




**DARWIN COLLEGE**  
CAMBRIDGE



Research Highlights  
2024-25



From Lunchtime Seminars to casual conversations, one of the joys of life at Darwin is in the continual exposure to an extraordinary diversity of research interests, specialisms and ways of looking at the world.

This new publication aims to reflect that, by bringing together a snapshot of some of the work of Darwinian Fellows and researchers over the past year.

From Emeritus Fellows continuing to build on a lifetime's contribution, to early-career academics making their mark, Darwinians are expanding humanity's knowledge and understanding in every possible direction. Thank you to everyone who has allowed us to share their updates.



**Dr Kofi Adjepong-Boateng CBE**  
Bye Fellow  
Associate Director, Centre for Financial History

Kofi published an article on an aspect of the monetary history of the Ashanti Kingdom, analysing certain features of the early trans-Saharan trade between Arabs and West Africans. War, Finance and Monetary Reform in Ashanti, 1807-1935 appeared in *African Economic History*. He credits Darwin Fellow Dr Paul Anderson, and Professor David J. Wasserstein of Vanderbilt University with their assistance in the interpretation of several Arabic words and insights into explanations provided by early Jewish and Islamic grammarians and lexicographers.

Kofi is now working on the early history of currencies in Sierra Leone, following the founding of Freetown. Sierra Leone stands in contrast to Ashanti - while the latter had a strict monetary regime overseen by a royal court, Sierra Leone had a wide range of competing currencies, some of which were introduced by British Abolitionists turned merchants. The research for this article is being supported by a grant from The Japan Society for the Promotion of Science, arranged by Kanazawa University.



**Dr Paul Anderson**  
Fellow  
Associate Professor of Middle East Studies  
Assistant Director, Centre of Islamic Studies

Paul co-edited a collection of essays (*Recalibrating Syria*) on how anthropologists are engaging with the end of the Asad regime in Syria. He also finished a co-authored monograph entitled *Afterlives of Urban Cosmopolitanism: Muslim Asia and its non-Muslim Diasporas*. The book is an in-depth ethnographic study of inter-religious and inter-ethnic relations and cultures of coexistence rooted in the historic cities of Aleppo, Kabul, Herat, Bukhara, Samarkand, and Tashkent. These have historically been home to sizable communities of ethno-religious minorities—including Jews, Armenians, Sikhs, and Hindus. Yet, much scholarship has argued that large-scale migrations over the past century, of minorities and Muslims, has led to a loss of their cosmopolitan heritage.

The book challenges one-dimensional understandings of Muslim/non-Muslim relationships, as being antagonistic, transient, or superficial and purely instrumental in character. It shows that non-Muslims played critical roles in these cities through the 20th century, and coexistence remained an important element of urban people's social relations, identities, and aspirations both before and after mass emigration. The need to record this heritage has become particularly urgent as increasingly rigid sectarian boundaries, resulting from geopolitical conflicts in Syria, Afghanistan and Central Asia, have endangered cultural memories of inter-religious and inter-ethnic intimacies in these historic regions.





### Professor Sara Baker

Fellow  
Professor of Developmental  
Psychology and Education

Sara specialises in the science of learning. Her academic research aims to improve children’s lives by identifying factors at home and school that can support their agency over their own learning, in particular by developing their self-regulation skills. In 2024, two of her Cambridge PhD students took up postdoctoral positions in two different labs at Harvard’s Graduate School of Education, challenging the status quo on assessment of preschoolers’ self-regulation.

In collaboration with the Centre for Evidence and Implementation, Sara is leading a three-year grant from the Nuffield Foundation on raising the quality of provision in England’s early years settings, developing an evidence-based alternative to manualised interventions.

Sara currently consults for Cambridge University Press and Assessment on cognitive skills for lifelong learning, delivering a keynote address at their Schools Conference in the USA in June 2025. She is also the Cambridge academic lead for Close the Gap, a four-year collaboration with Oxford University, funded by the Office for Students and Research England. The Close the Gap Toolkit aims to lower access barriers in doctoral admissions processes for racially minoritised applicants, and will be publicly launched in Michaelmas by the Vice Chancellors of both Universities.

