

2018 Annual Review

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Introduction

The Leverhulme Trust was established by the Will of William Hesketh Lever, one of the great entrepreneurs and philanthropists of the Victorian age.

Since 1925 we have provided grants and scholarships for research and education; today, we are one of the largest all-subject providers of research funding in the UK, distributing approximately £80 million a year.

We award funding across academic disciplines, supporting talented individuals in the arts, humanities, sciences and social sciences to realise their personal vision in research and professional training. As well as substantial grants for research projects, we offer fellowships for researchers throughout their academic career, grants for international collaboration and travel, and support for the fine and performing arts.

Our approach to grant-making is distinctive. Our awards are made in the responsive mode, with the choice of topic and research design left with applicants. We look for work of outstanding merit, which is original, important, and has significance beyond a single field. We particularly value research that crosses disciplinary boundaries or that is willing to take risks in its pursuit of new knowledge or understanding.

The threat created by Brexit is not primarily about being cut off from European funds. It is that funding eventually follows the foremost minds, and if talented people feel unwelcome in the UK they will neither come nor remain

Chairman's Foreword



I am delighted to report that the Trust has had another successful year. Income growth is reflected in the numbers and value of grants made. The volume of applications remains high and crucially the quality of the bids continues to excite our peer reviewers and the Board alike. The pages that follow give details of the various grant-making activities. However, the headlines are that during 2018 the Trust processed 3,769 new requests for funds, and made grants exceeding £110 million in value.

Three new Leverhulme Research Centres were awarded grants of £10 million each. At the University of York, Professor Chris Thomas will lead the *Leverhulme Centre for Anthropocene Biodiversity*, bringing together world-leading researchers to understand the neglected societal and biological processes that underpin biodiversity gains, in addition to examining the causes and consequences of losses. The *Leverhulme Centre for Wildfires, Environment and Society*, at Imperial College London, will be led by Dr Apostolos Voulgarakis and will be the first worldwide to address wildfire challenges from a global perspective. Professor Melinda Mills will be the Director of the new *Leverhulme Centre for Demographic Science*, at the University of Oxford, where an unconventional approach is promised, uniting scientists from demography, sociology, criminology, economics, statistics, molecular genetics, biology, history, marketing and business; bringing 'science' into demography.

The Trust's triennial sequence of '£10 million competitions' this year featured our Arts Scholarships. The Board approved 82 grants to support arts training in 48 specialist organisations. The students who receive scholarships to help further their talents are invariably among the most grateful recipients of Leverhulme grants, and it is heartening to learn about their many subsequent successes and achievements each year.

The 2018 Leverhulme Lecture saw Dame Minouche Shafik address the question 'Why are we so miserable when everything is getting better?', before a large invited audience, whose enthusiasm for debating the issue carried the ensuing discussion well into the dinner that followed her talk. The text of Minouche's lecture is available on the Trust's website.

The Trust's first Gala Dinner to celebrate our Philip Leverhulme Prizes was held in the impressive surroundings of the Drapers' Company Livery Hall, City of London. These prizes, worth £100,000 each, have been offered annually since 2001, in commemoration of the contribution to the work of the Trust made by Philip Leverhulme, the Third Viscount Leverhulme and grandson of William Hesketh Lever. Sir Venki Ramakrishnan presented each of the thirty winners with their prize and praised the wonderful array of research talent that was assembled for the evening.

Amongst all of this good news it would be remiss of me not to acknowledge the looming threat that is Brexit. At the time of writing, it is not yet clear if, how or when the UK will exit the European Union. However, from the outset what has seemed sadly obvious to myself, the Trustees and the Director, is that the discourse that has emerged from the debate about Britain's place in the world in general and within the EU in particular is creating an existential threat to this country's hard-won reputation as a research giant. We have succeeded as a country in creating a 'hostile environment' for international researchers. This will in the future deprive the UK of an important source of talent, ideas and national competitiveness. The threat created by Brexit is not primarily about being cut off from European funds; it is that funding eventually follows the foremost minds, and if talented people feel unwelcome in the UK they will neither come nor remain, and in due course they will be followed by research funds both corporate and institutional.

On behalf of the Board, I should however close on a positive note, by thanking everyone who has contributed to the Trust's success during this past year, by providing their expertise as a reviewer, panel member or adviser. Without the enthusiastic support of the international research community, and indeed of its own hardworking staff, the Trustees could not fulfil the Founder's wishes to provide 'scholarships for research and education'.

Niall FitzGerald KBE DSA
Chairman of the Leverhulme Trust Board

History of the Leverhulme Trust



A committed philanthropist throughout his life, when he died in 1925 Lord Leverhulme left a proportion of his holdings in Lever Brothers to provide ‘scholarships for ... research and education’. It was thus that the Leverhulme Trust came into being.

Born in 1851, William Hesketh Lever made his fortune through the manufacture and marketing of soap and cleaning products. In the space of only a few years his company Lever Brothers grew to become a household name and its products, which included Sunlight Soap and Lux, were sold around the world. The title ‘Lord Leverhulme’ was conferred upon Lever in 1917 (‘Hulme’ being the maiden name of his wife, Elizabeth, who had died four years previously). A committed philanthropist from the beginning, on his death in 1925 Lord Leverhulme left a share of his holdings in his company to provide for specific trades charities, and to offer ‘scholarships for ... research and education’. The Leverhulme Trust was established to undertake these charitable aims. In 1930, Lever Brothers merged with Margarine Unie to form Unilever – one of the world’s major multinational companies – and the shares held by the Leverhulme Trust became shares in Unilever PLC.

The Trust Board

In making decisions about funding, the Trustees seek the advice of a range of peer reviewers and expert panels or committees who offer an assessment of the academic merit and significance of applications.

Trustees

Mr N W A FitzGerald, KBE DSA (Chairman)
Mr D Baillie
Mr A C Butler
Mr P J P Cescau
Professor K Gull CBE FRS
Mr R H P Markham
Ms L Nair
Mr P G J M Polman
Mr C Saul
Ms A Sourry
Mr S G Williams

Grants the Trust Offers

Research projects

The Trust offers three major sources of research project funding. All schemes cover funding for research staff and associated research costs. The choice of subject area and approach is always left entirely to the applicants.

Leverhulme Doctoral Scholarships provide £1.05 million over three years to a UK university to fund a total of fifteen doctoral students, with five scholarships offered in each year of the grant. Approximately ten universities are funded in each round.

Research Leadership Awards support researchers with an established university career who wish to build a research team to address a distinct research problem. Up to £1 million over four to five years is available.

Leverhulme Doctoral Scholarships and *Research Leadership Awards* are offered triennially on a rotating basis together with *Arts Scholarships*.

Leverhulme Research Centres receive £1 million per annum over a period of between five and ten years to conduct innovative research of the highest intellectual and academic ambition. The Trust's aim is to encourage new approaches that may establish or reshape a field of study and so transform our understanding of a significant contemporary topic. These grants are awarded periodically.

Research Project Grants provide up to £500,000 over five years for researchers to undertake an innovative and original research project; the scheme is open to outline applications at any time.

Fellowships and studentships

The Trust aims to offer funding opportunities to talented researchers at all stages of their career.

Early Career Fellowships provide a bridge into an academic career for researchers with a proven research record, but who have not yet held an established academic post. Fellows should expect to complete a single piece of original, publishable research during their tenure. The scheme provides 50 per cent (up to £25,000 a year) of the salary costs of a three-year academic appointment, with the host institution providing the remaining funds.

Research Fellowships of up to £55,000 over a period of three to twenty-four months are awarded to experienced researchers, particularly those whose day-to-day responsibilities have prevented them from completing a programme of research. Applications are welcomed from established independent scholars as well as those holding posts in higher education institutions.

Major Research Fellowships provide replacement teaching costs to enable well-established academics in the humanities and social sciences to focus for two or three years on a specific piece of significant, original research. The scheme is particularly aimed at researchers whose day-to-day duties have prevented them from completing a programme of research.

Emeritus Fellowships provide funding over up to two years for senior researchers who have retired from an academic post to complete a research project, and prepare the results for publication. The awards offer research expenses of up to £22,000, but do not provide maintenance for the applicant.

For further information about funding schemes offered by the Trust, please visit www.leverhulme.ac.uk

International study and collaboration

Study Abroad Studentships support advanced study or research at a centre of learning in any overseas country, with the exception of the USA, for between twelve and twenty-four months. Applicants need to have been resident in the UK for at least three years, and should be either currently a student, or have been registered as a student in the last eight years. The scheme offers basic maintenance costs of £21,000, a dependent allowance, and travel costs.

International Academic Fellowships enable established researchers to visit overseas research centres, to develop new knowledge, skills and ideas. Up to £45,000 is available for a period of three to twelve months.

Visiting Professorships are awarded to UK institutions that wish to invite an eminent researcher from overseas to enhance the knowledge and skills of academic staff or the student body within the host institution. The scheme covers maintenance, travel expenses and research costs, up to £150,000. Visiting Professorships last for between three and twelve months.

Philip Leverhulme Prizes

Each year, the Trust awards up to thirty prizes to recognise researchers at an early stage of their career, whose work has already had a significant international impact, and whose future research career is exceptionally promising. Prize winners receive an award of £100,000 over two or three years, which may be used for any research purpose. To be eligible, nominees must hold an academic post in the UK, and must be within ten years of the award of their doctorate on the closing date for nominations. Nominations are accepted for work across eighteen disciplines, with prizes in six of these offered each year.

Arts funding

Arts Scholarships are open to specialist arts training organisations to develop innovative teaching and to provide bursaries for individuals of exceptional talent to develop their skills in the fine and performing arts.



National Youth Jazz Collective (top) and Circomedia both currently hold Arts Scholarships.

Director's Report



Since the year 2000, the Trust has distributed grants worth more than £1 billion in total, to support research and education in the sciences, humanities, social sciences and arts. The current portfolio of thirteen schemes continues to offer grant holders a range of funding opportunities, large and small, throughout their academic careers.

Research Project Grants remain the 'core business' of the Trust. During 2018, the Board awarded 173 grants, representing 36 per cent of the Trust's expenditure, for sums up to £500,000 to support research into a typically broad range of subjects, including 'Dark matter astrophysics with the Gaia satellite', 'Exploring the social management of lone deaths', and 'Gurus, anti-gurus, and media in north India'. Our fellowship schemes continue to attract large numbers of high quality applications, particularly for Early Career Fellowships, Research Fellowships, and Major Research Fellowships. The pages that follow give details of the numbers, distribution and subject matter of all of the grants made during the year, grouped by scheme into the broad categories of 'Sciences', 'Humanities' and 'Social Sciences'.

During visits to speak at universities, occasionally I am asked why we employ this tri-partite distinction between different spheres of scholarship, since one of the recognised hallmarks of the Trust is its particular friendliness towards interdisciplinary research. One reason is that potential applicants can be reassured that the Trust is indeed a broad-based 'responsive mode' funder, happy to accept proposals across a wide range of topics, and to fund excellence where we find it. The Trustees are under no obligation to represent or satisfy particular disciplinary communities. For convenience, we classify our grants by the nominal disciplinary affiliation of the principal applicant, but many of our projects and all of our larger grants (such as those for Research Centres) span conventional disciplinary boundaries. The *What Happened Next* section of this Annual Review (page 71) gives some examples of typical interdisciplinary Leverhulme projects.

This openness to cross-disciplinary and multi-disciplinary ways of working reflects the Trust's

overarching philosophy, which has always been about problem-solving and collaborations. It also reflects the Trust Board's distinctive appetite for (and ability to fund) 'higher risk' research – or, more accurately perhaps, research which is speculative, has less certain outcomes, and therefore no obvious route to 'impact' beyond that of extending knowledge and understanding. It is for that same reason that the Trust's portfolio of grants also contains a disproportionately high proportion of fundamental (basic, blue-skies or curiosity driven) projects, since these too are generally viewed as higher risk. They tend to take longer, attract less public recognition, and carry fewer guarantees of a successful outcome. The Leverhulme Trust has become particularly associated with both early-stage and interdisciplinary research, not as a matter of explicit policy, but as a welcome by-product of the Board's attitude to risk. I hope that you will be intrigued – and pleased – by the range and originality of the awards that are recorded in this review.

In closing, I would wish enthusiastically to join with the Chairman in thanking the Trust's hardworking staff, and the many generous peer reviewers and advisers who make our grant-giving possible. But I fear that I must also endorse his observations about the debate around Brexit. For practical reasons Leverhulme funding is mainly distributed via principal applicants who are located in UK universities. This does not mean that the beneficiaries of Trust funding are largely British. Just as the UK has been the beneficiary in the last few decades of the openness of Britain to research talent and new ideas from other countries, so our funding has gone to multitalented and multinational individuals and teams who have been attracted by this country's inclusiveness, and to a truly liberal academic research environment. Whatever the outcome of the negotiations around Brexit, I fear that we may have set back this country's research base for a generation to come, by sending truly damaging signals to potential collaborators overseas. I hope I am proved wrong.

Professor Gordon Marshall CBE FBA
Director

Summarised Financial Information

For the year ended 31 December 2018

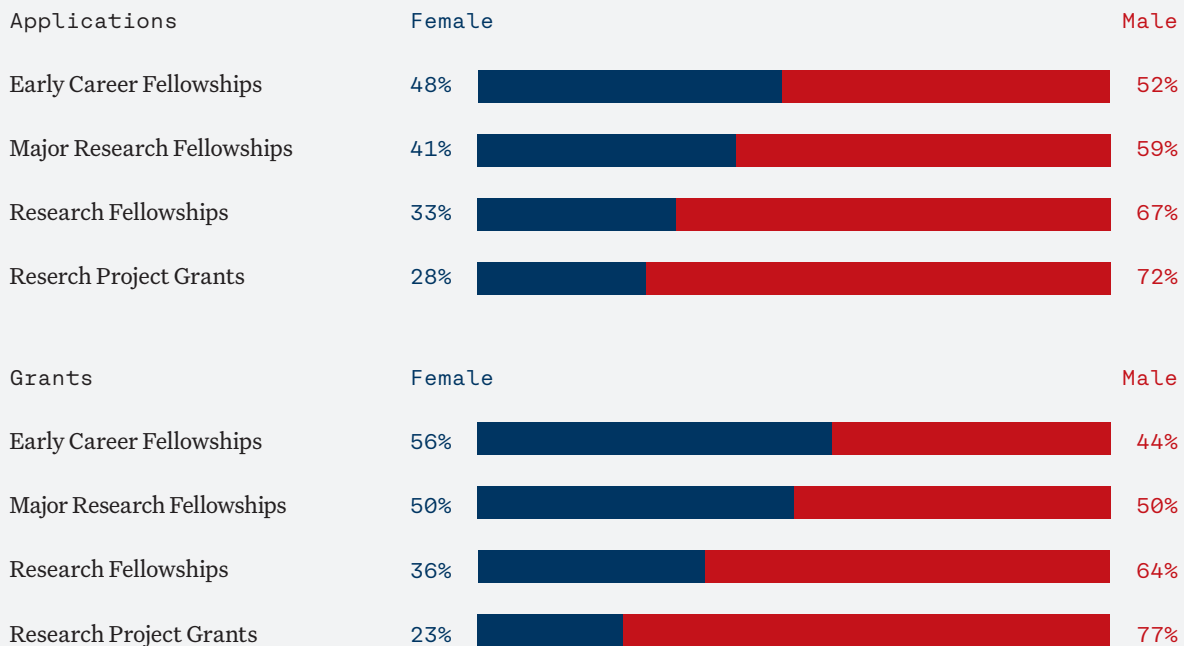
		2018	2017
		£000	£000
Income from	Investment income	109,626	99,383
Expenditure on	Investment management costs	4,699	2,218
	Charitable activities	108,759	77,189
Net income before net gain on investments		(3,832)	19,976
	Net gains on investments	(73,872)	596,738
Net income and net movement in funds		(77,704)	616,714
Statement of funds	Total funds brought forward	3,255,690	2,638,976
	Total funds carried forward	3,177,986	3,255,690

This information is taken from the Leverhulme Trust Annual Report and Financial Statements 2018, which are available to download from the Charity Commission website or on request from the Trust.

2018 in Numbers

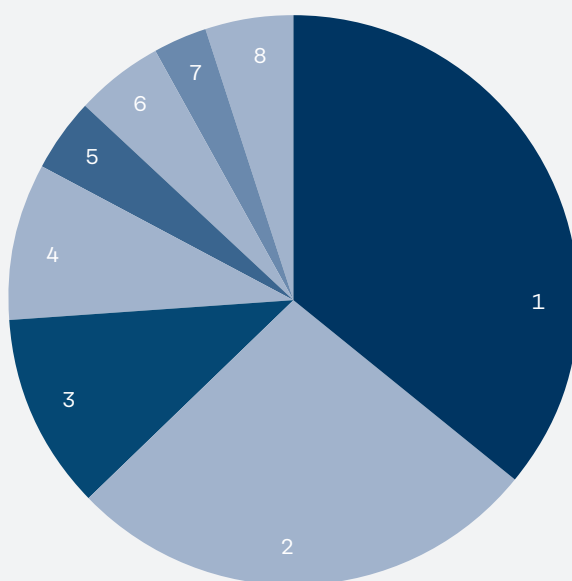
Staff	Institutions funded	Grants awarded
15	81	670
Active grants	Applications received	Funds distributed since 2000
1,502	3,769	£1 billion

Applications and awards: gender split *



* this is not a mandatory field on application forms; the figures represent those who answered

Distribution of funds



- 1 Research Project Grants
£39,271,000 36%
- 2 Leverhulme Research Centres
£29,999,000 27%
- 3 Early Career Fellowships
£12,456,000 11%
- 4 Arts Scholarships
£10,392,000 9%
- 5 Major Research Fellowships
£4,307,000 4%
- 6 Research Fellowships
£5,679,000 5%
- 7 Philip Leverhulme Prizes
£3,000,000 3%
- 8 Other*
£5,393,000 5%

* Academy Fellowships/Scholarships, Visiting Professorships, Study Abroad Studentships, Emeritus Fellowships and International Academic Fellowships.

