. Additionally, I summarised Stefanie van de Kerkhof's lecture on "The Innovation Process of Technical Textiles in the Rhenish Textile Industry". Unfortunately, Stefanie had to cancel her attendance, but she kindly shared her manuscript and slides with the panelists.

I used the following days to inquire about interests and ideas for an early-career session at the next ICHC conference. Annette Lykknes, chair of our working group under EuChemS, and I discussed this before the conference. We planned to induct me as a board member focussing on the needs of our young scholars in our field. Being elected as an extended board member worked out on the last day of the conference, which can be considered a great success.

Finally, I contributed as a selected speaker to the 'Conversations on the History of Chemistry' roundtable hosted by the Commission on the History of Chemistry and the Molecular Sciences.

I was delighted to meet many familiar and new faces at this conference. And I am more than happy to have reconnected in person with our lively specialist group on the history of chemistry. I am looking forward to our meetings in preparation for the next ICHC conference. (2023)

Book reviews for *Ambix*

Book reviews are an important part of *Ambix* and of our scholarly community. Please feel free to contact joint book reviews editors Sarah Hijmans and Tillmann Taape (bookreviews@ambix.org) with any books that you would like to see reviewed, that you would like to review yourself, or simply to register your interest in reviewing books for *Ambix*, with a note of your preferred topic areas.

Special Issue:

Constructing Naturalness in Industrial Settings: A Transdisciplinary Exploration

Guest edited by Paulina S. Gennermann, Gina Maria Klein and Sophia Wagemann.
Vol. 72, issue 1, February 2025

ISIS

Vol. 72, issue 2, May 2025

Ambix Edited Collection:

Commemorating the 90th Anniversary of the Society for the History of Alchemy and Chemistry

In 2025 the Society for the History of Alchemy and Chemistry will be ninety years old! The Society was first established in November 1935 by James Riddick Partington (1886-1965), Frank Sherwood Taylor (1897-1956), Douglas McKie (1896-1967), and Gerard Heym (1888-1972), and named the Society for the Study of Alchemy and Early Chemistry. Partington was its first Chairman and Sherwood Taylor was responsible for launching the Society's journal *Ambix* in May 1937. From these early days, the Society worked on chemistry and chemical technology in antiquity and the Latin West and the development of iatrochemistry and chemical philosophy. Shortly before the outbreak of the Second World War, the Society for the History of Alchemy and Early Chemistry wound up its activities, but it was re-established in 1946, with the second volume of *Ambix* published in the same year, with articles by Dorothea Waley Singer (1882-1964) and Carl Gustav Jung (1875-1961). The Society's early history is chronicled in William H. Brock's article "Exploring Modern Chymistry: The First 25 Years of the Society for the Study of Alchemy and Early Modern Chemistry". In 1975 the Society changed its name to the Society for the History of Alchemy and Chemistry (SHAC).

From when Desmond Geoghegan (1902-1973) became editor, *Ambix* began to extend its readership and its period of historical coverage to the time of John Dalton (1766-1844) and the nineteenth century. In June 1967, the first papers on nineteenth-century chemistry were published, one of which was William H. Brock's (1936-2025)

first paper in *Ambix* "The London Chemical Society 1824". The following year Geoghegan resigned as editor and Bill, as he was always known, was parachuted into the role. As a member for fifty-eight years, fifty of which were on Council, and serving as Chair, Editor and Book Reviews Editor of *Ambix*, Bill's inspiring leadership, wisdom and generosity guided the Society for more than half of its existence.