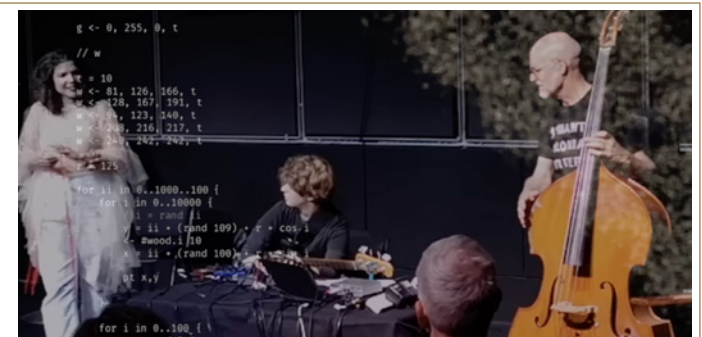


### Dr Annouchka Bayley

Fellow  
Associate Professor, Faculty of Education

- Annouchka published an article with performance research: *The Reverse Engineering of an Exorcism*, investigating the intra-sections of new materialisms and posthumanisms with decolonial issues for the contemporary university.
- Her forthcoming book, *Fieldnotes from the Edges of Higher Arts Education: Intra-active Pedagogies for Urgent Times* explores emergent practices in higher education pedagogy that use the arts, new materialisms, posthumanisms, and radical pedagogies to intra-actively reconfigure approaches to transdisciplinary learning and teaching.
- Annouchka’s novel, *The Blood Countess* has continued to receive international media attention.
- In collaboration with Darwin Fellow Professor Karishma Jain, Annouchka has launched [LEAPLab](#), a two year project at CRASSH. The Lab’s newest endeavour is a one day carnival in Camden, [Playground for Remaking Worlds](#) in partnership with the David Graeber Institute.
- She is also part of [Entangled Futures](#), a two-year project funded by HSS Framework looking at contemporary arts and philosophy. In 2025 she worked with the specific theme *mycelium*, screening the International Fungi Film Festival, and teamed up with the Fitzwilliam Museum to put on a day of workshops and events, including transforming the studio room at the Fitzwilliam into an interactive mycelial world.

Professor Alan Blackwell and Dr Annouchka Bayley form half of doom metal algo-collage improvisers Chainsaw Trousers, an interdisciplinary collaboration born at Darwin.





**Dr Munawar Chaudhri**  
Emeritus Fellow  
Cavendish Laboratory, Department of Physics

Munawar published a paper, *Hertzian fracture of a borosilicate glass at room temperature and at 77 K* in the *Journal of Non-Crystalline Solids*,

“Hertzian fracture tests on 10 mm thick plates of Borofloat® 33 glass (Schott, Germany) have been carried out at room temperature and at 77 K using smooth tungsten carbide (WC) spheres of radii 1, 1.5, 2, 2.5, 3, 3.57, and 4 mm as indenters. Cooling of the test samples down to 77 K has had a marked effect on the Hertzian fracture loads, which are up to at least five times higher than the corresponding loads determined at room temperature. It is suggested that this increase in the fracture loads occurs because at 77 K there is no static fatigue of the glass. Since most of the Hertzian fracture tests from 1880s to date have been carried out under ambient conditions involving static fatigue, the results obtained are flawed and conclusions drawn from them are unreliable. Our experimental results obtained from Hertzian fracture tests at 77 K are more reliable”.



**Dr Lakshmi Balasubramaniam**  
Postdoctoral Fellow  
Gurdon Institute

Lakshmi published a paper exploring the role physical forces such as the squeeze cells feel during cell death. *Force transmission is a master regulator of mechanical cell competition* appeared in *Nature Physics*.

Lakshmi attended the following conferences this year:

- The 100th anniversary of The Company of Biologists, Liverpool
- The Gordon Research Conference, “*Studying Cell-Matrix Adhesion at Diverse Scales*” held in Lucca, Italy
- The Cell Motility Club meeting, held in Cambridge, at which she was awarded the prize for best talk



**Professor Alan Blackwell**  
Fellow  
Professor of Interdisciplinary Design, Department of Computer Science

- In his book, *Moral Codes*, published in 2024, Alan argues that there is a fundamental flaw in the research agenda of AI, and that what humanity needs is better ways to tell computers what we want them to do. The book explores how to design software that is better—not more efficient or more profitable, but better for society and better for *all* people.
- In a collaboration with colleagues from English and Digital Humanities, Alan has investigated what many of us suspect, that the text extruded by products like ChatGPT is technically “bullsh\*t”. What’s more, he found that there are people who already write in the same way as ChatGPT - including politicians, leadership professionals, and others whose jobs David Graeber described as “bullsh\*t”, and George Orwell as “humbug”. *The BS-meter: A ChatGPT-Trained Instrument to Detect Sloppy Language-Games* was published by Cornell University.

- Alan has continued his work looking at AI from the perspective of other cultures, as reported in the Summer 2022 issue of the *Darwinian*. He has recently been contrasting work from his technical collaboration with Dr Hong Ge to traditional knowledge in the *Kalahari desert*, and has also worked with Māori and Pasifika philosophers in *Aotearoa New Zealand*.





**Professor Mark de Rond**  
Fellow  
Professor of Organisational  
Ethnography

Mark's book *Dark Justice: Inside the World of Paedophile Hunters* was published by Cambridge University Press in April 2025. It is based on four years of embedded fieldwork with one the UK's most prolific paedophile hunting teams.