Applications: success rates

	Applications received	Success rate %
Research Project Grants	856	20
Early Career Fellowships	739	18
Research Fellowships	671	18
Philip Leverhulme Prizes	396	8
Major Research Fellowships	145	20
Visiting Professorships	134	31
Study Abroad Studentships	96	33
Emeritus Fellowships	84	46
International Academic Fellowships	39	49

Grants in Focus

Written by recently awarded grant holders and spanning a range of funding schemes and academic disciplines, our Grants in Focus articles highlight the breadth and significance of research funded by the Trust in 2018

Learning about ageing from a short-lived fish

Exchanging ideas with
diverse new colleagues
overseas will support
Jürg Bähler in
generating fresh
opportunities for
cross-disciplinary
collaborations

As a geneticist, I have worked with yeast as a simple model system throughout my career. We are investigating genome function and regulation, including factors affecting the ageing and lifespan of cells. Ageing is a fascinating biological process which affects us all sooner or later. Single-celled yeasts have been useful to identify basic principles of ageing, but cannot explain the more complex, multi-factorial processes associated with ageing in multicellular organisms like humans. I am therefore keen to also establish a tractable animal model organism in my laboratory to enable complementary, advanced insights into the nature of ageing.

A midlife crisis perhaps, but I have recently become intrigued by the African turquoise killifish, *Nothobranchius furzeri*, which emerges as a potent model system for ageing. This fish inhabits seasonal ponds in South East Africa. It therefore grows, reproduces and ages very rapidly during the short rainy season. Older fish show multiple hallmarks of ageing typical for humans, such as reduced muscles and frequent cancers. The fish only lives for about five months. Its eggs then survive the long dry season in diapause, a state of suspended animation. Diapause features delayed ageing, and likely shares genetic mechanisms with longevity. The killifish has tremendous potential as a new model organism. Its genetic tractability and short adult lifespan allow rapid, cost-effective assays to study ageing and associated biological processes.

I will spend my Fellowship at Stanford University (Palo Alto, USA), with the group of Professor Anne Brunet who are pioneering ageing experiments with killifish. This stay will allow me to learn about the general husbandry and breeding of killifish. Such know-how will be critical to adopt standardised conditions for reproducible experiments at UCL. The Brunet laboratory is at the forefront of killifish research, and the broad, direct experience with both routine upkeep methods as well as cutting-edge genetic approaches will equip me with a strong basis to train group members in essential procedures to successfully establish the killifish model back in London. Moreover, Stanford's Genetics Department includes many groups pursuing a wide range of research on molecules, organisms, populations and genomes. Without a doubt, exposure to this varied, rich science will generate fresh ideas for my own research and opportunities for future collaborations.

Opposite

Adult male (left) and female (right)
turquoise killifish in a research facility.
Picture by Giovanni Stefani, University
of Trento.





No. 54.

The Earl of Shaftesbury.
STATESMEN, No. 35.

Price 6d.

"He is not as other men are, for he is never influenced by party motives."

‘The aristocratic tradition at its best’? Shaftesbury, philanthropy and reform

David Brown’s project examines the nature, meaning and motivations underpinning philanthropic effort in modern Britain

Philanthropy is, pretty universally, regarded as a good thing. Defining what it means, however, is rather more difficult and in deciding to ‘do good’ philanthropists are, consciously or not, helping shape society to reflect their own ideals. The principal subject of my project, Anthony Ashley Cooper, the 7th Earl of Shaftesbury (1801–1885), spoke of philanthropy as ‘the dreadful word’ in recognition of the growing suspicion and criticism he perceived surrounding the philanthropist.

The philanthropist’s role in the development of modern society, however, is vital, whether that has been as a complement to, or replacement for, state activity in diverse fields of reform and social welfare. My project explores that role by bringing to light the innermost thoughts and reflections of one of nineteenth-century Britain’s most prominent philanthropists and social reformers. Shaftesbury, the so-called ‘Poor Man’s Earl’, enjoyed a long career, both within and beyond parliament, labouring to ameliorate working and living conditions (especially for children), improve education opportunities, mental health provision, and a host of wider social reforms. Such is Shaftesbury’s prominence that he is frequently taken to be a pioneer of Victorian philanthropy, ushering in a golden age of voluntary action. William Beveridge, the architect of the twentieth-century Welfare State in Britain, judged that Shaftesbury represented ‘the aristocratic tradition at its best’, which is a revealing comment on duty and responsibility in public life.

We are fortunate that Shaftesbury kept an unusually full (and candid) diary for much of his life – starting in the 1820s but mainly covering the period from the 1830s through to his death in the mid-1880s – in which he recounts not only his actions, but his thoughts and motivations, not least the importance of his evangelical faith. But, because they are dense and difficult to read, these diaries have not had the audience they deserve; studying them in full will allow us to better understand not only Shaftesbury but also the essence of Victorian evangelical philanthropy and questions of social reform.

The principal outcome of my Fellowship will be the completion of a major four-volume scholarly edition of Shaftesbury’s diaries (which run to more than 1.2 million words) which will also underpin wider research into the politics of philanthropy, the relationship between the state and voluntary action, and how philanthropy has been driven by political ideologies and religious impulses.

Anthony Ashley Cooper, 7th Earl of Shaftesbury (‘Statesmen, No. 35.’) by Carlo Pellegrini, published in Vanity Fair 13 November 1869 © National Portrait Gallery, London.

Visualising power and justice in late medieval romance manuscripts

Rosalind Brown-Grant's interdisciplinary project brings a new perspective to the study of medieval French romances by showing how they engage with legal issues such as power and justice

Top

Mercy being granted to the defeated enemy. *Roman de Florimont*, Paris, Bibliothèque nationale de France, ms. fr. 12566, fol 55r. Photo reproduced by permission of the Bibliothèque nationale de France.

Middle

Punishment of the guilty party. *Roman de Gérard de Nevers*, Brussels, Bibliothèque Royale, ms. 9631, fol 107v. Photo reproduced by permission of the Bibliothèque royale de Belgique.

Bottom

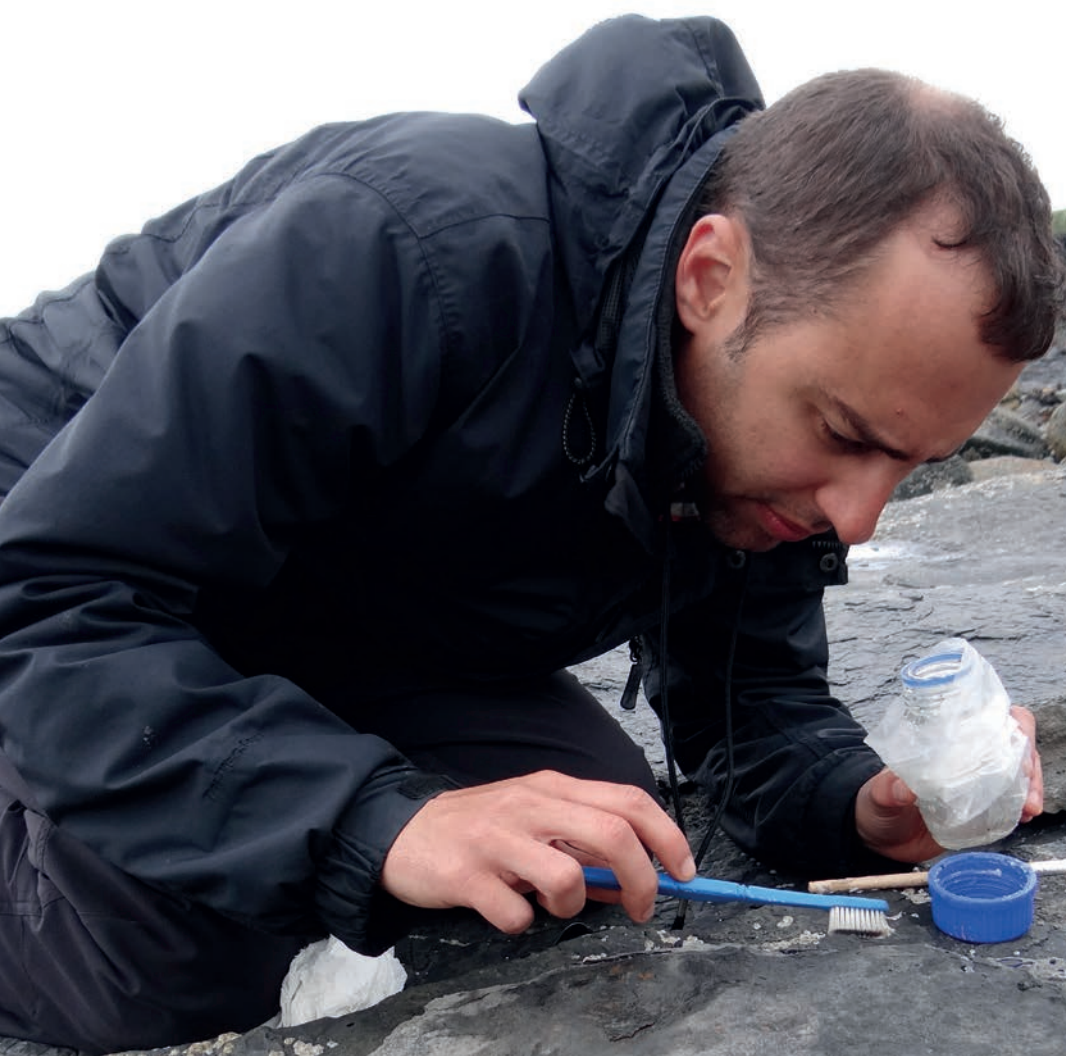
Judicial duel in defence of a slandered lady. *Roman de Saladin*, Paris, Bibliothèque nationale de France, ms. fr. 12572, fol 207v. Photo reproduced by permission of the Bibliothèque nationale de France.

Chivalric prose romances produced at the mid-fifteenth-century court of Valois Burgundy offer a hitherto neglected source of ideas about power and justice in the later Middle Ages with their plots motivated by acts of injustice such as rape, slander, or usurpation. The lesson they offer their readers is that a knight achieves his apotheosis through the performance of chivalric deeds that serve the common good. Depicting the hero bringing justice by proving the innocence of a falsely accused woman in a judicial combat or engaging in just war so as to defend a deposed king, they show how the maintenance of social order through good governance is as much the duty of a knight as of his lord.

Produced for an audience belonging to the highest ranks of Burgundian society, these texts were intended to please both the eye and the ear. One particularly important corpus of illuminated romances is that produced in the 1450s and 1460s at the Lille-based workshop of the Wavrin Master, so-called after his chief patron, Jean de Wavrin, a nobleman, bibliophile and chronicler at the court of Burgundy. These ten paper manuscripts, comprising fifteen texts, contain nearly 650 ink and watercolour miniatures executed in the artist's highly distinctive manner that is at once original, expressive, and very stylised. Offering a concise visual précis of each text's ideological lessons, these manuscripts abound in images of accusation at court, trial by combat, punishment of the guilty, granting of pardon, and prosecution of just war.

Long depreciated in the standard works on Burgundian art which have often likened them to modern cartoons, the Wavrin Master's miniatures have generally been seen as simply providing a humorous commentary on the narratives which they illustrate. Building on some of the most recent developments in research on medieval manuscript illumination in historical and legal texts, my aim in this project is to offer a completely new interpretation of the relationship between text and image in these romances, by showing how the narratives and the miniatures that illustrate them in fact offer a systematic engagement with many of the key political and legal precepts of the age.





On the trail of dinosaurs and the mammals that replaced them

Using high-level numerical and statistical methods, Stephen Brusatte will lead a large collaborative team of researchers to study the Jurassic vertebrate fossil record in the Hebrides

I am immensely proud and grateful to have been awarded a Philip Leverhulme Prize! I'm a palaeontologist in the School of GeoSciences at the University of Edinburgh, and I specialise in using fossils to better understand how evolution works over long time scales and how real organisms respond to real moments of climate or environmental change. Or, put another way, I am one of those lucky people who digs up dinosaurs for a living.

I will be using my prize to support fieldwork and to build the first dedicated vertebrate palaeontology laboratory at a Scottish university. The key questions my students and I will be investigating – in the field and in the lab – over the next several years are:

First, how did mammals take over after the dinosaurs went extinct? I am establishing a large interdisciplinary team to study the genealogy and evolution of those mammals that lived during the early part of the Paleogene period, during the first c. 10 million years after the asteroid wiped out *T. rex* and kin. We are building the largest and most comprehensive genealogical dataset for these mammals, collecting key new fossils with colleagues in New Mexico (USA), and using numerical techniques to date the origination of the modern mammal groups and test hypotheses about how, and how quickly, they rose to dominance. This team brings together many leading researchers from across the world, along with a promising group of PhD students.

Second, what was Scotland like during the Age of Dinosaurs, and what do Scottish fossils tell us about big trends in dinosaur evolution? I will lead a large collaborative team of students, colleagues, and Scottish researchers to collect, conserve, and study the Jurassic-aged fossil record of the Hebrides, the only place in Scotland that preserves dinosaur bones and footprints. Remarkably, the Hebrides is one of the best places in the entire world for Middle Jurassic dinosaurs and other vertebrate fossils (from c. 170 million years ago). This was a time when the earliest meat-eating tyrannosaurs, the first enormous long-necked plant-eating sauropods, and some of the most primitive mammals (and perhaps birds) were evolving, so any new discoveries from Scotland promise to provide major insight into how and when some of the most familiar groups of dinosaurs (and other vertebrates) got their start.

Our future heritage: conservation issues of contemporary architecture

Luciano Cardellicchio's research will measure the transience of contemporary architecture from a technical perspective, to find out what we can learn when an ambitious building fails

Since the opening of the Guggenheim museum in Bilbao, the production of geometrically complex buildings has risen exponentially in Europe and around the world. The museum worked as an engine for the economic growth of the Basque Country by turning the city of Bilbao into a tourist destination. Following this, architectural projects shaped by computer-generated, non-standard geometries became very fashionable, with both public and private clients requesting iconic buildings to generate a similar 'Bilbao effect'. Due to their futuristic appearance, the technical development of these non-standard objects requires innovative construction solutions, with different components assembled together in bespoke building systems.

My research project argues that the demand for these complex objects has resulted in a technical process where geographically specific information such as the regional climate, the territorial materials and the skills of the local labour force are often dismissed. Without a reflective understanding of such knowledge, many of these would-be totemic buildings experience technical issues and premature failure, in some cases directly after their opening. This research investigates why and how this happens.

I have chosen as case studies two buildings opened in Rome in the past decade: the Jubilee Church by Richard Meier and the National Museum of the 21st Century Arts 'MAXXI' by Zaha Hadid. These buildings attract thousands of visitors every year; they are extensively written about and internationally acclaimed as contemporary masterpieces. They are already integrated into the urban fabric of Rome and would be expected to form part of the city's future heritage.

My research aims to determine what has caused their premature decay and unexpected ageing patterns by reconstructing their development process and assessing it based on the failures experienced. In addition to performance analysis and empirical observations, I will use images sourced from social media and drone flights to assess the speed of ageing of these buildings.

The knowledge created by this research will turn the construction and decay process of our future heritage into a pedagogical platform that will both highlight issues critical to common failures of contemporary architecture and formulate a new methodology for monitoring the decay pattern of its buildings. My project will reflect on the transience of contemporary architecture from a technical perspective, engaging with the following question: are today's buildings sustainable as our future heritage?

The Jubilee Church (La Chiesa del Dio Padre Misericordioso), Rome, Richard Meier & Partners. Image reproduced courtesy of Vincenzo Pentangelo (CC BY-SA 4.0).





Uncovering the mechanisms of migratory bird navigation with big data analytics

In this cutting-edge study Urška Demšar will use geomagnetic data to explore how birds employ Earth's magnetic field for navigation

Migratory birds make journeys that cross oceans, deserts and mountain ranges, navigating with exceptional skill to their breeding and wintering areas. Our understanding of how they do this remains fairly rudimentary, in spite of decades of research. Advances in tracking technologies have provided detailed information on where and when the birds migrate. However, finding out what birds experience on their journeys at a particular moment in space and time and how they use this information for navigation is still largely unknown. This is a crucial piece of the migration puzzle, as responses to momentary conditions could explain migratory true navigation, which is the ability to navigate to a specific area far away using only local cues.

This interdisciplinary project will look at the ecological problem of true navigation through the lens of big data analytics. The interdisciplinarity is essential, as the idea requires both expertise in data science and biological knowledge. For this we will bring together Geographic Information Science (GIScience) researchers from the University of St Andrews with ornithologists from the Max Planck Institute for Ornithology (MPIO) in Germany.

We will investigate one of the major cues influencing the true navigation – the effect of the Earth's magnetic field. Experiments have shown that many bird species respond to changes in geomagnetic field. However, these experiments typically focus on a small number of individuals from a single species. We will instead take advantage of the new trend of open data and adopt a multi-species multi-data approach. We will integrate tracking data from many bird studies provided by the MPIO with open geomagnetic data from satellite remote sensing and terrestrial magnetic networks. We will then develop new movement analytics methods to explore if and how navigation responses are favoured by dynamic geomagnetic conditions. We will further simulate several theoretically proposed navigational strategies using real local geomagnetic data from unmanned aerial vehicle surveys in St Andrews and compare results of these simulations with patterns discovered in tracking data.

The ultimate goal is to investigate if data-driven patterns corroborate currently debated navigation theories. This could be not only significant for migratory bird conservation but is the first small step towards harnessing one of birds' non-human senses, the geomagnetic sense, to observe the environment in a way that humans cannot.

The project team consists of Dr Urška Demšar (PI) and Dr Jed Long at St Andrews and Professor Martin Wikelski and Dr Kamran Safi at MPIO.

Storks are tagged with multi-sensor trackers prior to their intercontinental migration. We will use tracking data obtained from many such experiments and link them to geomagnetic data to identify navigation patterns.

Photo: © Ziegler, MPIO.

Experimental gravitational-wave physics, designing and building the world's most precise rulers

Katherine Dooley aims to develop challenging new technologies that will increase the length of stable observational runs that are possible with interferometric gravitational-wave detectors

The last few years have marked a transformative time for the field of gravitational-wave physics. A century after their prediction by Einstein and some 50 years into the effort to detect them, gravitational waves were at last directly detected by the Advanced LIGO and Advanced Virgo observatories in the US and in Italy, respectively, altering the landscape of astronomy. In contrast to all other telescopes used to date which look at the electromagnetic waves of the universe, the gravitational-wave observatories act as ears to listen to the cosmos.