Various editors of *Ambix* have contributed favourite or defining papers to this collection, which showcases aspects of the breadth of scholarship supported and promoted by the Society over ninety years and is edited by Meg Piorko. Bill Brock published extensively in *Ambix* and his last paper in the journal, on the chemists Robert Warington (1807-1867) and Heinrich Will (1812-1890), jointly written with Anna Simmons, is included in this article collection. All articles in the collection are available open access during SHAC's anniversary year.

https://www.tandfonline.com/journals/yamb20/collections/knowledge-in-the-making

Forthcoming Special Issue of *Ambix* – August and November 2025 Double Issue

The next issue of *Ambix* to be published will be a special double issue covering August and November 2025. It will explore the nature and agency of fire and its role in human interaction with the material world by focusing on premodern heat technologies. It takes a wide comparative (though by no means comprehensive) view of different practices, including metalwork and distillation, with an emphasis on early modern Europe and pre-Hispanic South America. This perspective emerged from interdisciplinary conversations of the Active Matter Working Group (activemattergroup.org), and in particular from the hands-on reconstruction workshop on "Fire Arts" undertaken at Texas A&M University. The simultaneity of several projects and the fruitful juxtaposition of techniques and contexts prompts questions not only about human engagement with the material world, but also fundamentally about conceptions and agencies of fire itself. In this special issue, we take these impulses as a starting point for re-assessing familiar as well as new sources on working with fire, from the published writings of artisans and philosophers to archaeological evidence.

The case studies include the pre-Hispanic Andean clay furnace known as a *guaira*, smelting techniques from Qing China, the theories and practices behind European furnace designs, the metalwork technique known as granulation, enamelling techniques, and distillation. We explore how the technical workings of fire technologies mesh with intellectual, aesthetic, sensory, and social implications – for example, how working a furnace affected practitioners' physical and mental health, and how the collective practice of working a *guaira* was imbued with ritual and cosmological significance. Our aim is to highlight and characterise the wide range of different techniques, from fixed to moveable assemblages and from the high heat required for metalwork to low-heat technologies such as distillation. In each case, we ask how these assemblages helped people to understand, emulate, and manipulate natural materials and processes. Overall, the special issue thus aims to recover premodern ideas about fire and its agency in the material world, as well as techniques and practices lost to "obsolescence" or colonial erasure.

Members will be updated on the likely publication date later in the year, but the issue is timed for the November slot, not August.

Membership

The Society for the History of Alchemy and Chemistry has a longstanding tradition in the field, organising colloquia, publications and promoting the interdisciplinary study of the history of alchemy and chemistry from its early beginnings to the present. The Society offers support to its members, including an award scheme, regular meetings and events, graduate network, and the triennial Partington prize for original academic writing on any aspect of the history of alchemy and chemistry. It offers a forum for advertising forthcoming events, both within the United Kingdom and internationally, and its website provides a portal to resources relating to the history of alchemy and chemistry. Members receive the Society's journal *Ambix*, the leading scholarly journal in the field of history of alchemy and chemistry. *Ambix* is published by Taylor & Francis and appears quarterly. Members also receive the Society's newsletter, *Chemical Intelligence*, twice yearly, and any new editions from the Sources of Alchemy and Chemistry volume.

Application forms and membership information may be found on the Society's website, http:// www.ambix.org/, under 'Membership'. For all membership questions, please contact the Membership Secretary, Dr. Carolyn Cobbold: cacobbold@gmail.com.

Contribute to *Chemical Intelligence*

We welcome any contributions that newsletter readers might wish to make to *Chemical Intelligence.* This includes, but is not limited to:

- Publications
- Upcoming Conferences or Meetings
- Conference or Meeting Reports (these should not normally exceed 1,000 words)
- News Items or Announcements
- Grants, Fellowships or Awards
- Reviews of Websites, projects or blogs of interest (up to 500 words)

The Editor retains the right to select those contributions that are most relevant to the interests of the Society's members. We also wish *Chemical Intelligence* to provide a platform for interaction between members. We therefore encourage you to submit:

- Questions you may wish to put to other members
- Materials that you are working on and wish to share
- Suggestions for improvement

For any queries regarding the content of *Chemical Intelligence,* or to propose material for inclusion in future issues, please contact the editor, Dr. Karoliina Pulkkinen: karoliina.pulkkinen@helsinki.fi