The fieldwork also saw him collaborate on a new documentary by the American filmmaker David Osit. Called *Predators*, it premiered at Sundance in January 2025. Released in cinemas in the US in September, the film will be distributed in the UK in November, after which it should be available via the Paramount Plus streaming service.



**Professor John Cooper**  
Emeritus Fellow  
Emeritus Professor of  
Quantum Matter

Despite a six-year battle with blood cancer which has reduced his mobility, John continues his research focus on the experimental aspects of high temperature superconductivity in cuprate-based compounds.

*"The pairing mechanism responsible for superconductivity at such unexpectedly high temperatures is one of the outstanding open problems in the physics of condensed matter and there are also many practical applications,"* he explains.

John maintains productive collaborations with colleagues at Victoria University, Wellington, New Zealand; City University of New York; and the Institute of Low Temperature and Structural Research, Wroclaw, Poland; and has four papers currently in progress. Last year he published *Thermoelectric power of overdoped Ti2201 crystals: charge density waves and T1 and T2 resistivities* in the IOP Science Journal *Superconductor Science and Technology*.



**Professor Eric French**  
Fellow  
Montague Burton Professor of Labour Economics

Eric published the following papers:

- *Why Do Couples and Singles Save during Retirement? Household Heterogeneity and its Aggregate Implications* in the *Journal of Political Economy*
- Discussion of *Singles, Couples, Time-Averaging, and Taxation* in the *Journal of Monetary Economics*

He also contributed a chapter, *Long-term Care in England* to the book *Long Term Care Around the World*, edited by Jonathan Gruber and Kathleen McGarry and published by University of Chicago Press.

He gave seminars at:

- Barcelona Summer School;
- Pension Institute webinar;
- Rockwool Foundation Workshop, Berlin;
- Health and Economic Growth Workshop at London Business School;
- Long Term Care Conference, Paris;
- Keynes Fund Conference at Cambridge;
- City University of Hong Kong Microeconomics Conference;
- Wellbeing, Health, and Human Behaviour Conference, Warwick;
- Structural Health Economics Conference at Notre Dame.

Eric was also interviewed on the *Voice of Islam* podcast.





**Professor Christopher Cullen**  
Emeritus Fellow  
Emeritus Professor of East Asian Science, Technology and Medicine

Christopher is researching 17th century scientific contacts between China and Europe, particularly through the work of Jesuit missionaries specialising in astronomy, several of whom were given posts in the Chinese State Astronomical Bureau, (*Qintian jian* 钦天监). Having already published several articles on this topic, he is now collaborating on a book with Professor Catherine Jami of the French National Centre for Scientific Research (CNRS).

From September to December 2024 Christopher was an invited Taihe Fellow (*Taihe xuezhe* 太和学者) researching in the collections of the Beijing Palace Museum, (*Gugong bowuyuan* 故宫博物院), often called 'the Gugong', which consists of the whole of the former imperial palace.

"I was given office space in the buildings of the Palace of Tranquil Longevity (*Shou an gong* 寿安宫) - very suitable for an Emeritus Fellow," he says.

In the collections of the Gugong Christopher was able to inspect a number of objects of scientific interest, including the astronomical instruments presented to emperors for their personal use. These ranged from an elaborately graduated gilded sundial presented to the first emperor of the Qing (清) dynasty in 1644 by a Jesuit astronomer, to a large golden sphere of the heavens made for the Qianlong emperor in the 18th century.

During 2025, Christopher has given a number of reports on the results of his work in the Gugong, including at;

- the Needham Research Institute;
- the Annual Meeting of the British Society for the History of Science; and
- (remotely) at the 27th International Congress of History of Science and Technology held in Dunedin, New Zealand.

He plans to visit the Gugong once more in October as part of its 100th anniversary celebrations.



**Professor Emily Shuckburgh**  
Fellow  
Professor of Climate Science

Emily visited the Cairngorms National Park in September to meet project partners in the work she is engaged with as co-Director of the *Centre for Landscape Regeneration*. While there, she was able to observe some of the biodiversity related fieldwork being undertaken, including (pictured), assisting PhD student Ellie Kent with her work monitoring bats via a network of acoustic sensors.



Overall, the project is looking to help identify sustainable landscape solutions and is linked to a 200-year vision to expand and restore habitats.

The Institute of Computing for Climate Science, of which Emily is academic director, hosted its annual summer school in July in Cambridge. The week-long event brought together 57 participants from 18 different institutions in seven countries, including members of the Schmidt Sciences Virtual Earth System Research Institute. Training workshops covered a wide range of technical topics associated with state-of-the-art climate modelling, including using AI-assisted tools in software engineering, and everyone engaged in a full-day hackathon.



**Dr Aylwyn Scally**  
Fellow  
Associate Professor,  
Department of Genetics

Using advanced analysis based on full genome sequences, Aylwyn co-authored a study which received international attention for its finding that modern humans are the result of a genetic mixing event between two ancient populations that diverged around 1.5 million years ago.