Produced by some of the most energetic events known to mankind such as the collisions of two black holes or neutron stars, gravitational waves create minuscule ripples in space-time that emanate from their sources much like the ripples created from tossing a pebble in a pond. Because the gravitational waves we can hope to detect are generated in the distant universe and because space-time is such a stiff medium, the amplitude of these waves is unfathomably small by the time they reach Earth. For two suspended masses separated by a few kilometres, the passing gravitational waves will briefly change their separation by just one ten-thousandth the diameter of a proton(!), thus necessitating the design and construction of detectors that push the limits of precision measurement techniques.

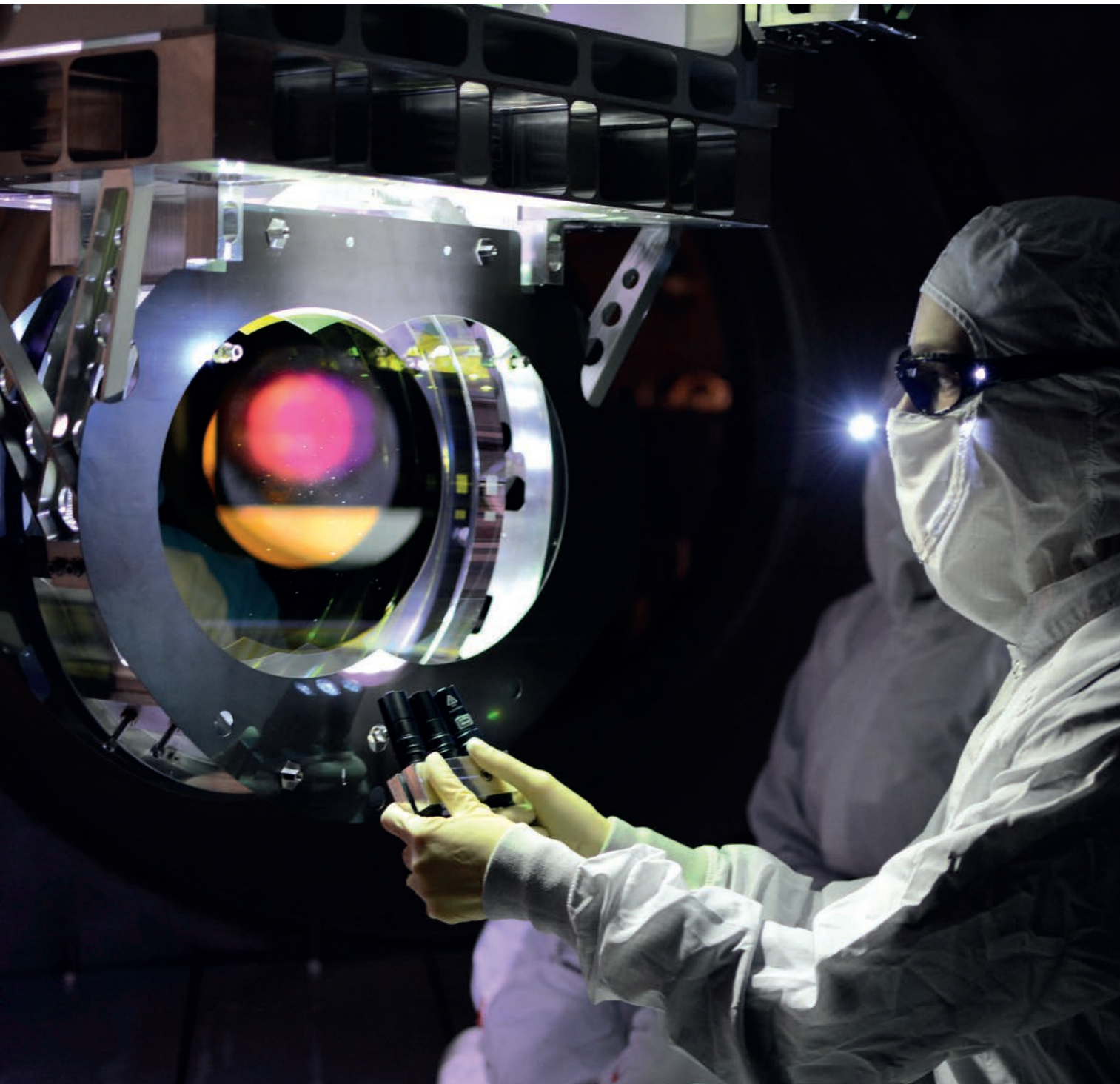
A tremendous project, the detection of gravitational waves has required the collaboration of over 1,000 scientists, engineers and technicians from around the world. I was amongst the lucky few who got to build and commission the detectors to make them work, spending 7 years in my early career in residence at the observatories in the US and in Germany. The basic design of the detectors is that of a laser interferometer: a powerful and invisible infrared laser shines light at a beam splitter which sends it down two perpendicular paths to be met by highly reflective mirrors that send the light right back. The interference pattern of the re-combined light contains information about how much the mirrors have moved with respect to one another.

The biggest challenge is in preventing everything other than gravitational waves from creating a signal. It's impossible to eliminate such 'noise' completely, but through clever techniques in quantum optics and mechanical design, we can improve the sensitivity of the detectors. With my Philip Leverhulme Prize, I will design upgrades for current and future detectors. With observatories that can listen even deeper into the universe, who knows what we may hear next.

Opposite

Large optic inspection.

Image: LIGO Laboratory.





Loose ends: minor transnational Italian cultures

Derek Duncan's project looks at the work of Eduardo Paolozzi, the Scots Italian multimedia artist, as a methodology for glimpsing cultural connections between four cities

Since the second half of the nineteenth century, Italians have been migrating in large numbers. Many went to the United States as well as Brazil and Argentina. After the Second World War, Australia was a common destination, while other European countries have consistently attracted Italian workers and their families for relatively brief, as well as longer, periods of time.

While most research on the subject of migration looks at the relationship between where people come from and where they move to, my project explores alternative and less familiar forms of cultural connectedness. Its focus is on four cities – Edinburgh, Hamburg, Adelaide and New Orleans – which have relatively small, but significant, populations of people of Italian descent. What interests me about places like this is that they offer opportunities for thinking about migration which doesn't inevitably refer back to a fixed point of origin. Italy is not at the centre of this minor transnational culture.

The project is all about creative connections inspired by the work Sir Eduardo Paolozzi (1924–2005). Born into an Italian family in Edinburgh, he grew up speaking four languages, a multilingual inheritance which led, he suggested, to a life-long interest in all forms of translation. He is probably best known for his large-scale public sculptures, but his fascination with the material processes of cultural transformation also informed his earlier pop art, collage, print-making and textile design. The threads connecting the project's four cities are spun by Paolozzi and his eclectic body of work. Growing up in Edinburgh in the 1930s, he experienced very personally the effects of Italy's entry into the War. He taught in the industrial port of Hamburg in the early 1960s, and his interest in textiles finds echoes in the Italian communities of Adelaide. Like the other three cities, New Orleans has a history of anti-Italian racism. I explore this pattern of connectedness through film, literature, tapestry, food and other forms of material vernacular culture. The main languages of this translingual project, in and out of translation, are English, German and Italian.

The project's 'loose ends' belong to the threads of often casual or minor transnational attachments. I don't attempt to write anything like a definitive history of Italian migration to these four cities, but rather draw on Paolozzi's artistic production, his methodology, and biography to capture glimpses of human and cultural movement across distant sites.

Portrait painting today

Gaining traditional painting skills during this intensive programme in Barcelona will support Eloise Gillow in pursuing her career in portraiture

Currently, there is a movement to revive classical techniques of painting from life in the Realist tradition, using nineteenth-century teaching methods. The Barcelona Academy of Art (BAA), established in 2013, has become an important centre of this revival. The BAA aims to teach these methods not as an end, but as a tool that students can use to then develop their own artistic language and it uniquely combines rigorous training in the traditional methods with expressive drawing and painting classes.

Through a highly structured programme, the academy requires systematic progression through the classical disciplines. Having completed the Drawing Programme, the Study Abroad Studentship will enable me to complete the Painting Programme. I will spend the mornings working on a series of cast, still life and portrait painting exercises and the afternoons in the model room working on long-pose figure paintings. Every evening there will also be a two-hour class in which I will focus on what I feel needs work, such as pencil figure drawings, charcoal portrait sketches, oil colour studies of the figure or 'alla prima' (one session) portrait paintings.

Through intense observation every day I will reach a level of professional craftsmanship in realist oil painting. This ability to paint accurately will help me gain a physical likeness in portraiture, yet I am fascinated by the psychological aspect of portrait painting and aspire to push beyond technical accuracy and purely figurative painting in order to attempt to convey the sitter's personality. Ultimately, I hope to be able to create a link of communication between sitter and viewer so that the viewer can gain a sense of who the person is.

The UK has a strong and important tradition of portrait painting, which has a timeless quality and the power to dignify and celebrate an individual. I plan to contribute to this and to the current push to bring the genre into the contemporary world by diversifying representation. Portraits on the walls of British institutions should reflect and celebrate the ever more diverse range of people that move within them. More widely, I would like to explore the possibilities of traditional oil painting by using it to bring visibility to underrepresented groups of people, individuals for whom this would be beneficial or raise awareness of important issues. I am currently making plans to volunteer in a refugee camp in Greece over the summer break and work on a portrait project with refugees. After the Studentship, I hope to combine personal projects with portrait commissions and teaching.

Opposite

Eloise painting a cast of St. Jerome
in the sight size method.





Supporting early literacy development in deaf children

Margaret Harris' study will evaluate a new syllabus developed specifically for teaching profoundly deaf children to read

I first began to study the language development of deaf children in the mid 1990s when I secured funding from the Leverhulme Trust to find out how these children learned to use sign language. Some of the mothers and children who took part in this early study stayed in touch and, as they approached school age, I became interested in how young deaf children learn to read. When I talked to teachers, I soon realised that most children with a significant hearing loss found it very challenging to learn to read and spell. I also discovered that there was very little relevant research and so I began a series of studies to find out how deaf children learn to read successfully.

In recent years, the introduction of newborn hearing screening and major advances in hearing aid technology have had a major impact on many deaf children's spoken language; and I have shown that children who are currently in primary school have language levels that are two years higher than they were a decade ago. However, the reading levels of deaf children have not improved in the same way and so it is important that they receive extra support to develop the skills they need to become good readers.

My research has shown that the skills important for reading English are essentially the same for deaf and hearing children. These are good language skills, a good knowledge of the speech sounds that occur in English (phonological skills) and of the relationship between these sounds and letters of the alphabet.

My Emeritus Fellowship will enable me to evaluate a new curriculum for teaching young deaf children to read that builds on the research evidence. The curriculum, *Foundations for Literacy*, was developed in the United States at the Center for Literacy and Deafness at Georgia State University and I was one of the consultants on the development team. *Foundations for Literacy* has proved to be very effective for deaf children in the United States and I have been working with one of the directors of the Center, Professor Amy Lederberg, to develop a UK version of the programme in conjunction with my colleague, Dr Emmanouela Terlektsi from Birmingham University. I will be observing children who are using *Foundations for Literacy* and talking to the teachers to see how well the curriculum works in UK classrooms.

Inflation and collapse of drops and bubbles levitated by a superconducting coil

Richard Hill and his team propose to levitate liquids in their laboratory to study the dynamics of gas bubbles

A playing card placed over a small tumbler full of water prevents the water running out when the glass is turned upside-down. When the card is removed in this well-known trick, however, the interface between the water and air becomes unstable, developing rapidly growing undulations as the water falls. This instability is known as the Rayleigh-Taylor instability (RTI).

Collapsing bubbles in a liquid, such as those generated by a spinning ship's propeller, for example, also exhibit RTI. In this case, the instability occurs not from gravity's pull but from the acceleration of the fluids toward the bubble's centre as it rapidly decreases in size, causing the bubble to break up and produce powerful vapour jets that damage propellers, turbines and pumps. The instability of the collapsing bubble is utilised in novel ultrasonic cleaning devices and has several promising medical and therapeutic applications. The same RTI occurs in supernova explosions, producing the filaments of the Crab nebula, for example. In ongoing attempts to produce a clean source of carbon-neutral electricity by the 'inertial confinement fusion' method, the RTI is a major technological barrier, occurring during the critical moments of the collapse of the spherical hydrogen fuel pellets.

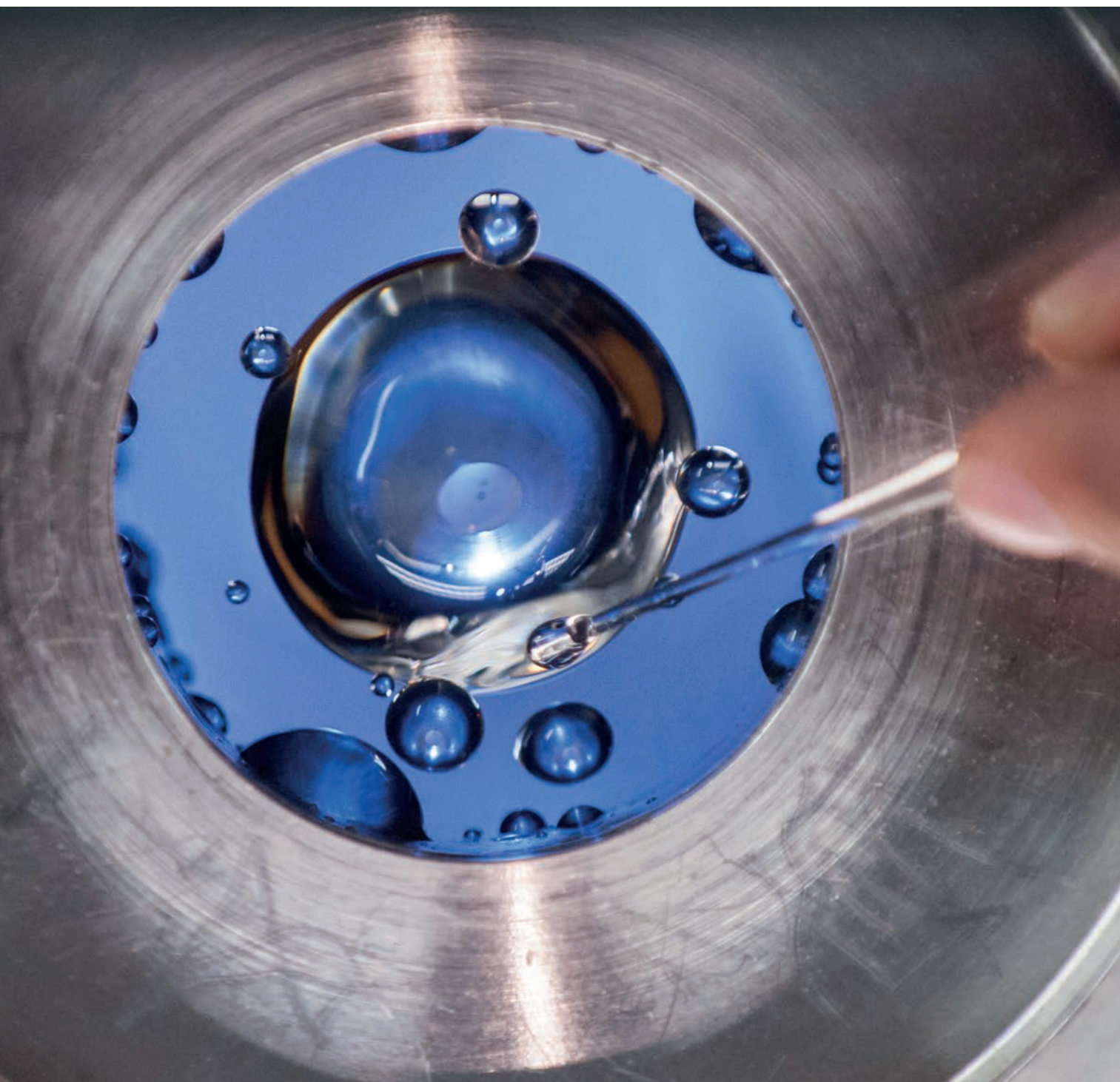
Experimental studies are crucial to understanding this important instability. Bubbles and liquid droplets are natural testbeds to study the RTI in such collapsing and expanding objects, providing valuable experimental data, but the inevitable presence of gravity on Earth poses a problem: droplets fall and gas bubbles in liquid rise, deforming them as they move.

I and my colleagues, Matthew Scase and Naresh Sampara, will use a superconducting magnet at the University of Nottingham that generates a strong magnetic field, many times larger than can be obtained by permanent magnets, to levitate liquid water drops and gas bubbles in water. Water (as well as much organic material) is 'diamagnetic', meaning that it is weakly repelled from magnetic fields. The diamagnetic levitation technique makes use of this magnetic repulsion to counteract the force of gravity, effectively creating a weightless environment comparable to that aboard the International Space Station.

By removing the influence of gravity, we will be able to observe and manipulate the large drops and bubbles that are ideal for studying fluid flows in collapse and expansion phenomena. The images that we will obtain will provide vital experimental data to compare with theoretical predictions, stimulating and opening new avenues for theoretical and experimental research.

Opposite

This photograph shows a large droplet of water, several centimetres in diameter, levitated in mid-air by the strong magnetic field produced by our superconducting magnet. Image: Max Alexander/UK Space Agency/University of Nottingham.





Another world? East Africa and the global 1960s

By studying East Africa's textual cultures, Emma Hunter's team interrogate key assumptions of the linearity of globalisation by exploring how a vision of a connected postcolonial world shattered

After many decades of becoming ever more connected, our contemporary world seems to be showing signs of de-globalising. Across economic, political and cultural life we see evidence of the return of an inward-looking nationalism. Global connections, it seems, are fragile, and globalisation can go backwards as well as forwards.

Against this background, Gerard McCann (York), Daniel Branch (Warwick) and I think there is much that we can learn from East Africa's post-colonial experience. At independence, East Africa was as favourable an environment for an embrace of globalisation as any region more commonly included in the canon of global studies, such as South and Southeast Asia or the Caribbean. But within just twenty years many of the global connections built in this period were broken.