About 300,000 years ago, these groups came back together, with one group contributing 80% of the genetic makeup of modern humans and the other contributing 20%. *A structured coalescent model reveals deep ancestral structure shared by all modern humans* was published by *Nature* in March 2025.

In May, Aylwyn published a further paper with collaborators from the Sanger Institute, demonstrating the dependence of new genetic mutations on ancestry and other factors such as smoking.

*The impact of ancestral, genetic, and environmental influences on germline DNM rates and spectra* was published in *Nature Communications*.

He also wrote about the impact of ancestry and ethnicity on cardiometabolic disease for the journal *Trends in Molecular Medicine*.

Aylwyn is a regular contributor to the podcast Naked Genetics, part of the Naked Scientists series. His recent interviews can be heard [here](#), [here](#) and [here](#).



**Dr Saffron East**  
Adrian Research Fellow  
Black and Asian British  
and Irish History

- 2024 saw the publication of Saffron's edited volume, *Anti-racism in Britain: Traditions, histories and trajectories, c.1880-present*. She launched and discussed the book at panel events in Edinburgh and Glasgow in the spring of 2025.
- In early 2025 she published newer research, conducted at Darwin. *The 'post-decolonial' moment? Radical pedagogies in UK Higher Education in historical perspective* appeared in *Educação, Sociedade & Culturas*.
- Saffron hosted a workshop, *Histories of racialised communities in Britain*, in Darwin in June. She is now working on editing a special issue of *Modern British History* to publish revised papers from the workshop.



**Dr Adrian Grounds**  
Emeritus Fellow  
Institute of Criminology

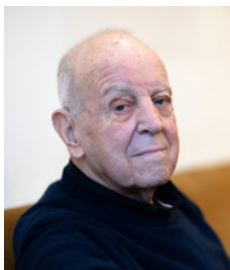
In April 2025, Adrian was awarded the Yochelson Visiting Professorship at Yale University. Granted annually by the Law and Psychiatry Division of the Department of Psychiatry at Yale School of Medicine, the Professorship enables distinguished scholars in forensic psychiatry to spend a week giving lectures and seminars in Yale and Connecticut.

During his time at Yale Adrian gave lectures and seminars on the psychological consequences of miscarriages of justice, on 'corruption of care' in psychiatric hospitals, and on his work as a Sentence Review Commissioner in Northern Ireland.



**Professor Philip Dawid**  
Emeritus Fellow  
Emeritus Professor of Statistics

- *A conversation with A. Philip Dawid*, based on an interview conducted by Vladimir Vovok and Glenn Shafer, was published in *Statistical Science*.
- Philip and collaborators across three different teams published a paper in *Law, Probability and Risk* on *A comparison of graphical methods using the case of the murder of Meredith Kercher as an example*.
- Philip was awarded the 2025 David R. Cox Foundations of Statistics Award by the American Statistical Association, and presented the David R. Cox Foundations of Statistics Award Lecture, entitled *A Lifetime of Irrelevance*, at the 2025 Joint Statistical Meeting.



**Professor Dean Hawkes**  
 Emeritus Fellow  
 Emeritus Professor of Architectural Design,  
 Cardiff University

Dean is working on his seventh book in a series on the environmental dimensions of architecture, published with Routledge since 1996, beginning with *The Environmental Tradition*. The new book, *The Environments of Houses: a Banquet of the Senses* is concerned specifically with domestic architecture and discusses a sequence of important houses built in Europe and America in the 20th century.

In October 2024, Dean was invited to give two public lectures:

- *Experiencing Light: the Human Senses as Research Method*, at the Royal Danish Academy of Arts, Copenhagen;
- and *Architecture and the English Climate*, at the Architectural Association, London.