In this project, we seek to understand and explain how East Africa's global connections systematically broke down, opening up a set of new and unpredictable paths forward. While others have explored the history of global connection through a political or economic lens, we will focus on ideas. Crucial vehicles for global thinking in East Africa were print and written correspondence. They were vehicles of connection, through which links were forged and connections imagined; and of disconnection, in which incommensurable difference was asserted and connections ruptured.

We will combine close reading of printed texts such as the Swahili-language newspaper *Baraza*, published in Nairobi but read across East Africa; literary journals and periodicals such as the magazine *Transition*, founded in Uganda in 1961 and read widely across East Africa until its editor Rajat Neogy was arrested and imprisoned by Uganda's first Prime Minister, Milton Obote, in 1968; trade union and party pamphlets; novels and poetry with analysis of the written correspondence held in archival repositories through which a 'commonwealth of letters' was created.

Over the coming months we will build our project team, bringing together one doctoral researcher working on Kampala's literary and artistic scene in the 1960s; another exploring connections between East Africa and China and a postdoctoral researcher who will develop a discrete project on connection and disconnection in inland East Africa. And we will work with PhD students based in East Africa to build an exciting new web resource – East Africa's Global Lives.

Writing global history from East Africa in this way will, we contend, allow us to reconceptualise established chronologies of East African history while also unsettling conventional narratives of globalisation.

Rajat Neogy with Allen Ginsberg, Peter Orlovsky, and UN librarian © 1968 Bill Anderson. Courtesy of Allen Ginsberg Collection.

Stimulation of female fecundity by males: causes and evolutionary consequences

Rebecca Kilner's
project team
investigate how social
interactions within
families generate
biodiversity

Social interactions are commonplace in animals, particularly during reproduction: even solitary animals must interact with one another to breed. Our project will determine whether social interactions can accelerate how quickly animal populations evolve and adapt to a new environment, potentially enabling them to survive in a changing world.

Our team – Stuart Wigby (University of Liverpool), Rob Beynon (University of Oxford) and myself – will focus on burying beetles, which breed on the dead body of a small vertebrate by converting it into an edible nest for their larvae. Small carrion is relatively rare so before they can breed, burying beetles must first compete to acquire a carcass. The winners of these battles become the dominant owners of the carcass. Defeated males become subordinates and they sneak matings with the dominant female. This causes sperm competition between dominant and subordinate males within the female, to fertilise the ova. We have recently discovered that males compete for fertilisations in different ways, depending on their social status. Dominant males somehow fertilise more eggs, whereas subordinate males induce the female to produce more eggs. In this way, subordinate males can increase the number of offspring they sire and make the best of a bad job, even though their share of paternity remains relatively low.

The stimulation of female fecundity by subordinate males is the social interaction we will focus on in this project. We will use cutting-edge techniques from proteomics to determine how subordinates achieve this: the most likely explanation is that males add proteins to their ejaculate that induce egg-making. We will also examine the female's perspective: is it in her interests to lay extra eggs? The larger the brood, the less carrion there is for each larva, and the smaller it will be as an adult. So fecundity stimulation may not be beneficial for females, and they may have evolved counter-measures, like eating extra eggs or newly hatched larvae, to keep brood size low, and larval mass high. Finally, fecundity stimulation may pre-dispose beetles to breed successfully on larger carrion – because they can quickly capitalise on the extra resources by producing larger broods. It may also pre-dispose beetles to breed successfully on smaller carrion – because female counter-measures can quickly trim the brood to match the resources available. We will use experimental evolution to determine whether this pre-existing flexibility enables beetles to rapidly evolve and adapt their brood size when they are suddenly and consistently exposed to a new breeding environment, namely larger or smaller carrion.

A female burying beetle (*Nicrophorus vespilloides*) at her carrion nest, tending to her larvae. Image: Tom Houslay.





Landscape, identity, community

John Kippin uses documentary photography to ask new questions about the relationships between people, places, history and identity in the Southern Outer Hebrides

The Outer Hebridean island of South Uist is unusual in having an internationally acclaimed book to celebrate its people and places, and although much additional documentary material and many studies exist about the various islands of the Outer Hebrides, none match the intensity or impact of *Tir A'Muhrain* (Land of Bent Grass). This important publication was made in 1954 by Paul Strand working with his partner Hazel Strand. Paul Strand's humanist photography has been one of the key practices in defining modernist photography and *Tir A'Muhrain* is one of its paradigmatic works. Its (arguably) Marxist aesthetic looks at the people and places of South Uist in a manner which binds the images of people and their labours to the land, using a narrative structure in which links are made between and within individual images.

Today Strand's work is considered exemplary within this genre, and many photographers have followed the documentary style – repositioning photography as a humanistic enterprise and developing a critical discourse within the politics of representation. Based on Paul Strand's seminal publication, my research project is to photograph the islands of the Hebridean peninsula with special regard to representing the recent settlers and 'incomers' there and considering them within the context of the new landscapes as different economic and social conditions emerge. I will photograph the places and people of these islands concentrating on this contemporary diaspora with a view to making a different kind of book publication.

Working from the Community Arts Centre in Lochmaddy, North Uist, my intention is to ask important questions about the relationships between people and places, bringing them into a revised critical focus regarding belonging and identity within their contextual landscapes. The Cultural Geographer Doreen Massey describes places as being bound up with the histories that are told about them and the ways in which those histories are told; and this is one such story.

As a result of my research, it is my expectation that a different kind of story will emerge, one that whilst being rooted in the island's history and traditions has more to do with the changes that have occurred within the modern world, where the movements of people and the forces of globalisation have inexorably eroded the traditional relationships between people and places. I will look to ask far-ranging questions about these relationships, contributing to the literature and culture of the islands and bringing them into a contemporary, critical alignment whilst, simultaneously, challenging the existing representational paradigm within documentary photography.

A state of the art conservatoire

Leeds College of Music is the largest specialist music conservatoire in the UK, delivering expert music education to a community of over 1,200 musicians, from juniors through to postgraduates

Situated in Leeds' cultural quarter, Leeds College of Music is artistically ambitious, quality driven and industry-focused, placing strong emphasis on developing industry-relevant creative musicians and entrepreneurs. We offer undergraduate music degrees in Popular Music, Classical Music, Jazz, Music Production, Music Business, Film Music, Songwriting, Folk and Musical Theatre, alongside foundation degrees in Music Production and Electronic Music Production.

Leeds College of Music prides itself on being accessible to all. In 2017/18, almost 50% of students were supported with bursaries during their studies, awarded to those from lower income households and further selected based on academic and musical ability. The Leverhulme Scholarships will support students on our BA (Hons) Music (Jazz) and MMus Creative Musician degrees, allowing us to maintain our position as a centre for excellence, encouraging talented musicians to apply to the conservatoire, irrespective of socio-economic background.

Leverhulme Arts Scholarship – BA (Hons) Music (Jazz)

Twelve exceptional students will be offered a Leverhulme Arts Scholarship during the three-year grant, awarded on the basis of excellence, that will cover accommodation costs during their first year of study at the conservatoire.

Established in 1965, over the last 50 years Leeds College of Music has become a centre for excellence in jazz across the UK and Europe. The first institution to offer a jazz degree in Europe, our students benefit from highly practical courses delivered by academic staff engaged in the music industry as professional musicians. There are many performance opportunities available for students, including the Contemporary Jazz Orchestra, SU Big Band and our bi-monthly jazz showcases.

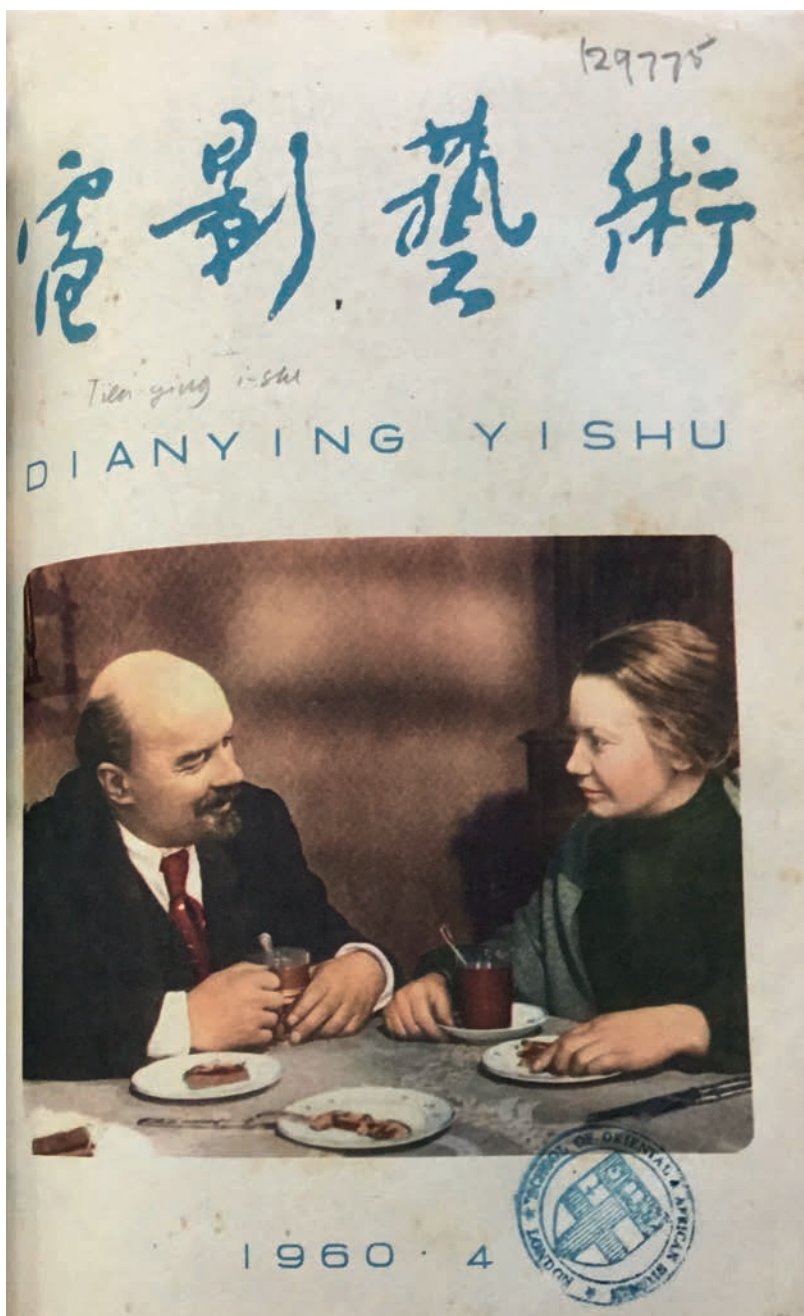
Leverhulme Arts Scholarship – MMus Creative Musician

The Leverhulme Postgraduate Scholarships will support twelve individuals with the entire cost of tuition fees for our 1-year full-time MMus Creative Musician programme. The course offers the opportunity for students to develop their skills as professional-level musicians and collaborate with leading composers, performers and producers. Our academic staff encourage individuals to experiment, think critically about their musical practice and help cultivate an entrepreneurial mindset.

Opposite

Postgraduate pianist Joel Jefferson
performing in the 7A warehouse space,
Wakefield. © Leeds College of Music.





Transnational practices: film culture and politics in China, 1949–1989

Xiaoning Lu examines transnational film practices in China against the backdrop of the shifting global order

How did Chinese appropriation of Charlie Chaplin serve the Chinese Communist Party's revolutionary cause at the height of socialism? How did voice performance of Chinese dubbing actors reveal the Chinese public's shifting attitudes toward the West?

After researching Chinese socialist cinema for many years, I have come to realise the importance of the international dimension of Chinese socialist cinema and culture, which has so far received inadequate attention. Transnational exchanges of creative talents, images and cultures are not reserved exclusively for the globalised present and do not take place only among major economic powers. Nevertheless, many existing studies of transnational cinema implicitly share a hostility towards the nation-state as a controller of borders and celebrate the 'transnational flow' driven by market forces. Aiming to explore transnational film practices that are driven by shared political interests and common desires instead of profit, my book project will examine transnational film practices in China against the backdrop of the shifting global order from 1949 to 1989.

This historical period is marked by a series of tumultuous social and geopolitical changes: the addition of the People's Republic of China (PRC) to the socialist camp in 1949; the Sino-Soviet split in 1959; China's growing solidarity with other Third World countries during the Cultural Revolution (1966–1976); China's opening up in 1978; and the disintegration of the socialist camp in 1989. My project explores how transnational film practices reconfigured cinema's function as China transitioned from state socialism to market socialism. Specific case studies, each of which represents a dominant transnational practice at a particular historical juncture, include heroic narratives at socialist film festivals in the early 1950s, re-canonisation of Charlie Chaplin amidst China's active promotion of Maoist–Third Worldism in the 1950s and 1960s, the revival of Western realist film theories in modernising Chinese film language shortly after the Cultural Revolution, as well as disembodied stardom of voice actors and Sino-Japan film co-production in the 1980s.

By shedding light on the complexities of transnational film practices in contemporary China, this project will contribute to the growing body of revisionist socialist cultural studies that challenge parochial and dismissive attitudes and seek to uncover a socialist cosmopolitanism that was aimed at creating an alternative social order.

Soviet film *Lenin in October* gracing the front cover of Chinese film magazine *Dianying yishu* (Film Art), no.4, 1960.

Rhetorical structures: architectural settings in Early Renaissance Italian painting

Examining the representation of architecture in Italian Early Renaissance painting, Livia Lupi discusses four fresco cycles with prominent architectural settings, exploring the interplay of painted and built structures

The messages architectural structures convey and how they communicate with viewers are central themes in architectural scholarship. Scholars of fourteenth and fifteenth-century Italian architecture have approached this issue in a number of productive ways, but little research has been dedicated to the communicative abilities of architecture in painting, which has always been treated very differently from architecture in drawings and prints.

No existing study probes how a unique painterly context – devoid of structural constraints as architectural drawings are, but unlike them intertwined with narrative – affects the ways in which architectural structures are represented and perceived. This means that our understanding of buildings in painting is limited to traditional interpretations focusing on pictorial space that do not analyse what architectural settings do for the image and how they engage with the viewer beyond the articulation of three-dimensionality. More importantly, this gap in our knowledge prevents us from developing a more integrated understanding of architecture in all its forms and across media, as well as from thoroughly investigating the phenomenon of the painter-architect in artists other than Giotto or Orcagna and long before figures like Michelangelo and Baldassarre Peruzzi.

My book project aims to fill this lacuna by highlighting the rhetorical potential of architecture in painting and the deeply architectural imagination of artists in order to shed new light on the exchanges between built and painted architecture. I will focus on four case studies realised between 1379 and 1450, a key period during which architectural settings started becoming more prominent, demonstrating a growing interest in structural and ornamental inventiveness. Drawing on early Renaissance rhetorical culture, my project explores the persuasive abilities of architectural structures, highlighting their agency within the image. I propose that architecture in painting can shed light on how architecture was perceived more broadly, highlighting the relationships between architecture, painting and the textual arts, as well as demonstrating the strongly architectural imagination of artists and providing new insights into the later development of architectural practice through drawing, as exemplified by Giuliano da Sangallo, Michelangelo and Baldassarre Peruzzi among many others. I expect this will play an important role in defining more interdisciplinary, inter-media approaches to art and architectural history in the future, reshaping research on the representation of architecture and its communicative value for a varied audience in Renaissance Italy and further afield.

Opposite

Domenico di Bartolo, “Pope Celestine Grants Autonomy to the Hospital,” 1442–1444. Pellegrinaio, Santa Maria della Scala, Siena. Fresco. © Comune di Siena. Photograph by Bruno Bruchi.





Promoting pathways for learning disabled dancers

Magpie Dance's innovative training programme is helping people with learning disabilities overcome barriers to accessing degree and higher education dance courses

In the UK, higher education and degree level courses accepting people with learning disabilities are a rarity. This is no less true in the dance education sector where talented and ambitious dancers with learning disabilities have far fewer options than dancers without disability for developing their art and pursuing their dreams.

At Magpie Dance, we've worked exclusively with people with learning disabilities for over 30 years, and we are determined to build real stepping stones to mainstream courses for dancers with learning disabilities. Our pioneering new Intensive Dance Training course is open to 10 students per year, and runs for 30 weeks and will tackle the barriers to progress head-on. Taking a multi-faceted and adaptive approach to dance training, we'll support dancers with talent and potential to attend up to eight core sessions per week, alongside a specialist programme of performance sessions.

As leaders in our field, we want to demonstrate that inclusive dance practice is much more than simply being open to people with learning disabilities. It takes an investment in the individual needs of the dancer. Starting with significant planning around access (from venues to transport and adapted communication), then putting extra investment into support (meaning high levels of professionally trained staff supporting students to commit, develop confidence and independence) and lastly, taking a highly flexible approach, ensuring each student has the time and tools needed to develop at their own pace.

Thanks to Leverhulme Trust funding, we're thrilled to be introducing an additional strand to the Intensive Dance Training course designed to provide the vital access, support and time required for dancers with learning disabilities to reach their potential. The additional strand includes accompanied visits to leading dance companies providing access to performances, rehearsals, workshops and classes by mainstream and renowned companies. Students will also attend weekly learning workshops by industry experts such as choreographers, dramaturgs, dancers, designers, musicians, producers and videographers, all of whom are currently out of reach for students with learning disabilities.

Finally, weekly study sessions, using technology such as tablets, accessible software and video, will provide dancers with the support and time to process and develop the skills learnt in classes and workshops enabling them to evaluate artistic work and make informed creative decisions in presenting and delivering high quality work.

Paving a new pathway to mainstream courses for dancers with learning disabilities, our course strengthens the professional dance sector, making it more inclusive and diverse.

'Hidden Impact' performance
(December 2018) commemorating
the lives of people with learning
disabilities during WWI.

The pen and the plough: modern British nature writing and the farm

Pippa Marland's novel project will carry out the first comprehensive assessment of the representation of farming in modern British nature writing

While the Government's recent policy document *A Green Future* describes farmers as 'the true friends of the earth', accounts within modern British nature writing do not necessarily concur. Although there have been positive representations of farming within the genre over the past 250 years, the relationship between nature writing and agriculture has more often been a vexed and complex one. Farming has at times either been actively vilified or completely elided from accounts of Britain's nature, castigated for its impacts on biodiversity or ignored by writers seeking out 'wild' places untouched by human cultivation.

There are, of course, grounds for sympathising with both of these perspectives. Nevertheless, they might also be regarded as neglecting the broader systemic pressures on farmers and as perpetuating an under-examined and unhelpful schism that requires urgent scrutiny. After all, over 70% of the land area of the UK is farmed, and the future of the nation's biodiversity is closely tied to the kind of farming practices that will be adopted in the coming years.

My project will explore the representation of farming in selected British non-fiction nature writing, from the publication of Gilbert White's *The Natural History of Selborne* in 1789 through to the years immediately following Brexit. I'll be investigating how specific historical contexts and shifts in farming practice have influenced that representation, along with looking at how changing conceptualisations of 'nature' and literary tropes of Pastoral, Georgic and the 'wild' have shaped the account of agriculture within the genre. While there has been a sustained focus on these tropes in the academic study of nature poetry, there is little research examining their deployment in prose nature writing, despite the impact of this increasingly popular genre on public perceptions of the rural.

For Mark Pope, Chairman of the NFU Environment Forum, Brexit 'presents a once-in-a-lifetime opportunity for policies that work for farmers, the environment and consumers'. However, as the nature writer Robert Macfarlane has warned, 'the British have long specialised in a disconnect between their nature romance and their behaviour as consumers'. Through its focus on the representation of agriculture in British nature writing, I hope that the project will help to resolve that 'disconnect', offering an important genealogy for contemporary debates around farming and the environment which can only be fully understood through tracing the history of their emergence.

Seagulls following the plough,
photographed by Charles Topham.
Used with permission from the
Museum of English Rural Life,
University of Reading.





Brian Attebery, Leverhulme Visiting Professor of Fantasy

Professor Brian Attebery is the pre-eminent name in the field of fantasy literature, and his unrivalled experience and knowledge will benefit both staff and students at the University of Glasgow during his Visiting Professorship

Only in recent years has fantasy emerged as a focus for serious research at university level. For decades after Tolkien revolutionised the book market in the 1960s, fantastic fiction tended to be tacked onto science fiction studies as an embarrassing afterthought, an outsize relative given to wearing vintage clothes and breaking into song at every opportunity. Then Harry Potter burst onto the scene, Peter Jackson's *Lord of the Rings* movies took the box office by storm, and all at once it seemed irresponsible *not* to pay attention to the art of the impossible. What was attracting young people in such numbers to places and beings that never existed and never could exist? What cultural and political needs did fantasy fulfil? As academics began to ask these questions with increasing urgency, they found that a major scholar had been steadily building up a theoretical framework to help answer them, from his first monograph, *The Fantastic Tradition in American Literature*, to his seminal book *Strategies of Fantasy*, which identified the genre as a 'fuzzy set' with Tolkien's works at the centre and a huge variety of imaginative narratives at the peripheries. Attebery also edited the foremost journal in the field, the *Journal of the Fantastic in the Arts*. Thanks in large measure to Attebery, fantasy was already embedded in the academy, ready to function as a vast new lens through which to examine our past, present and future.

This year, Attebery has come as Leverhulme Visiting Professor of Fantasy to the University of Glasgow, home of the world's first graduate programme exclusively dedicated to the fantastic. He has given us five public lectures on subjects from fairy tales to fantasy's take on global warming. He has taken part in discussions to found a Centre for Fantasy here in Glasgow. He has visited, or plans to visit, six other universities, from Dundee to Cambridge, where he is giving further lectures and workshops. He will deliver the keynote address at our annual conference, GIFCon. And he's been talking to young researchers, preparing the ground for the construction of a growing edifice of fantasy studies on this side of the Atlantic, as he did at home. Attebery is a builder as well as an analyst of imaginative worlds, and he is in the process of transforming the academic landscape in Scotland and beyond.

Professor Attebery's Leverhulme lectures will shortly be available online. Keep an eye on our webpage, www.gla.ac.uk/schools/critical/research/researchareasandinitiatives/fantasy for further announcements.

Wartime Shakespeare: the fashioning of public opinion through performance

How have Shakespeare's plays been used to shape public opinion during periods of war? Sonia Massai and her team examine theatre productions spanning the seventeenth to the twenty-first century

Theatre is regularly used as a site of engagement with contemporary politics, often becoming especially urgent and direct during wartime. This project examines how productions of Shakespeare have been used over the last four hundred years in order to comment directly on war-threatening crises at home, such as the Exclusion Crisis (1679–1681), or on wars with English/British involvement, including, most recently, the Iraq War (2003–2011). I am especially interested in how these appropriations relate to narratives of conflict, to Shakespeare's changing cultural capital as a figure of national and global significance, and to popular attitudes towards war efforts – issues of increasing significance in today's political climate.

Our research stems from a unique collaboration between the English and War Studies Departments at King's College London, bringing together specialists from both fields and offering a platform for the production of new knowledge. We hope to expand and qualify a simplistic understanding of 'Wartime Shakespeare' as either pro- or anti-war and of the plays and productions as either conservative or subversive. We are particularly interested in exploring the extent to which wartime productions affirm or challenge their audiences' views on a conflict, how impact can be measured, and the ability of theatre to mobilise public opinion.

Most previous studies of Shakespearean wartime productions have tended to concentrate on twentieth-century conflicts. This project is the first transhistorical study into how Shakespeare's plays have been used during conflict, and explores how wartime theatre changes across the centuries and within different theatrical communities. It will make an important contribution to understanding the relationship between the arts and conflict, examining how Shakespearean productions connect to war reporting, wartime propaganda, and the development of critical narratives about particular conflicts.

The interdisciplinary project team consists of: Professor Sonia Massai (English), Professor Richard Lebow (War Studies), Dr Jan Willem Honig (War Studies) and Dr Amy Lidster (English).

Opposite

HENRY V by Shakespeare, Adrian Lester as Henry V at the Olivier, National Theatre, London, UK, May 2003. © Ivan Kyncl/ArenaPAL, www.arenapal.com





Rethinking complexity in facial communication systems

Jérôme Micheletta's project will radically change how facial expressions are defined and studied

Communication is a defining feature of sociality, and faces offer others a wealth of information about identity, emotion and intention. Despite this, we know little about what makes facial communication complex, and how to distinguish between species that have sophisticated facial communication, and those that do not. Traditional approaches rely on simplistic methods such as counting the number of facial expressions produced, or the number of facial muscles. However, these methods do not capture the richness of truly complex facial communication, such as dynamic movements, blended and graded facial expressions. Without better techniques to assess complexity in a more meaningful and accurate way, our understanding of the evolution of communication is inhibited.

In this project, I will combine the Facial Action Coding System (an anatomically based system designed to break down facial expressions into their most basic observable units, the contraction of individual facial muscles) with Social Network Analysis (a method to measure relationships between units in a system) to develop a novel framework to study communication via the face: NetFACS. In this framework, facial expressions will be conceptualised as a network of facial muscles, interacting to produce communication. This method will take into account the dynamic nature of facial expressions and therefore, better reflect its complexity.

Once developed, I will use NetFACS to test the current leading hypothesis that social complexity drives the evolution of facial communication complexity. The idea is that individuals living in large groups, with individualised relationships and numerous social roles, need to negotiate multifaceted social interactions; strategically assess and respond to group members quickly and accurately to form and maintain relationships. Complex social communication could provide one solution to these problems. Macaques are the perfect model to test this hypothesis as all species share similar demographic characteristics (e.g. multi-male, multi-female groups of similar sizes) but differ in degree of social tolerance (i.e. egalitarian vs despotic) – the ability of individuals to interact with a large number of individuals in many different ways – which is a key aspect of social complexity. We expect more tolerant species to have more complex facial communication.

Ultimately, this project will provide a tool to quantify the complexity of facial expressions and invigorate a new way of thinking about communication complexity across species.

Adult male crested macaques displaying a silent bared-teeth face. Jérôme Micheletta, Macaca Nigra Project.

Double agent: Heinrich Simon's constitutional mission in neo-absolutist Prussia

The revolutionary foment of 1848 forms the backdrop to Stephen Parker and team's study of one of its key German protagonists, whose unexamined papers were given by his nephew and namesake to the University of Manchester

A particular German-Mancunian linkage underpins our interest in the German-Jewish lawyer, civil servant, politician and author Heinrich Simon (1805–1860), the only leader of the German 1848 revolution as yet largely unresearched. Simon's nephew, the Manchester industrialist Henry Simon, who endowed the Henry Simon Chair of German which I held until 2018, left the bulk of Heinrich Simon's papers to the University of Manchester. Henry Simon also brought to Manchester the Great Seal of the Frankfurt Parliament, which the Simon family returned to the German people in 1991 following re-unification, for display in the Reichstag. This symbolic act animates our project.

In the German lands, as elsewhere on the Continent, the 1848 revolutions were a seminal event in the formation of modern Europe. 1848 promoted an agenda of national self-determination and constitutional government which aimed to establish citizens' rights under the rule of law, essential properties of a civilised, democratic society. At a time when those values are being challenged from a number of quarters, 1848 – its defeats as well as its successes – remains an essential point of reference.

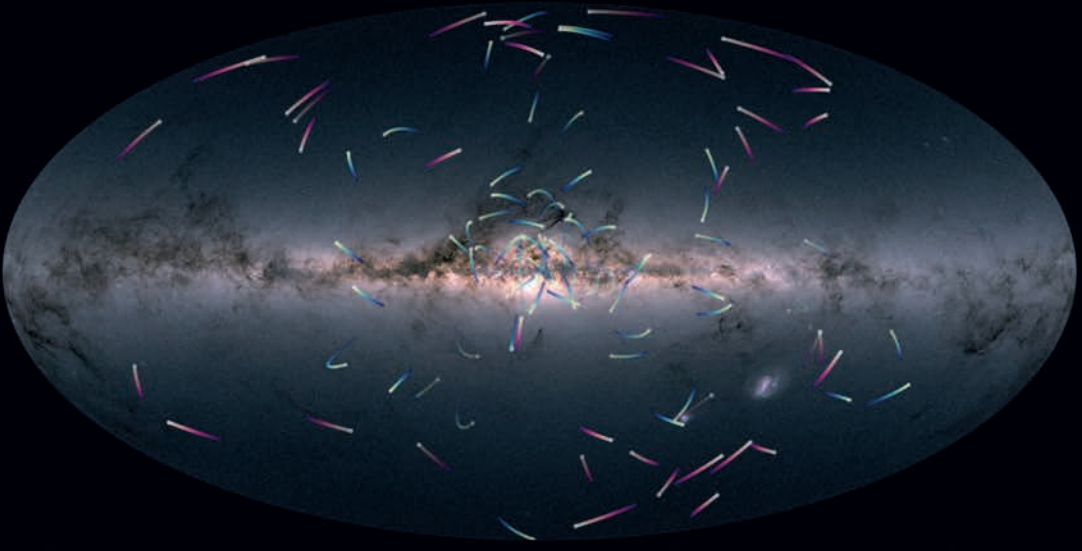
Like other reformist Prussian officials after 1815, Simon sought to negotiate the contradictions of the neo-absolutist state from within. A major concern was to redeem the pledge of a constitution made by Friedrich Wilhelm III on his return to Berlin following the defeat of Napoleon. However, the king backtracked, denying any significant sharing of power. Many reformers heralded Friedrich Wilhelm IV's accession in 1840 as an opportunity to make good the pledge. However, the monarch's feudal attitudes exacerbated tensions.

Simon rose to the challenges of those years with remarkable audacity. When he was invited to review the Prussian education system in 1841, his bold vision for vocational education was deemed unacceptable to established interests. His advice that the government should seek broad public support was anathema. In 1845 Simon resigned over legislation to curtail an independent judiciary – for him the cornerstone of any constitutional settlement – and joined the opposition. His tract of 1847, *To Accept or to Reject?*, mobilised popular opinion against the king's constitutional decree. This contributed to the escalating climate of revolt, which ushered in the revolution and Simon's prominent role in the Frankfurt Parliament. Following the Assembly's dissolution, Simon pursued his constitutional mission from Swiss exile.

Our project will yield a digital edition of Simon's papers, charting all stages of his life and work, three articles and a first critical biography.

Opposite

Simon's hand-drawn map of the area around Malchow in Brandenburg, from Simon's diary of September 1828.



Dynamics of the inner Milky Way with Gaia

Jason Sanders is using ground-breaking satellite data to unravel the mysteries of the formation and evolution of our Galaxy, the Milky Way

Our understanding of the Milky Way is rapidly changing, all thanks to the wonderful new data from the Gaia satellite. Launched in December 2013, Gaia is constantly scanning the night sky, mapping out the structure of our Galaxy. From these observations, Gaia tells us how far away each star is (through triangulation) and also how fast the stars are moving. Not only do we have a 3D map of our Galaxy, but a moving 3D map! The quantity (~10,000 more stars surveyed than its predecessor, Hipparcos) and quality (Gaia can measure the growth of an astronaut's hair on the Moon) are truly unprecedented.

The Gaia data gives us our best ever view of the present structure of our Galaxy. However, the history of our Galaxy is locked up in the stars. Whilst a star moves round our Galaxy during its lifetime, its internal properties remain approximately fixed, retaining the memory of where the star was born. Coincident to the arrival of the Gaia data, large spectroscopic surveys are delivering detailed observations of the internal compositions of millions of stars. My planned research will use this new data to build models of the structure, history and evolution of our Galaxy. Combining together the present view of our Galaxy from Gaia with the historic view from the spectroscopic surveys, I will piece together the evolution of our Galaxy. We can only conduct a detailed study of the formation of the galaxy in the Milky Way, so such work is critical to understanding all galaxies.

There are two key goals of my research. The first goal is to dynamically map the inner bulge of our Galaxy. This is where the majority of the stars in our Galaxy reside and where the oldest stars in our Galaxy formed. I will characterise the structure of different stellar populations in the bulge revealing its formation process. A second goal is to use the Gaia data with the spectroscopic surveys to produce age maps of the Milky Way disc stars. With ages of stars we measure how the Galactic disc has formed and evolved as well as the importance of different dynamical processes that shape galaxies.

www.cosmos.esa.int/web/gaia/

Satellites of the Milky Way: the motions of globular clusters (blue) and dwarf galaxies (purple) of the Milky Way as measured by Gaia overlaid on Gaia's view of the entire sky. Image: ESA, Jason Sanders, Fritz et al. 2018 proper motion data.

Space–time and the manuscript: 4D modelling in medieval book design

Combining
palaeographical
analysis with digital
techniques, James
Sargan will investigate
how manuscript
design reflects and
controls the temporal
aspects of reading

As digital reading technologies develop, many are finding reading on a screen less easy and less successful than reading from a book. One reason for this may be the loss of the book's dimensionality: both its shape and size, the malleability of its physical form, and also the way such a form presents information in time. During my postdoctoral project, I will consider how medieval books were designed to incorporate this temporal dimension, and propose that the makers of vernacular medieval manuscripts deliberately integrated multiple modes of occupying time into these artisanal products.

The preliminary work for this project has uncovered several temporalities at work in English vernacular manuscripts (written after the Norman Conquest of 1066, in both French and English alongside Latin). The first of these are textual: the temporal setting of the narrative itself, and that of the story's narrator, whose presence may interject into the tale. Secondly there are the temporalities experienced by the manuscript's producers and readers, who divide the text up according to their own writing and reading schedules. My project will reveal how these multiple temporalities are supported by the design of the manuscript book: through the layout of text, its decorative features, and its binding structure.

Some manuscripts can provide examples. In the manuscript copy of the English *Romance of Havelok* temporal shifts in the narrative are often visually enhanced by the introduction of coloured capitals: almost half the minor initials fall on temporally significant words, especially 'hwan (when)', 'panne (then)', and 'after'. Similarly, in copies of Layamon's *Brut* chronicle coloured capitals and paragraph marks introduce the reigns of different monarchs. The visual significance of these cues allowed them to act as convenient narrative entry and exit points for readers: visual markers by which scribes and readers could organise the time they spent with manuscripts.

My project will be based in the 'Old Books, New Science' lab at the University of Toronto. Initially, I will be using the manuscript data I have collected to produce a theoretical approach to manuscript temporality. I will then apply the digital modelling techniques the lab is developing in order to consider how the temporal frames of the manuscript interact with one another, producing a visualisation that incorporates all of these dimensions. By combining the use of digital technologies with traditional modes of study this project will produce a new approach to the temporal materiality of manuscript books.

Opposite

Layamon's *Brut* © The British Library
Board. (Cotton Caligula A. IX, f.3).

Incipit hystoria britonum.

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Leverhulme Centre for Wildfires, Environment and Society

Bringing together physical and social scientists to help understand the factors that influence fire and provide guidelines on successful fire management for future generations; this centre will be the first to address wildfire challenges from a global perspective

Huge wildfires have recently caused devastation in Canada, California and Greece, but natural fire can also have positive effects where species and ecosystems rely on them to recycle nutrients or provide new fertile ground.

Fire has long been harnessed by humans but changing practices have meant predicting and managing wildfires has become more challenging. For example, large fires used to clear land for crop or farmland can displace local populations, and 'zero fire' policies have led to the accumulation of burnable material that result in larger-than-normal fires, which destroy lives and property, threaten biodiversity and cultures, reduce air quality, and emit huge amounts of carbon.

Wildfires are also driven by, and can contribute to, climate change: a warming world makes large fires more likely, which in turn releases large amounts of the greenhouse gas carbon dioxide from burnt plant life. Wildfires are more and more recognised as a central aspect of global environmental change, but the role they may have in shaping the Earth's future is poorly understood. We aim to provide a step-change in the scientific understanding of what drives wildfires around the world, and what the future might hold for wildfires and for all the natural and human systems influenced by them.

Wildfires have historically helped to maintain natural ecosystems in many parts of the world, but global warming and changes in land-use mean that they are now occurring in unexpected places and at new times of the year. The consequences are being felt in the natural world as well as affecting people's lives and livelihoods. To date, the study of wildfire has fallen into the cracks between disciplines. This new Centre creates an exciting opportunity to address the complex scientific and social issues with a team of world-class researchers.