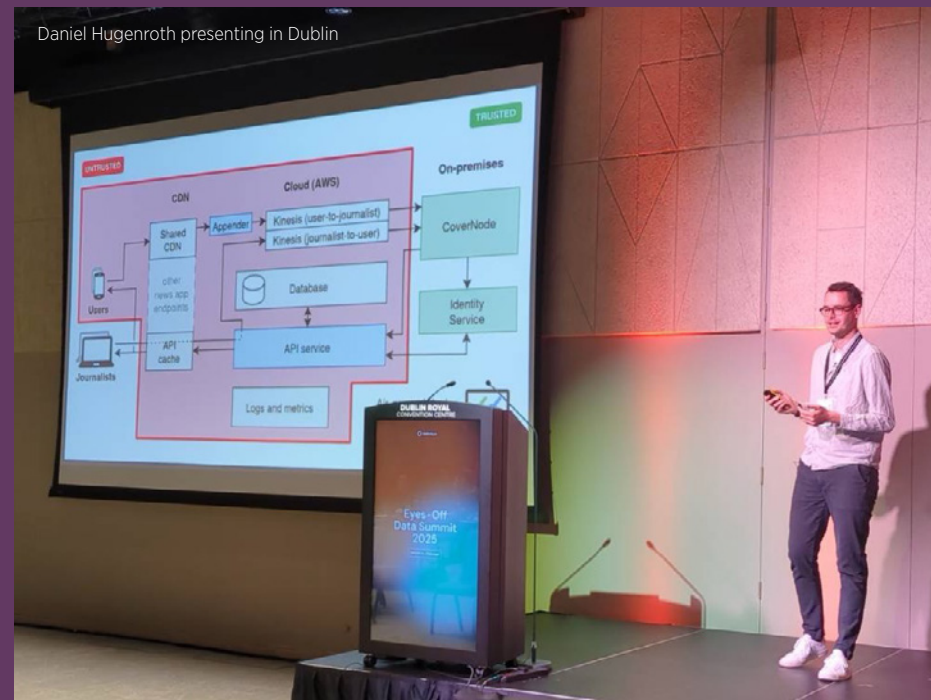
**Dr Daniel Hugenroth**  
 Research Associate  
 Department of Computer Science and Technology

There has been widespread media interest in anonymous messaging technology developed by Daniel, allowing whistleblowers to communicate with journalists more securely.

Daniel co-led the development of *CoverDrop*, which encrypts outgoing messages between the source and their named contact; provides digital 'dead drops' where messages are left for journalists to retrieve; and pads all messages to the same length, making it harder to distinguish real messages from decoy ones.

*The Guardian*, whose software engineers worked alongside the Cambridge researchers, has built on the technology to launch *Secure Messaging*, a module within its mobile news app. Although the *Guardian* helped to take the idea from prototype to reality, the technology will be fully available for use by other news organisations.

"All the *CoverDrop* code will be available online and open source," said Daniel. "This transparency is essential for security-critical software and allows others to audit and improve it. Open-sourcing the code also means that other news organisations, particularly those with expertise in investigative journalism, could also use it. We would be excited to see them do so."





**Dr Zahra Kazani**  
Research Associate  
Centre of Islamic Studies

**F**unded by the Connections-Collections-Communities (CCC), Zahra led the participatory research project *Botanical Wisdom: Art, Science, and Nature in Muslim Societies* from May–August 2025, exploring the rich narratives of plant life and their connections with the human experience in Muslim societies.



Beyond their place in the natural world, plants have long been central to healing practices, are imbued with symbolic meaning, and serve as a source of artistic inspiration in architectural decoration and portable objects.

Through the course of ten weeks, the participants were invited and introduced to the Islamic collections at the Fitzwilliam Museum, the Cambridge University Library, and the University Botanic Gardens and Herbarium. The research examined the roles of plants in Islamic art, their symbolic meanings in the Qur’an, plants in scientific manuscripts related to health and medicine, magical and occult properties of plants, as well as the role of gardens and botanical illustrations.

The overall aim of the project was:

- i) to critically consider historical worldviews, aesthetic practices, and knowledge production related to plants and the natural world; and
- ii) to engage Muslim community members in accessing knowledge related to their heritage, encouraging reflection, and inviting agency and creation.



**Dr Tiffany Ki**  
Henslow Research Fellow  
Department of Zoology

- Tiff has been awarded the Phyllis and Eileen Gibbs Travelling Research Fellowship (2025-26) at Newnham. Her research will build on her PhD, which focused on examining the butterflies of Sulawesi, Indonesia, using museum collections and the construction of a time series for three regions from 1857-2022; the longest tropical time series to date.

Her fieldwork will set up a systematic monitoring survey of eight sites in two of these regions on Sulawesi. This will build the foundation for the first true long-term biodiversity monitoring and research programme, where contemporary and future species and community responses to anthropogenic changes can be contextualised and evaluated with over a century of historical recording data.



- The paper examining 166 years of change has just been accepted for publication. *Little long-term change in regional species richness of tropical butterflies over the past 166 years masks turnover in community composition* will appear in the Royal Society’s biological sciences journal, *Proceedings of the Royal Society B*.
- Tiff has also been part of a successful grant application for the Esmée Fairbairn Communities and Collections Fund, where her project will increase access for audiences with limited opportunities to engage with museums and wildlife, and empower them to engage with social and climate crises.



**Professor Ioannis Kontoyiannis**  
Fellow  
Churchill Professor of Mathematics of Information

Every statistical procedure – from the simplest opinion poll to the most recent version of ChatGPT – is necessarily anchored in an underlying natural-philosophical principle. Although rarely made explicit, philosophical arguments are always there as the connecting tissue between the mathematics we do on paper and the real-world mechanisms that produce the data we study. A rare mathematical statement with immediate philosophical implications was a theorem proved in the 1930s by the Italian mathematician Bruno de Finetti. De Finetti's theorem forces us to admit that, whenever we examine data (i.e., a sequence of numbers) obtained in such a way that the order in which we observe them is irrelevant, we must be prepared to declare our *a priori* beliefs about some of the inherent statistical regularities that are present in the underlying data-generating mechanism.