Staff at the Grantham Institute, which sits at the heart of Imperial's work on climate change and the environment, helped connect the multidisciplinary team who will lead the new Centre, and will be supporting its future work. The Centre will be led by Dr Apostolos Voulgarakis from Imperial College London's Department of Physics, with collaborators at King's College London, University of Reading and Royal Holloway, University of London.

Camp Fire rages in California,
November 8, 2018. Image: Joshua
Stevens, NASA Earth Observatory.

What Happened Next

A distinctive feature of the Leverhulme Trust is its encouragement of research that is question-led rather than discipline-bound. Here we celebrate six of the most innovatively interdisciplinary research projects enabled by this support. All bridged disciplines with very different worldviews and – although each has its unique interdisciplinary character – all highlight the value of following questions where they lead ...

Interviews by Dr Carolyn Allen

Professor Rosalie David



The pharmacy of the Pharaohs; rewriting ancient history with science



*‘I think that was
a really exciting
discovery ... most of
the treatments are
proper medicines’*

Mummy No. 1766 in the Manchester Museum collection (dated to the first–second centuries CE). Amongst the first cases diagnosed by The Manchester Mummy Team, this woman suffered from chronic schistosomiasis for several years before her death.
© The Manchester Museum, The University of Manchester.

Something didn’t add up. The Manchester Mummy Team had been researching the palaeoepidemiology of schistosomiasis – a disease caused by a parasitic worm, still endemic to Egypt today – and they had diagnosed seventy percent of the samples in the International Ancient Egyptian Mummy Tissue Bank* with the infection. With no effective drugs, these unfortunate folk would have suffered from anaemia, loss of appetite, urinary infection, not to mention a loss of resistance to other diseases. Professor Rosalie David, who leads the biomedical Egyptology work at The University of Manchester, thought it highly unlikely that this dynamic civilisation – known for their extensive and ambitious building programmes – could have been that sickly.

Much of our understanding of the way ancient Egyptians saw disease – and how to cure it – comes from translations of twelve Egyptian medical papyri that date back 3,500 years. The texts include prescriptions for anything from a troublesome toenail to chronic constipation; but classical scholars have always regarded these as mostly spells and potions (crediting the Greeks with discovering rational pharmacy at least a thousand years later). Rosalie thought there might be some medicines amongst the magic. Her project, ‘Pharmacy in Ancient Egypt’ (2006–2009), gathered an international team of Egyptologists, botanists, palaeobotanists, pharmacists, pathologists and chemists to reappraise the herbal remedies in the papyri. Did the plants identified in the existing translations grow – or were they traded – in Egypt when the text was written? If so, would the named ingredients work in the way the prescription indicated? Once validated or revised, they found that not only were the majority of the plant-based remedies therapeutically viable; half of them are still used today, albeit often in synthetic form. “I think that was a really exciting discovery,” Rosalie says “We thought we’d find a preponderance of magic. And there are magical incantations, of course, but most of the treatments are proper medicines.” Amongst the listed remedies, was Balanites oil ‘to soothe burning in the bladder’: a common symptom of schistosomiasis. *Balanites aegyptiaca* is still used by traditional healers for deworming, particularly of animals. And a recent laboratory study found Balanites impressively effective against schistosomiasis, suggesting that it may provide a sustainable alternative to the synthetic drug used in modern therapeutic regimens.

“People look at ancient Egyptian pharmacy very seriously now. Our research put it in context not only with Greek medicines but with modern medicines as well,” Rosalie says. The topic is taught at university and is the focus of an international conference: set up initially to share the project’s results, these meetings continue to provide an important forum for knowledge exchange and interdisciplinary collaboration. The project’s findings highlighted that much was lost in the original translations of the herbal remedies – scholars had often got plant names wrong, with no science to inform their choice – and although it’s unlikely that being anointed on the head with catfish will ever prove effective against migraines, a complete retranslation of all the medical papyri may well uncover yet more method behind the magic. As for the incantations, who’s to say that reciting: “Flow out fetid nose! Flow out son of fetid nose! Flow out, you who break the bones, destroy the skull, and make ill the seven holes of the head,” is any less effective against the cold virus than letting nature take its course?

* The International Ancient Egyptian Mummy Tissue Bank was established with support from an earlier Research Project Grant (1996–1999). A collection of tissue samples from Egyptian mummies held in museums and other institutions worldwide, it provides a major resource for scientists to study early examples of specific diseases, and to develop new epidemiologic projects.

Dr Althea Davies



Integrating science and history in the stories landscapes tell



*‘Traditionally,
environmental
history has always
been history-led ...
but ... if you want to
ask difficult questions
you need to look
beyond that’*

The remains of farm buildings like this one in Assynt (NW Scotland) give little insight into the dynamic interactions between people and biodiversity over the last 400 years. Image: Alistair Hamilton.

“Bleak and somewhat depressing.” Althea Davies’ first impressions of the Scottish uplands matched her expectations of a marginal landscape shaped by a harsh and unforgiving climate. But as she worked on her PhD, she began to see things differently. The diversity she found in the pollen archive suggested that this land – and those who had farmed it – had been seriously underestimated. “It made me very aware how we can bring our own disciplinary biases to the landscapes we study,” Althea says, “and I found myself wondering what past communities had thought of their environment. Did they see it as marginal land?” Were the changes in farming practices she saw reflected in the palynological data, driven by constraints or opportunities? Talking to historian and senior colleague at the University of Stirling, Dr Fiona Watson, it was clear that such questions could not be addressed by either discipline working independently.

This was the inspiration for their project, ‘Written in the Hills’ (2003–2006), which used an integrated interdisciplinary approach to unravel the factors driving ecological changes in the uplands since 1600, such as the rise of Leadour wood, in the Central Scottish Highlands ... and its fall. This wood first appears in the pollen record on the Breadalbane Estate around 1400, reaching its maximum extent between 1560 and 1630. Then the trees are gone. Although surviving documents don’t indicate why it was established, all woods and trees would have been owned by the estate. Tenants were permitted to use the wood for grazing and for timber within limits: and estate records suggest that these limits would have been firmly enforced. The pollen archive attests to the success of this strategy, showing that the wood thrived despite continuous grazing. At least until its sudden demise, caused by the tenants – court records show – in a collective act of vandalism. But what motivated this destruction? Estate documents reveal a dramatic increase in cattle grazing: perhaps, to supply beef to Cromwell’s troops garrisoned nearby. Put simply, the tenants thought that cattle were worth more than trees. From a mortgage document dated 1707, we can deduce that this was an astute business decision, as former tenant, Ewen Ban McAphie, had amassed a £1,000 deposit for Leadour farm. This was a common theme, the researchers found. Overwhelmingly the story that they uncovered was of economics, not climate, driving farmers’ decisions. And for much longer than we tend to think. Attempts to ‘improve’ agricultural profitability around the late eighteenth century, for example, inflicted far more significant ecological impacts than the relatively recent sheep farming practices usually blamed for upland degradation.

The project demonstrated the benefits that an interdisciplinary perspective can bring to understanding landscapes. It also established a new theoretical approach to such research. “Traditionally, environmental history has always been history-led,” Althea explains “but our project was an effort to show that if you want to ask difficult questions you need to look beyond that, integrating the science and history fully.” Their so-called ‘collective model’ – which Althea recommends to anyone embarking on question-led interdisciplinary research – brings disparate disciplines together from the start, developing joint objectives to maximise the potential synergies. Key to its success is factoring in sufficient time to find common ground ... and a degree of disciplinary humility, Althea says; but the reward is a methodology more powerful than the sum of its parts.

Althea is now a lecturer at the University of St Andrews.

Professor Patrick Haggard

Dancing in the brain



Dance movements that audiences tend to like the most – big jumps and extensive movements in space – strongly activate the brain’s ‘motor way of seeing’ suggesting that this brain mechanism is involved in our aesthetic appreciation of dance. Image courtesy of Trinity Laban Conservatoire of Music and Dance. © James Keates.

*‘It can be hard to find
a common language
between dance and
science. Science does
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phenomena to simpler
ones, but you can reduce
and at the same time
still hugely respect’*

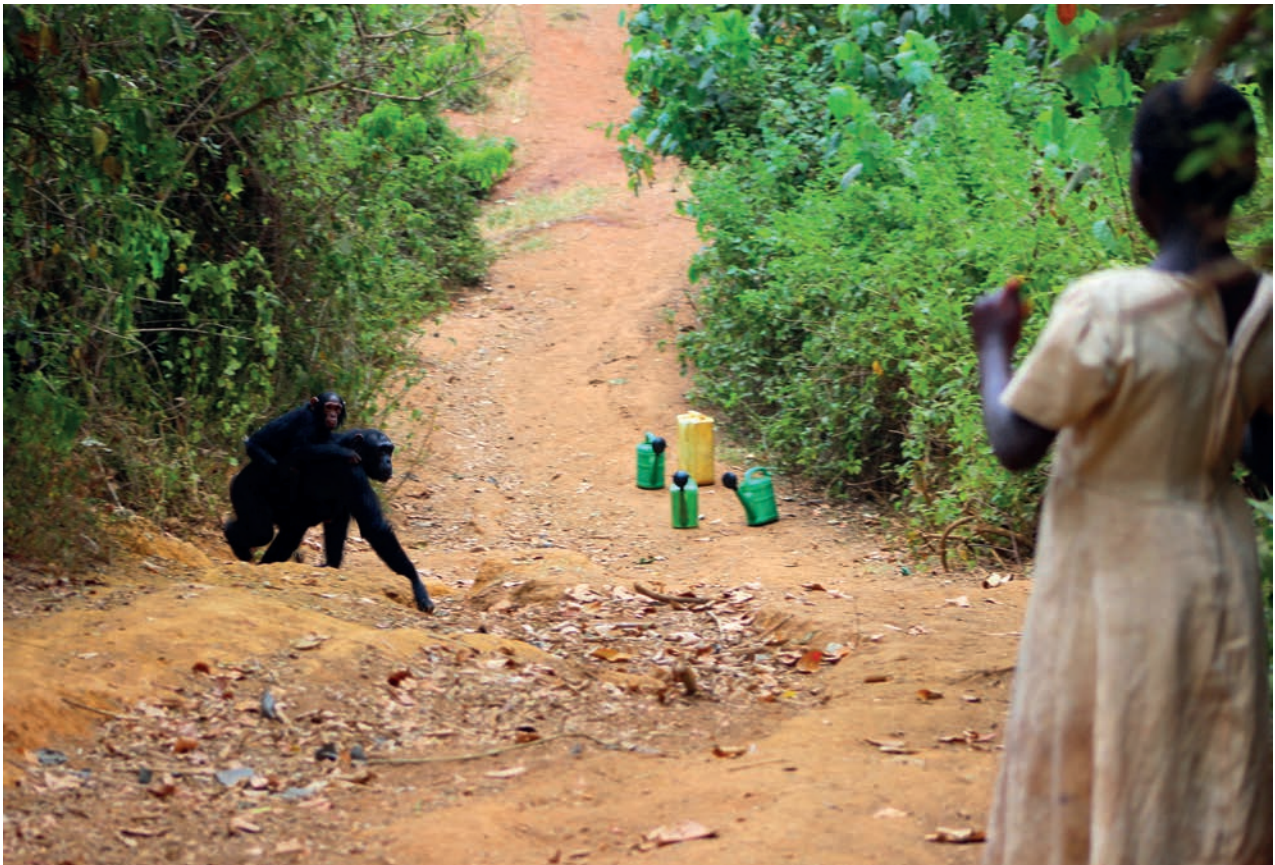
Patrick Haggard says he stumbled into dance, through an unexpected invitation to contribute to Deborah Bull’s BBC TV series, *The Dancer’s Body*. But the ballet star’s enthusiasm for the science of dance was contagious. “It was Deborah who said – ‘Wouldn’t it be great to do an experiment as part of the programme? Can we film something next week?’ – Of course, the time scale is more like next year for scientific research. But it got me thinking,” he says. A professor of neuroscience, Patrick is a leading authority on how the brain controls movement; but dance opened up an extra dimension. What happens in our brain when we watch other people move? And how do we experience dance as ‘more than just moving body parts’? Scientists have traditionally struggled to explain why some stimuli elicit a distinctive aesthetic response in our brain, but Patrick saw that dance – particularly classical dance – made the subject more tractable. Because dancers are so exquisitely trained, he could ask them to perform say a *grand jeté* or a *pas de bourrée*, and he knew they would produce the movement exactly, making experiments easy to construct and replicate.

With two grants from the Leverhulme Trust, and the help of professional dancers and choreographers, Patrick and his team at University College London carried out the first investigations into how the brain sees dance. Their initial studies identified a specific brain mechanism for recognising configurations of the entire human body rather than its individual parts. It involves a motor region of the brain – the premotor cortex – which is concerned with planning and executing actions. This region, they discovered, lights up more in dancers when they are watching a move that is in their repertoire, compared to one that is not, suggesting they dance the move in their mind using the same brain network they use to dance it with their body. Perhaps not surprisingly, the UCL team also found a link between this ‘motor way of seeing’ and our aesthetic response to dance. The type of dance moves that activate the premotor cortex the most when we watch them are also the ones we tend to like the most. However, when we actively judge the aesthetics of a dance movement, areas of the brain known to be involved with sensory perception light up as well. And, intriguingly, when expert dancers make these judgments, they also recruit the brain’s memory systems, apparently comparing what they are watching to a perfect ‘template’. If this is ‘connoisseurship’ in action, then aesthetic appreciation isn’t only a matter of taste; it can also be learnt – and taught.

These pioneering studies helped establish the field of the neuroscience of dance. And there were spin-offs for dance too. Sharing the new science with the dance community, including at a major symposium held at Sadler’s Wells in 2006, helped encourage greater mutual understanding of its implications for both the creators of dance and their audiences. “It can be hard to find a common language between dance and science. Science does reduce complex phenomena to simpler ones, but you can reduce and at the same time still hugely respect. I have no background in dance at all but now I’m a very avid audience member. So I’ve had a much richer experience personally through thinking scientifically about this art form.” Dr Beatriz Calvo-Merino who worked on Patrick’s first project, ‘Brain processes underlying performance art’ (2004–2007) is now at City, University of London where she continues to collaborate with the dance community on neuroaesthetic perception. And Dr Guido Orgs – research assistant on ‘Neuropsychology of choreographic patterns in aesthetic perception of dance’ (2010–2013) – recently set up a new masters course in the Psychology of the Arts, Neuroaesthetics and Creativity at Goldsmiths, University of London.



Taking both sides in human–wildlife conflict: a biosocial approach to conservation



Tensions were rising in Hoima District in Western Uganda. And a tip-off from a local colleague told a depressingly familiar tale: farmers destroying critical wildlife habitats for short-term profits. As competition for increasingly limited forest resources was escalating, so too were levels of conflict between villagers and chimpanzees. But there are two sides to such stories: something traditionally ignored in conservation science, says Professor Catherine Hill of Oxford Brookes University. Her Leverhulme-funded field study, 'Human-wildlife conflict in Uganda' (2005–2008), was designed to understand the worsening situation from both the chimpanzees' and the farmers' point of view. Doctoral student Matt McLennan's research focused on the chimpanzees at Bulindi, one of the project's study sites, and they were behaving pretty badly. Free-living great apes rarely engage with humans, preferring to make themselves scarce, but the Bulindi boys didn't flee. At best they stood their ground when Matt was near; but they could be aggressive too, at times acting together in a terrifying mob.

And the humans proved troublesome too. At a meeting to update local farmers and forest owners on his research, Matt found himself sidelined by members of a local conservation NGO. Speaking in Runyoro, his uninvited guests claimed to be working closely with him; and that he supported their idea to attract tourists on chimpanzee-viewing adventures. Nothing was further from the truth. Not only did the chimps' uncharacteristic behaviour threaten a little too much 'adventure' but the first Matt knew of his supposed collaboration was when a report on the meeting was subsequently broadcast in English on local radio. Three days later loggers began felling trees in the chimps' core area, fearing the ecotourism project would soon result in formal protection of the forest. "That was when we first realised just how political it was," Catherine says: "how different local interest groups within the villages were using aspects of our presence and the project's focus for their own personal and political maneuverings." The incident also highlighted the need to understand the human in human-wildlife interactions. Although originally trained as a biologist, Catherine had become increasingly aware of the limitations of a uniquely natural science approach when people are part of the problem. Trying to understand the issues facing the humans who share landscapes with wildlife, she'd found quantitative methods far from helpful, shifting to an approach that some anthropologists refer to as 'deep hanging out'. "It's basically just talking and listening. An awful lot of listening and a bit of talking," she explains. And listening to the villagers in Hoima District, it was clear that – although they understood the importance of conserving the forest – they felt they had no choice but to cut it down. Without the income this provided, they could not pay for their children's education: an essential investment in the household's future.

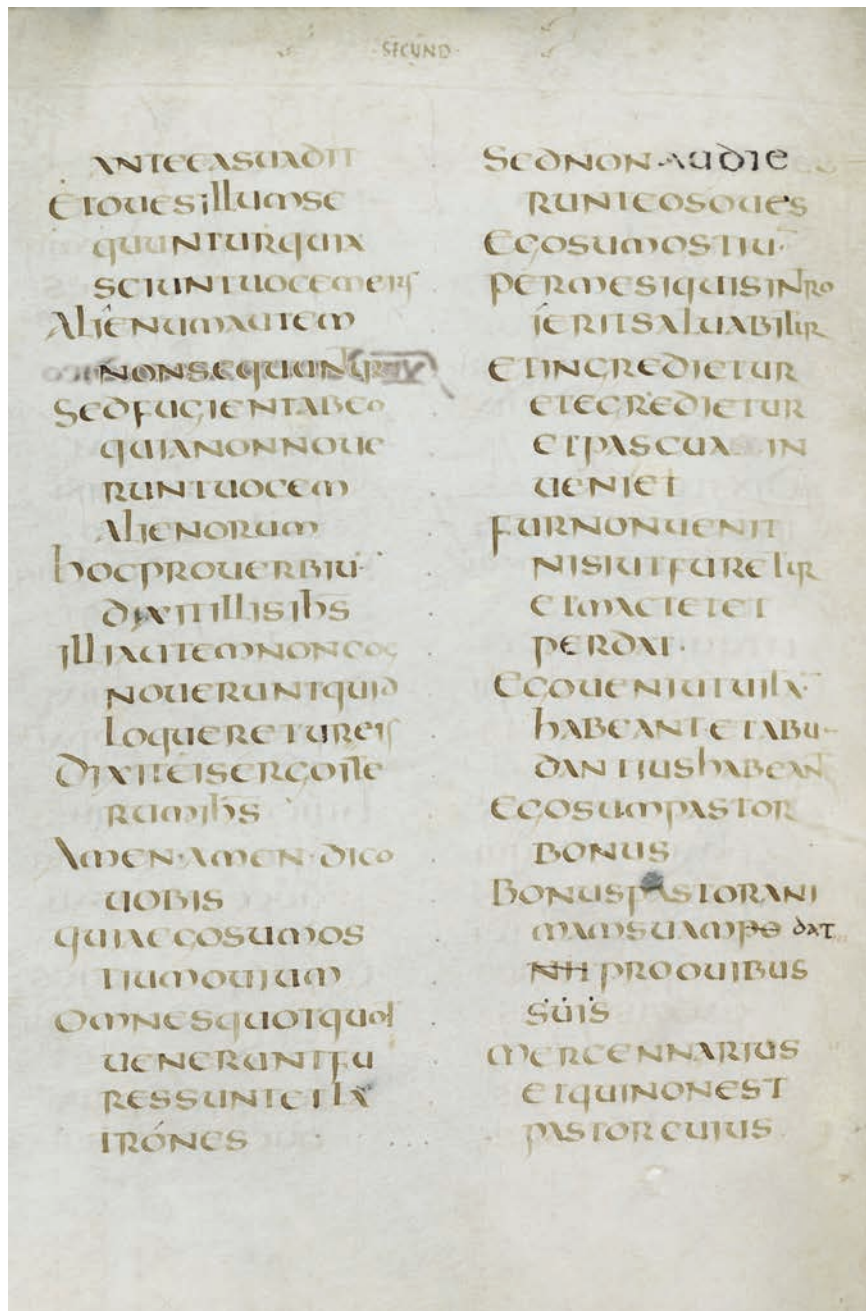
After completing his PhD, Matt returned to study the beleaguered chimpanzees – enabled by a Leverhulme Early Career Fellowship (2013–2016) – and in 2015, he established a local project to try to turn the increasingly bleak situation around. The approach is simple: addressing the main driver of deforestation by sponsoring schoolchildren, while participating households agree to plant rather than cut down trees. And it's working: since the project's inception the chimpanzee community is recovering and the natural forest is beginning to regenerate. Encouragingly, over the last decade, Catherine has seen the conservation community move towards such 'biosocial' approaches and in its interdisciplinary global task force – established in 2016 to address the problem of human-wildlife conflict – she is one of four social scientists: "Scientists and practitioners are recognising that the human dimension is more than just an inconvenience ... to be sustainable, wildlife conservation must work for humans too."

'... the human dimension is more than just an inconvenience ... to be sustainable, wildlife conservation must work for humans too'

Chimpanzees in Bulindi cross village paths and busy main roads every day. As part of the Bulindi Chimpanzee and Community Project, Chimpanzee Monitors explain how to avoid conflict by waiting calmly, allowing the chimps to cross in peace. Image credit: Bulindi Chimpanzee and Community Project.



From texts to textiles; taking genetic analysis beyond the gene



A textual correction introduced to the sixth-century *Gospels of St Augustine* (CCCC MS 286, f. 235v). The text as originally written reads 'Bonus pastor animam suam ponit pro ovibus suis' (the good shepherd places his life before his sheep) and has been corrected to 'Bonus pastor animam suam dat pro ovibus suis' (the good shepherd gives his life for his sheep). Image courtesy of the Master and Fellows, Corpus Christi College, Cambridge, with thanks to Alex Devine and Anne McLaughlin for interpretation.

*‘We just provide a tool
that can answer some
questions very quickly:
it needs traditional
scholarship to ... know
what questions to ask’*

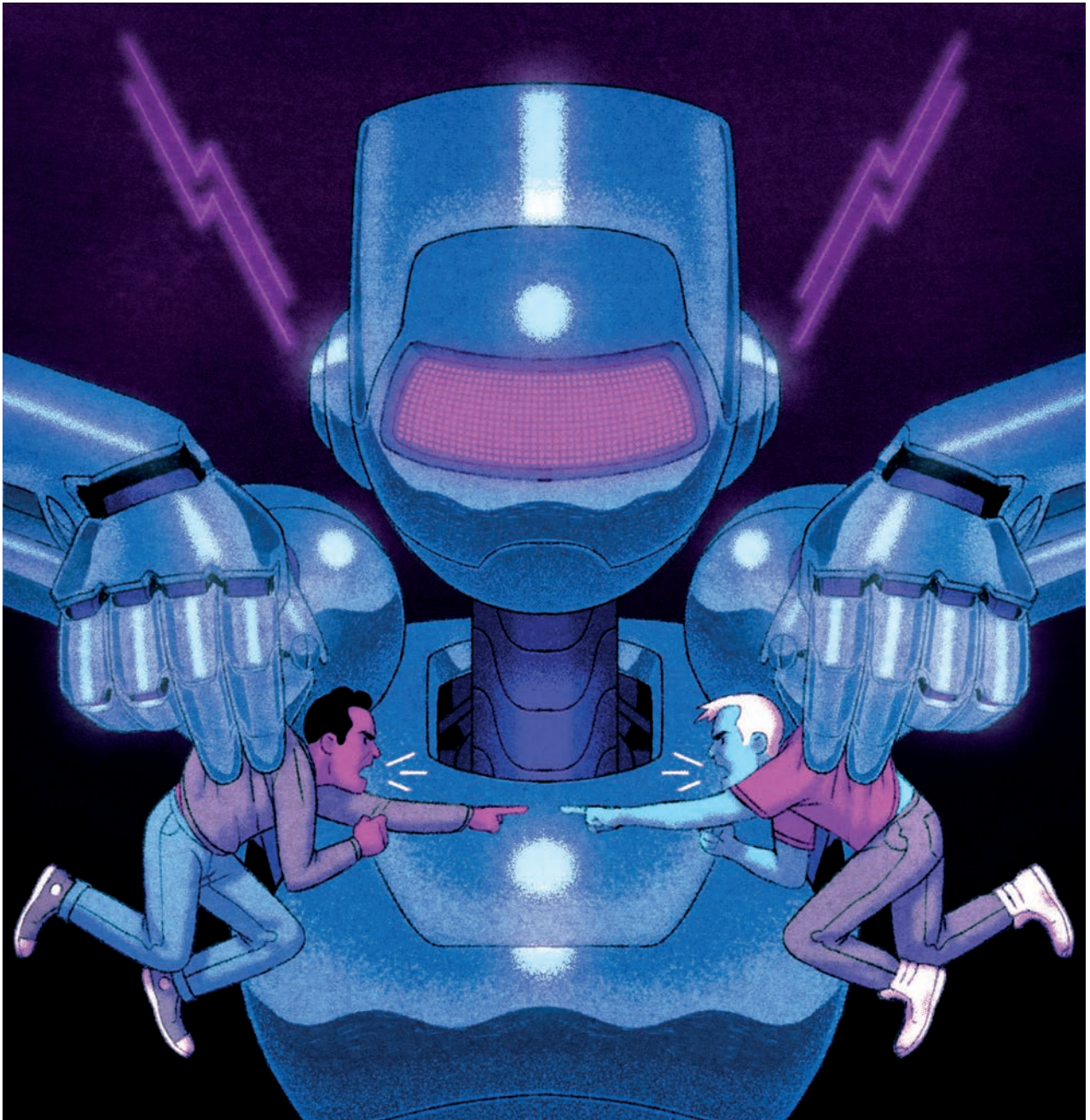
It was a chance meeting over a college dinner. Professor Chris Howe, a plant biochemist at the University of Cambridge, found himself sitting next to a textual scholar. Their research couldn't be more different, or so it seemed, until they discussed what studying literary texts actually entailed. Textual scholars often have numerous – sometimes hundreds – of versions of the manuscript they study: the differences are due to changes introduced by scribes (accidentally or deliberately) as they reproduced the text. To determine who copied whom, scholars analyse the pattern of these ‘mistakes’, allowing them to produce a kind of family tree. But, this involves close comparison of manuscript texts: a particularly labour-intensive activity that becomes ever more unwieldy, the longer the texts, and the greater the number to compare. Chris saw striking parallels to the work he'd been doing that afternoon: analysing patterns of mistakes in DNA sequence data (introduced by enzymes as they copied the genetic information) to identify the evolutionary relationships between plant species. He'd have been awfully late for dinner, without the phylogenetic computer programmes that revolutionised this task. Could such methods crunch through literary data too?

As it happened, another textual scholar, Dr Peter Robinson at De Montfort University, was already working to develop such tools. Using Peter's data and textual expertise, and working with colleague Dr Adrian Barbrook, the group successfully adapted the latest phylogenetic methods to analyse volumes of text that would challenge traditional textual approaches. Then, with support from the Leverhulme Trust, postdoctoral biologist, Dr Matthew Spencer joined them to work on their ‘slightly outrageous’ project STEMMA (2000–2003). And he did that superbly well, Chris says: the team's reconstructions of the transmission of texts – whether from Chaucer or the New Testament – proved very similar to those produced by conventional scholarship; but in a fraction of the time. However, it also became clear that the copying process was more complicated than Chris had at first envisaged. For example, scribes sometimes used more than one variant of an ancestral form of a text to make their own – now hybrid – version. Again, Chris saw clear analogues in evolutionary biology and with a second Leverhulme-funded grant, TEXTNET (2003–2006), researcher Dr Heather Windram refined the methodology by applying more sophisticated phylogenetic programmes designed to pick up such ‘contamination’.

Many textual scholars were sceptical: a computer could be no match for a trained expert. As a challenge, one of Peter's colleagues gave him some of her data from Dante's *Monarchia*. Kept in the dark about what she was (or was not) expected to find – or even the identity of either colleague or text – Heather nevertheless quickly identified one of the manuscripts as a hybrid, even pinpointing where the scribe had moved from one version to another. Today, increasing numbers of textual scholars are embracing phylogenetic methods, and Chris and Heather contribute to regular international workshops that bring this community together. Still, not everyone is a fan, Chris admits: “Some see it as arrogant scientists telling textual scholars what's what. But it's a team effort. We just provide a tool that can answer some questions very quickly: it needs traditional scholarship to provide the data, know what questions to ask, and interpret the answers.” In principle, the approach can be applied to anything that evolves in a similar way. Chris and Heather have been working on musical manuscripts, and it's been used by anthropologists and archaeologists studying anything from folk tales to textiles. In 2011, they coined the term, phylomemetics, for this rapidly expanding, increasingly interdisciplinary field.



Learning how we argue across disciplinary divides



‘What mediators do is nothing short of magic ... We knew if we could make any progress here, it would have significant impact on the field’

The intervention strategies used in successful mediation underpin new argumentation technology designed to support critical thinking. In the longer term, this research could provide software tools to support mediators allowing them to be more effective and efficient in their efforts to resolve conflict. Image: Argument Engines
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www.morganrayschweitzer.com
Instagram: @morganthrillz

“The divisions of the universe are not the same as the divisions of the university”: it’s a quote from Willard Van Orman Quine and for fellow philosopher, Professor Chris Reed, “nowhere is that more true than the study of human reasoning.” Understanding how we reason requires not only theories and methods from philosophy, linguistics, psychology, mathematics, computer science and artificial intelligence (AI), but also an academic grasp of the human domains where that reasoning is taking place: from courtrooms to boardrooms, the political to the personal. So it’s inevitable that Chris and his team at the University of Dundee find themselves working across the natural sciences, through to the humanities and the social sciences, to develop theories of how humans argue and express their reasoning: theories that can teach machines to argue too.

Since Aristotle, philosophers have taught that arguments formed by logical deduction are the ‘gold standard’. But we rarely use such textbook reasoning. And in the real world it doesn’t work very well. On the other hand, when we use more complex, messy arguments – traditionally called fallacies – we often come to perfectly reasonable conclusions. In his first Leverhulme-funded project, ‘Argumentation schemes in natural and artificial communication’ (2002–2004), Chris worked with Canadian philosopher, Doug Walton, to establish the first dataset of these non-deductive reasoning patterns. Although quite small – only about 500 arguments – it was an impressive start. “Back then, to be perfectly honest, we were making it up as we went along. Picking data from here and there,” Chris remembers. “The problem was we had nothing to compare to because – surprisingly – no one had ever even attempted it before.” The project sparked interest worldwide, with at least forty other labs taking up the challenge: many sending staff to Dundee for training. The team has since identified a reliable source of outstanding debate. You might hope they’d found it in parliament but – as Chris (rather diplomatically) says – “there are other things going on there than just high quality argument”. Instead, they turned to debates on BBC Radio 4’s Moral Maze programme, collecting thousands of claims and counterclaims in datasets that provide rich pickings for later analysis.

In his next Leverhulme-funded project, ‘Dreams: Dialogue-based Exploration of Argument and Mediation Space’ (2013–2016), Chris took on what he describes as “the most difficult kind of argument you can imagine”. “What mediators do is nothing short of magic,” he explains. “Somehow, they take people who fundamentally deeply disagree – and deeply care about the outcome – more often than not moving them to agreement. It’s very, very clever. We knew if we could make any progress here, it would have significant impact on the field.” They did ... and it already has. One of the more serendipitous returns came from studying how mediators take what one participant said and tweak it to make it more palatable to the other. Part of this behaviour is reframing, or essentially ‘reporting’ previous arguments back, and the theory they developed to understand how mediators do this underpins the ‘Evidence Toolkit’: Dundee’s pioneering argument mining technology which helps users to dissect news articles, teasing out what’s ‘fake’ and what’s not. Rolled out to thousands of schools across the UK in 2018, it’s part of a BBC initiative to improve media literacy. And it is in this sphere – helping humans with critical thinking – that Chris sees the most potential for AI: “It’s really not about replacing human arguers. That’s so far beyond the state of the art it’s not worth considering. But AI that chips in to help humans reason better? That *could* really change the universe.”

Grants Awarded in 2018

Find listings for all grants made by the Trust during 2018. Details are given for each of the funding schemes across Sciences, Humanities and Social Sciences

Leverhulme Research Centres

Institutions received up to £10,000,000 over ten years.

*Leverhulme Centre for
Wildfires, Environment
and Society*

Dr Apostolos Voulgarakis
Imperial College London

*Leverhulme Centre for
Demographic Science (LCDS)*

Professor Melinda Mills
University of Oxford

*Leverhulme Centre for
Anthropocene Biodiversity*

Professor Chris Thomas
University of York



Research Project Grants

Sciences

Professor Dave Adams
University of Glasgow
*Gel-based photoelectrodes
for clean fuels*
£174,952

Professor Simon Aldridge
University of Oxford
*Turning aluminium
chemistry on its head:
aluminum nucleophiles*
£277,661

Dr Alessio Alexiadis
University of Birmingham
*Martian geopolymers: from
building materials to water-
recycling membranes*
£76,450

Dr Andrew Armour
University of Nottingham
*Circuit quantum
electrodynamics through
the looking glass*
£155,870

Professor Emilio Artacho
University of Cambridge
*The non-equilibrium
electronic steady state for
nuclei shooting through solids*
£185,069

Dr Maria Arantazu
Barrios Lafuente
University College London
*The influence of sex on
learned odour preferences*
£191,813

Dr Cedric Beaume
University of Leeds
*Melt fracture: a finite
amplitude instability*
£149,625

Dr James Bendle
University of Birmingham
*Unlocking the toolbox of
soil bacterial biomarkers*
£283,946

Dr Martin Birkett
Northumbria University
*Super hard biocompatible
coatings of beta Ti₃Au*
£224,630

Dr Anthony Bishopp
University of Nottingham
*To root or not to root: an
investigation into structural
reduction in duckweeds*
£172,041

Dr Bela Bode
University of St Andrews
*Understanding sensitivity
gains in pulse EPR on
multimeric membrane
proteins*
£131,468

Professor Christopher Bowen
University of Bath
*Pyroelectric water splitting
and water treatment using
ferroelectric materials*
£124,367

Professor Ross Boyle
University of Hull
*Photo-activated surface
coatings to combat bacterial
contamination*
£249,057

Professor Lee Brammer
University of Glasgow
*Stellated molecular clusters:
porous materials by designed
packing inefficiency*
£174,952

Professor Fernando Bresme
Imperial College London
*Active nano-heaters: new
approaches to rectify
hyperthermia*
£219,111

Dr Heidi Burdett
Heriot-Watt University
*Elucidating the light
harvesting strategy of the
deepest living marine algae*
£244,049