In a series of four papers published over the past four years, Ioannis, together with former Darwin PhD student Lampros Gavalakis and their collaborators, has developed exciting modern versions of de Finetti's theorem that make it more readily applicable in practice. These new theorems not only provide a philosophical bridge between our *understanding* of the data and the data themselves, but they also give precise quantitative estimates on the amount of "information" we can learn through these observations.

1. O. Johnson, L. Gavalakis and I. Kontoyiannis. "Finite de Finetti bounds in relative entropy." To appear in *Information Theory, Probability and Statistical Learning: A Festschrift in Honor of Andrew Barron*, (J. Klusowski, I. Kontoyiannis and C. Rush, editors), Springer, 2025.
2. M. Berta, L. Gavalakis and I. Kontoyiannis. "A third information-theoretic approach to finite de Finetti theorems." *2024 IEEE International Symposium on Information Theory*, Athens, Greece, July 2024.
3. L. Gavalakis and I. Kontoyiannis. "Information in probability: Another information-theoretic proof of a finite de Finetti theorem." *In Mathematics Going Forward: Collected Mathematical Brushstrokes*, (J.-M. Morel, B. Teissier, editors), pp. 367-385, Lecture Notes in Mathematics series, vol. 2313, Springer, Switzerland, May 2023.
4. Gavalakis and I. Kontoyiannis. "An information-theoretic proof of a finite de Finetti theorem." *Electronic Communications in Probability*, 26, paper 68, pp. 1-5, December 2021.



**Dr Sebastian W. Krauss**  
Oppenheimer Research Fellow  
Department of Chemical  
Engineering and Biotechnology

- Sebastian published a paper in *Scientific Reports* on a new Lab-on-a-Chip device which traps hundreds of microdroplets and reversibly adjusts their size at high throughput using osmotic pressure. This enables precise control over molecular concentrations within the droplet and allows the direct study of phase separations and DNA denaturation in confined volumes. The platform opens new possibilities for biomimetic chemistry and may enable new applications for personalised medicine.
- He delivered talks at the DPG Spring Meeting in Regensburg, Germany and the Physics of Life Conference in Harrogate, UK, on how to functionalise cells with DNA linkers to enable targeted binding with programmable strength. These talks showcased how membrane dynamics and cell-cell interactions can be tuned, providing insights into interactions with pathogens like malaria parasites.
- Sebastian gave an invited talk at the Edwards Centre for Soft Matter and served as a panellist on the Early Career Panel at the Centre for Physical Biology, contributing to the interdisciplinary exchange across different departments and institutes.



## Professor Angelos Michaelides

Fellow  
1968 Professor of Chemistry

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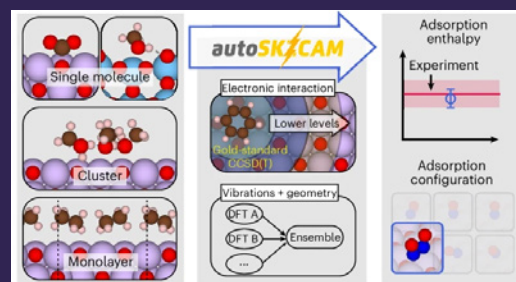
## Dr Benjamin Xu Shi

who completed his PhD at Darwin  
this year

Famously described by Nobel Laureate Wolfgang Pauli as “the work of the devil”, surfaces are challenging yet crucial systems to understand. They serve as catalysts within countless industrial processes vital towards chemical manufacturing as well as tackling the global climate crisis by enabling reactions that reduce greenhouse gases. Computational simulations have the potential to become essential tools in advancing our understanding of chemical processes which occur on surfaces, providing atomic-level insights that are challenging to obtain from experiments. However, it can be challenging to achieve sufficient accuracy to reliably reproduce experimental results from simulations - particularly for surfaces - limiting their usefulness.

In a paper published in *Nature Chemistry* titled *Accurate and efficient framework for modelling the surface chemistry of ionic materials*, Angelos and Benjamin describe a new computational framework designed to accurately model ionic surfaces, to the level of coupled cluster theory, the ‘gold-standard’ quantum-mechanical simulation method.

Importantly, this framework lowers the cost of applying coupled cluster theory sufficiently to enable routine application to a wide range of surfaces. This framework demonstrates unprecedented agreement with experimental observations for molecules adsorbed onto metal-oxide surfaces, systems used as solid catalysts and which underpin critical technologies such as electronics. With this framework, they have established a robust method for reliably screening and identifying new surface materials, thus fostering advancements across critical technological applications.



## Professor Sir Geoffrey Lloyd

Emeritus Fellow and former Master  
Emeritus Professor of Ancient Philosophy  
and Science

- The Portuguese language edition of Geoffrey’s book, written with Brazilian anthropologist Aparecida Vilaça, *Of Jaguars and Butterflies: Metalogues on issues in anthropology and philosophy\** (Berghahn, Oxford 2023) has been published by Todavia (Rio de Janeiro 2025).
- The original English edition has been the subject of a Book Symposium in *HAU: Journal of Ethnographic Theory* (vol 15.2) with reviews by prominent anthropologists, philosophers and historians and philosophers of science among others.
- The proceedings of the fourth interdisciplinary workshop “Science in the Forest, Science in the Past”, held under the auspices of the Needham Research Institute with the support of Darwin, will shortly be published in a new series created by Berghahn (Oxford) *Interdisciplinary Research in the Arts Sciences and Humanities* (IRASH).

The results of the three previous workshops involving several Darwin Fellows (Alan Blackwell, Serafina Cuomo, Arthur Harris, Nicholas Jardine, Martin Jones and Simon Schaffer) have all been published either in HAU or ISR or as books from University of Chicago Press and Routledge.



**Dr Debasmita Mukherjee**  
Postdoctoral Research Fellow  
CRUK Cambridge Institute

Debi joined the CRUK Cambridge Institute in September 2024 and in April 2025 was awarded the Marie Curie Postdoctoral Fellowship to dissect the malignant-fibroblast crosstalk in pancreatic cancer cachexia.

Her submitted abstract was selected as one of the 'Women in Cachexia awardees' at the Cancer Cachexia Society conference in September 2025 in Turin.



**Dr Duncan Needham**  
Dean and Senior Tutor  
Director, Centre for Financial History

Since completing a two-year project for an African central bank in 2024, Duncan has been focusing on impact work with *History and Policy*. This network of academic historians seeks to improve the public policy process by providing policymakers with historical evidence and analogues for current policy issues, and by encouraging historical modes of thought in Whitehall.

This involved presentations on the UK National Debt and public policy at HM Treasury, the Foreign, Commonwealth & Development Office and the Blavatnik School of Government at Oxford, with further presentations scheduled at the Debt Management Office in late 2025 and at the Leibniz Centre for Contemporary History in Potsdam in early 2026. He presented some of this work at the World Economic History Conference in Sweden in July. This research will be incorporated into a co-authored article on Applied Economic History in a major journal, likely in 2026.

Duncan is also conducting archival research on UK monetary policy in the 1980s, from the abandonment of monetarism in the early 1980s to Britain's joining the European Exchange Rate Mechanism in 1990. This longer-term book project builds on his earlier doctoral research on UK monetary policy from the late 1960s to the early 1980s.



**Professor Simon Schaffer**  
Emeritus Fellow  
Professor of History of Science



In April 2025, Cambridge University Press published the book *The Board of Longitude*, a collective work documenting one of the most important institutions through which the British state supported inquiry and technical invention, founded in 1714. The enterprise sustained work by clockmakers and astronomers, mathematicians and schemers, navigators and engineers, for over a century. Its records are preserved in the University Library and thanks to generous grants from JISC and the Arts and Humanities Research Council these have all been digitised and made freely accessible online. The book offers newly exciting analyses of this crucial set of projects.



It was produced by Simon Schaffer in collaboration with colleagues Alexi Baker (Yale), Richard Dunn (Science Museum), Rebekah Higgitt (National Museums of Scotland) and Sophie Waring (Old Operating Theatre London).



**Dr Sandra Petrus-Reurer**  
Research Associate  
Department of Surgery

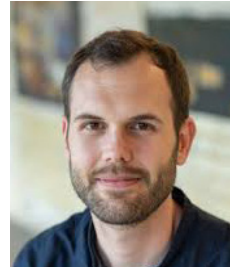
Sandra published a paper, *Immunogenicity of autologous and allogeneic human primary cholangiocyte organoid cellular therapies* in Cell Reports Medicine this year.

In this work carried out in the Department of Surgery at Addenbrookes Hospital, she studied autologous (self) and allogeneic (non-self) immune response to human primary cholangiocyte organoids, with the aim of developing alternative cellular therapy for the treatment of bile duct disorders.

The paper shows: (i) organoids upregulate human leukocyte antigen (HLA)-I/II in inflammatory conditions, (ii) allogeneic immune response is substantially ameliorated by donor-recipient HLA matching, (iii) autologous organoids induce a low-level immune infiltration into the graft site, and (iv) humanised mice distinguish early/vigorous and late/resolved stages of allogeneic response.

Sandra presented both this study and a second on generating and characterising gene-edited human primary cholangiocyte organoids to escape immune response, at:

- ISSCR International Symposium: *PSC-Derived Cell Therapies: Clinical Advances, NextGen Technologies, and the Path to Success*, October 2024, Copenhagen, Denmark;
- and at the international Keystone Symposium: *Organoids: Engineering Innovative Approaches for Basic and Translational Insight*, May 2025 in Whistler, Canada.



**Dr Ioannis Sarropoulos**  
Research Fellow  
EMBO Postdoctoral Fellow at the Cambridge  
Stem Cell Institute

- In October 2024, Ioannis was awarded the Ruprecht-Karls-Prize by Heidelberg University for his PhD thesis on the contributions of the non-coding genome to the development and evolution of mammalian organs.
- In March 2025 he published a first-author preprint on *The evolution of gene regulation in mammalian cerebellum development*. This research addresses a fundamental question about how gene regulatory activity is encoded in our DNA, focusing on the cerebellum, a brain region associated with complex functions such as motor control and learning. Combining cutting-edge single cell multiomics methods with advanced machine learning models, he showed that the sequence code underlying gene regulatory activity in the cerebellum is conserved across mammals, even though individual elements are rapidly evolving. This allowed Ioannis and his co-authors to infer the evolutionary histories of human regulatory elements based on predictions in mammalian genomes and to identify regions associated with evolutionary innovation.
- Ioannis gave an invited talk at the inaugural symposium of the UK Human Functional Genomics Initiative in Exeter in June 2025. His talk focused on the Human Cell Atlas, an international effort to comprehensively map and understand all cells in the human body, using the thymus as an example.



**Dr Kalina Tomova**  
Research Associate  
Faculty of Music

- Kalina published a paper, *Faburden and Fauxbourdon in the Fifteenth-Century Carol* in the Oxford University Press journal *Early Music*. The piece explores improvisational singing techniques in fifteenth-century English music.
- Following her year at Darwin, she has been awarded a Marie Curie Postdoctoral Fellowship at the University of Regensburg to work on her project *FeelTheBeat: Disrupting Musical Time, c. 1300-1600*, which will focus on the early history of syncopation in music treatises between the 14th and the 16th centuries.



**Francisco d'Albertas  
Gomes de Carvalho**  
Research Associate  
Department of Zoology

Francisco's primary focus this year has been to develop a framework to strengthen the credibility of carbon markets by addressing "leakage" - the risk that protecting or restoring land in one area simply shifts damaging activities elsewhere. Using Brazil as a case study, he is quantifying the carbon and financial implications of leakage and testing strategies to reduce it. This work aims to provide a generalisable approach to ensure restoration projects deliver robust and additional climate benefits.

He was a co-author on two papers:

- *Combining protection and restoration strategies enables cost-effective compensation with ecological equivalence in Brazil*, published in *Environmental Impact Assessment Review*;
- and *Time to fix the biodiversity leak* published in *Science*.



**Professor Christine Van Ruymbeke**  
Fellow  
Professor of Persian Studies

In 2024-25 Christine served her third and final year as co-Chair of the Faculty of Asian and Middle Eastern Studies (FAMES) and Head of its Department of Middle Eastern Studies.

*"I am delighted to be able to return to research, which had by necessity to be put on the slow burner over the last three years,"* she says.

However, her research on the 12th Century poet Nizami Ganjavi has received widespread interest this year.

In December 2024, Christine was interviewed by Melvyn Bragg on BBC Radio Four's *In Our Time*, in an episode focused on Nezami Ganjavi, 5 December 2024. She was featured (speaking from the Darwin gardens), in the *Heritage* docu-series, aired on Saudi Channel 1 and Shahid VOD (in Arabic). The series won the Media Excellence Award for TV Production at the Saudi Television Awards Ceremony. Christine also contributed to the film *Nizami: Eternal Inspiration*, which aired on National Television in Azerbaijan in January 2025.



**Professor Eric Wolff**  
Emeritus Fellow  
Royal Society Professor  
of Earth Sciences



Eric and colleagues published a paper in *Nature*, *The Ronne Ice Shelf survived the last interglacial* which assessed the impact on the West Antarctic Ice Sheet the last time Antarctica was significantly warmer than today.

They had drilled an ice core to the bottom of the ice sheet at 651 m depth at a place called Skytrain Ice Rise, sitting between the WAIS and the floating Ronne Ice Shelf. The core extends back to the last interglacial, about 125,000 years ago, a time when Antarctica was warmer and sea levels were higher than today. This had led to the suspicion that WAIS might have been lost. By measuring the concentration of sea salt on the ice, they were able to show that the Ronne Ice shelf remained intact. However, other measurements showed that the WAIS was indeed smaller than it is today. The research has both positive and negative implications: the worst-case scenario of complete collapse of the WAIS did not occur, but ice was certainly lost causing a significant rise in sea level.





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