<p>Professor Glenn Burley University of Strathclyde <i>Macromolecular construction of DNA networks directed by the fluoruous effect</i> £334,937</p>	<p>Dr Antony Dodd University of Bristol <i>The adaptive significance of circadian gating</i> £210,195</p>	<p>Professor Tom Freeman Cardiff University <i>Active audiovisual perception: listening and looking while moving</i> £239,204</p>	<p>Dr Lydia Hallis University of Glasgow <i>Martian fluid compositions: the habitability of two ancient environments</i> £76,243</p>
<p>Professor Tracey Chapman University of East Anglia <i>MicroRNAs as agents of sexual conflict and cooperation</i> £198,124</p>	<p>Professor Maurice Elphick Queen Mary, University of London <i>Stomach turning: neural mechanisms of extra-oral feeding</i> £213,916</p>	<p>Dr Matthew Fuchter Imperial College London <i>Absolute symmetric synthesis using spin polarised electronchemistry</i> £371,863</p>	<p>Dr Mick Hanley University of Plymouth <i>Geographical patterns in seedling defence and herbivore interactions</i> £171,046</p>
<p>Dr Ewan Clark University of Kent <i>Phosphenium cations: phospho-Friedel-Crafts intermediates for modern synthesis</i> £85,346</p>	<p>Professor Neil Wyn Evans University of Cambridge <i>Dark matter astrophysics with the Gaia satellite</i> £150,285</p>	<p>Dr Matteo Fumagalli Imperial College London <i>A deep learning approach to quantify natural selection in Latin Americans</i> £179,899</p>	<p>Professor Kevin Graham Hardwick University of Edinburgh <i>Quantitating and manipulating aneuploidy in Cryptococcus neoformans</i> £172,113</p>
<p>Professor Simon J Clarke University of Oxford <i>Chemical tuning of topological materials</i> £86,140</p>	<p>Professor Susan Evans University College London <i>The early history and evolution of salamanders</i> £334,236</p>	<p>Professor Beverley Glover University of Cambridge <i>TTG1, a multifunctional plant protein, has a novel role in circadian regulation</i> £186,662</p>	<p>Dr Jill Harrison University of Bristol <i>The innovation of branching in plants</i> £192,806</p>
<p>Dr Marco Conte University of Sheffield <i>Valorisation of recycled glass: from waste to a catalytic resource</i> £181,438</p>	<p>Dr Tijmen Euser University of Cambridge <i>Optofluidic microreactors for advanced photocatalysis</i> £249,555</p>	<p>Professor David Glover University of Cambridge <i>The necessity of centrosomes and mechanism for centriole loss during invertebrate oogenesis</i> £214,676</p>	<p>Professor Miles R C Hewstone University of Oxford <i>Antagonistic secondary transfer effects of intergroup contact</i> £149,826</p>
<p>Dr Kokou Dadzie Heriot-Watt University <i>New continuum paradigm for fluid flows in micro- and nano-scale structures</i> £255,418</p>	<p>Professor Michael Farber Queen Mary, University of London <i>Probabilistic and deterministic topology</i> £257,621</p>	<p>Professor David Grainger University of Birmingham <i>Prokaryotic transcription: a new direction?</i> £170,739</p>	<p>Professor Atsushi Higuchi University of York <i>Euclidean and in-in formalisms in static spacetimes with Killing horizons</i> £133,096</p>
<p>Dr Johnathan Dalzell Queen's University Belfast <i>Understanding the molecular basis of aggression in nematodes</i> £195,819</p>	<p>Dr João Faria Martins University of Leeds <i>Emergent physics from lattice models of higher gauge theory</i> £110,665</p>	<p>Dr John Griffin Lancaster University <i>Development of solid-state solar thermal fuels</i> £149,748</p>	<p>Dr Richard Hill University of Nottingham <i>Inflation and collapse of drops and bubbles levitated by a superconducting coil</i> £218,699</p>
<p>Professor Anuj Dawar University of Cambridge <i>Logical fractals</i> £198,918</p>	<p>Dr Marc Fivaz University of Greenwich <i>Bioelectric signalling in stem cell models of human cortical development</i> £242,024</p>	<p>Professor Gregory Gutin Royal Holloway, University of London <i>Analysing security-aware workflows</i> £209,740</p>	<p>Dr Paul Hodgkinson Durham University <i>Making sense of disorder in molecular solids</i> £280,620</p>
<p>Dr Urška Demšar University of St Andrews <i>Uncovering the mechanisms of migratory bird navigation with big data analytics</i> £247,672</p>	<p>Dr William Fletcher University of Manchester <i>Holocene glacier dynamics and environmental change in the High Atlas, Morocco</i> £293,357</p>		

<p>Professor Michael Holdsworth University of Nottingham <i>Discovering the molecular mechanism of plant adaptation to altitude</i> £172,132</p>	<p>Dr Igor Krasovsky Imperial College London <i>Gaps in the spectrum of random and quasiperiodic matrices</i> £251,761</p>	<p>Dr Patrick Mahoney University of Kent <i>Biorhythm of childhood growth</i> £294,391</p>	<p>Professor Angelos Michaelides University College London <i>New paradigms in catalyst design: efficient CH₄ conversion by single atom alloys</i> £183,167</p>
<p>Professor Neil Hunt University of York <i>Sharpening the '[NiFe]': revealing the secrets of biological H₂ conversion</i> £207,750</p>	<p>Dr Jessica Kwok University of Leeds <i>Biopolymer physics defines perineuronal net morphology and synapse formation</i> £298,273</p>	<p>Professor John Maltby University of Leicester <i>Resilience in science, technology, engineering, and mathematics learning</i> £147,717</p>	<p>Dr Emad Moeendarbary University College London <i>The mechanobiology of ageing neurons, memory formation and cognitive resilience</i> £280,982</p>
<p>Professor Gáspár Jékely University of Exeter <i>Reconstruction of the pre-bilaterian ancestry of neuropeptide signalling</i> £441,196</p>	<p>Dr Eli Lazarus University of Southampton <i>Unnatural dynamics of flood deposits in built environments</i> £281,028</p>	<p>Professor Sanjay Manohar University of Oxford <i>Predicting neural activity during working memory and attention</i> £102,941</p>	<p>Dr Nicola Morley University of Sheffield <i>High entropy alloy thin films: the next big thing in soft magnetic materials?</i> £207,952</p>
<p>Dr Kim Jelfs Imperial College London <i>Computational prediction of large organic polyhedra</i> £110,524</p>	<p>Professor Martin Lee University of Glasgow <i>Were hypervelocity impact structures cradles of life?</i> £187,509</p>	<p>Professor Anna Marmodoro Durham University <i>Part-whole relations within the fundamental potentialities in nature</i> £297,361</p>	<p>Professor Otto Muskens University of Southampton <i>Extraordinary nonlinearities of light in complex systems</i> £319,291</p>
<p>Professor Joseph Keddie University of Surrey <i>BioCoatings: painting bacteria on surfaces for sustainable processes</i> £229,774</p>	<p>Professor Graham J Leggett University of Sheffield <i>Synthetic biological control of quantum optics</i> £354,796</p>	<p>Professor Alfonso Martinez Arias University of Cambridge <i>An in vitro study of mechanochemical signalling during mammalian gastrulation</i> £293,278</p>	<p>Professor Anatoly Neishtadt Loughborough University <i>Adiabatic invariance in two-frequency dynamical systems with separatrix crossing</i> £141,243</p>
<p>Dr Stefan Kepinski University of Leeds <i>Towards the formulation of a general theory of root gravitropism</i> £320,387</p>	<p>Professor Tim Lenton University of Exeter <i>Quantifying the changing resilience of the climate system and ecosystems</i> £276,340</p>	<p>Dr Armando Martino University of Southampton <i>The Lipschitz metric and the conjugacy problem for automorphisms of free groups</i> £190,455</p>	<p>Professor Adam Nelson University of Leeds <i>Phenotype-directed emergence of unnatural products</i> £319,815</p>
<p>Professor Rebecca Kilner University of Cambridge <i>Stimulation of female fecundity by males: causes and evolutionary consequences</i> £281,958</p>	<p>Professor Igor Leshanovsky University of Nottingham <i>Open quantum cellular automata</i> £193,920</p>	<p>Professor Stephen Matthews Imperial College London <i>Inspiration for a new phosphatidic acid imaging probe from Apicomplexans</i> £199,438</p>	<p>Dr David Nelson University of Strathclyde <i>Defining, quantifying, and understanding selectivity paradigms in iridium-catalysed C-H activation reaction</i> £177,327</p>
<p>Professor Peter Knowles Cardiff University <i>Reaction orbitals: a new paradigm for chemical reaction mechanisms</i> £100,858</p>	<p>Professor Philip Lightfoot University of St Andrews <i>A new family of layered perovskite materials with diverse functionality</i> £118,374</p>	<p>Professor Sven Mattys University of York <i>Cognitive listening: speech perception in noise within a cognitive framework</i> £267,823</p>	<p>Dr Darren Obbard University of Edinburgh <i>A laboratory model for antiviral immunity in molluscs</i> £201,732</p>
	<p>Dr Derek MacMillan University College London <i>A combined activation/tethering strategy to lariat peptides</i> £185,286</p>		

<p>Dr Emanuele Paci University of Leeds <i>Rational design of dynamic molecules for enhanced multivalent binding</i> £248,699</p>	<p>Dr Filippo Prischi University of Essex <i>Flipping the switch; regulating protein synthesis in response to stress</i> £238,348</p>	<p>Dr Christian Saemann Heriot-Watt University <i>The mathematics of M5-branes</i> £223,795</p>	<p>Professor Mark Sephton Imperial College London <i>What lies beneath? Using plume chemistry to reveal the nature of solar system bodies</i> £198,457</p>
<p>Professor Mauro Paternostro Queen's University Belfast <i>Ultracold quantum thermo-machine</i> £346,426</p>	<p>Dr Christopher Richards University of East Anglia <i>Stereochemical evolution for catalyst discovery</i> £117,456</p>	<p>Dr Abhishek Saha Queen Mary, University of London <i>New investigations in automorphic forms: analytic and arithmetic interfaces</i> £293,685</p>	<p>Dr Alexey Sergeev University of Liverpool <i>Arene functionalisations through metal-mediated scission of aromatic rings</i> £121,770</p>
<p>Dr Alessandro Patti University of Manchester <i>Macromolecular diffusion in crowded colloidal suspensions</i> £231,771</p>	<p>Dr Stylianos Rigopoulos Imperial College London <i>Towards a theory for population balance in turbulent flow</i> £154,166</p>	<p>Dr Paul Saines University of Kent <i>Low dimensional order in magnetic metal-organic frameworks and their analogues</i> £219,792</p>	<p>Professor Neal Skipper University College London <i>Uncovering hidden phases of metal-amine solutions: glasses to superconductors</i> £191,579</p>
<p>Dr Robert Phipps University of Cambridge <i>Catalytic enantioselective radical chemistry</i> £114,468</p>	<p>Dr Maxie Magdalena Roessler Queen Mary, University of London <i>Film-electrochemical EPR: a new method to investigate redox-based catalysis</i> £274,302</p>	<p>Dr Karuna Sampath University of Warwick <i>Understanding the basis of sex bias</i> £282,992</p>	<p>Dr Valeriy Slastikov University of Bristol <i>Nonlocality and topological structures in magnetic materials</i> £224,806</p>
<p>Professor Martin Pickering University of Edinburgh <i>Prediction during comprehension: do people predict from their own perspective?</i> £131,322</p>	<p>Dr James Rosindell Imperial College London <i>Predicting global biodiversity with mechanistic simulation models</i> £261,180</p>	<p>Professor Guido Sanguinetti University of Edinburgh <i>Stochastic reactions in crowded cells: theories, inference and implications</i> £167,924</p>	<p>Professor Chris Soulsby University of Aberdeen <i>Isotopes in ecohydrological models to manage land-use change impacts (ISO-LAND)</i> £336,540</p>
<p>Professor Oleg Pikhurko University of Warwick <i>Measurable combinatorics</i> £279,935</p>	<p>Dr Katherine Roucoux University of St Andrews <i>Valuing intact tropical peatlands: an interdisciplinary challenge</i> £398,932</p>	<p>Professor Erin Saupe University of Oxford <i>Constraining the frequency and tempo of niche evolution on long time scale</i> £160,781</p>	<p>Professor Peter Swain University of Edinburgh <i>Quantifying and modelling cellular decision making at the single-cell level</i> £200,264</p>
<p>Dr Marco Polin University of Warwick <i>Unravelling phototaxis-photosynthesis connections in a model microalga</i> £294,096</p>	<p>Professor Alexander Ruban Queen Mary, University of London <i>The role of the minor light harvesting antenna in photoprotection</i> £212,606</p>	<p>Dr Andreas Schmitt University of Southampton <i>Dense nuclear and quark matter in neutron stars from holography</i> £92,587</p>	<p>Professor Nicholas Talbot The Sainsbury Laboratory <i>Determining the molecular basis of the lichen symbiosis</i> £270,556</p>
<p>Dr Steve Portugal Royal Holloway, University of London <i>Spots, stars or stripes? The evolution of eggshell surface topography</i> £113,799</p>	<p>Dr Ben Russell University of Edinburgh <i>Earthen empire: earth and turf building in the Roman North-West</i> £492,048</p>	<p>Dr Carola-Bibiane Schönlieb University of Cambridge <i>Unveiling the invisible: mathematics for conservation in arts and humanities</i> £297,184</p>	<p>Professor Maximilian Telford University College London <i>Deep homology of spiral cleavage in lophotrochozoan embryology</i> £189,684</p>

Dr Colin Torney
University of Glasgow
Multiscale inference for understanding collective animal movement
£242,278

Dr Amaury Triaud
University of Birmingham
Empirical evidence and theoretical investigations on circumbinary planets
£378,244

Professor Sergei Turitsyn
Aston University
Riemann–Hilbert problem and geometrical approach in optical communications
£419,311

Dr Pedro Vale
University of Edinburgh
Mitochondrial genetic effects on innate immunity in Drosophila
£276,776

Dr Mario Vallejo-Marin
University of Stirling
Buzz pollination: integrating bee behaviour and floral evolution
£368,635

Professor Jasper van Thor
Imperial College London
Molecular movies: accessing electronic dynamics of photosynthesis
£316,223

Professor Richard Walker
University of Oxford
Neotectonics, earthquakes, palaeoseismology and tsunamis in the Eastern Mediterranean
£214,933

Professor Richard Walker
University of Oxford
The earthquake ruptures of Iran and Central Asia
£359,347

Dr Sam Wass
University of East London
New insights into how the infant brain subserves dynamic social interactions
£327,093

Dr Allan Watson
University of St Andrews
Must reductive elimination be the product-determining event?
£144,421

Dr Edze Westra
University of Exeter
Sexual selection: studying the evolution of female choosiness in bacteria
£273,749

Professor Philip Woodman
University of Manchester
Environmental control of membrane expansion: from yeast to nervous systems
£207,635

Professor Simon Woodward
University of Nottingham
Viable cycloacenes via a designed approach
£138,264

Professor Klaas Wynne
University of Glasgow
Delocalised phonon-like modes in organic and bio-molecules
£341,450

Professor Martin Richard Yeomans
University of Sussex
Why some foods smell sweet: the neural basis of odour–taste associations
£371,770

Dr Yulia Yuzenkova
Newcastle University
Non-canonical capping of RNA in bacteria and mitochondria
£277,059

Professor Magdalena Zernicka-Goetz
University of Cambridge
The timing mechanism of the early mammalian embryo
£182,177



Humanities

Dr Patti Adank

University College London
Mechanisms governing imitation of speech
£177,789

Dr Theodora Alexopoulou

University of Cambridge
Linguistic typology and learnability in second language
£134,664

Dr Richard Breheny

University College London
Alternatives in the foundations of a theory of implicit meaning
£185,016

Professor Jagjit Chadha

National Institute of Economic and Social Research
Sticky prices and interwar economic fluctuations
£104,409

Ms Isobel Clouter

British Library
True echoes: reconnecting cultures with recordings from the beginning of sound
£448,900

Dr Chantal Conneller

Newcastle University
Unmasking masks: rethinking concepts of personhood in Europe 40,000–4,000 BCE
£108,685

Dr Jacob Copeman

University of Edinburgh
Gurus, anti-gurus, and media in north India
£259,256

Dr Ian Cummings

University of Reading
Similarity-based interference in native and non-native sentence comprehension
£201,984

Dr Aidan Feeney

Queen's University Belfast
The nature and function of relief
£221,978

Professor Ralph Fyfe

University of Plymouth
Long term biodiversity and human land-use change
£263,127

Dr Hajnalka Herold

University of Exeter
Glass networks: tracing early medieval long-distance trade, c. 800–1000 CE
£85,056

Professor Julia Hillner

University of Sheffield
Women, conflict and peace: gendered networks in early medieval narratives
£166,025

Dr Emma Hunter

University of Edinburgh
Another world? East Africa and the global 1960s
£371,177

Dr Helen Jacobsen

The Wallace Collection
Royal French furniture: Jean-Henri Riesener and his legacy
£75,992

Professor Colin Kidd

University of St Andrews
After the Enlightenment: Scottish intellectual life, 1790–1843
£470,556

Professor Clark Lawlor

Northumbria University
Writing doctors: representation and medical personality, c. 1660–1832
£295,430

Dr John Lowe

University of Oxford
Uncovering Sanskrit syntax
£338,094

Professor Jessica Malay

University of Huddersfield
Autobiographical acts in seventeenth-century England, Scotland, Wales and New England
£335,595

Professor Chloë Marshall

University College London
Breaking into sign language: the role of input and individual differences
£383,007

Professor Andrew Mason

University of Warwick
Appearance, discrimination and disadvantage
£200,002

Professor Sonia Massai

King's College London
Wartime Shakespeare: the fashioning of public opinion through performance
£180,437

Dr Jérôme Micheletta

University of Portsmouth
Rethinking complexity in facial communication systems
£304,714

Professor Andrew Nevins

University College London
Agreement mismatches in experimental syntax: from Slavic to Bantu
£328,018

Dr Michael Niblett

University of Warwick
World literature and commodity frontiers: the ecology of the 'long' twentieth century
£278,994

Professor Stephen Parker

Cardiff University
Double agent: Heinrich Simon's constitutional mission in neoabsolutist Prussia
£354,525

Professor Ad Putter

University of Bristol
The literary heritage of Anglo–Dutch relations, c. 1050–1550
£363,449

Professor David Saad

Aston University
The futility of being selfish
£190,876

Dr Alexandra Sapoznik

King's College London
Bees in the medieval world: economic, environmental and cultural perspectives
£387,679

Dr James Smith

Durham University
The Political Warfare Executive, covert propaganda and British culture
£328,378

Professor Robbie Sutton

University of Kent
Moral memory bias about the sentience of animals
£192,118

Dr Stephanie Wynne-Jones

University of York
Urban ecology and transitions in the Zanzibar Archipelago
£318,344

Social Sciences

Dr Paolo Campana

University of Cambridge
Organised crime and illegal governance in local communities in Britain
£119,604

Dr Glenys Caswell

University of Nottingham
Exploring the social management of lone deaths
£108,609

Professor Sarah Louise Holloway
Loughborough University
Tutored childhoods: parenting cultures, youth transitions and social mobility
£194,312

Dr Andrew Robert Holmes
Queen's University Belfast
Fundamentalism as an Ulster phenomenon? Popular Protestantism, 1859–1939
£95,082

Dr Kelly Kollman
University of Glasgow
Responsible lobbyists? Corporate social responsibility and public policy
£108,609

Dr Rebecca Larkin
Nottingham Trent University
Orthographic awareness and spelling strategies in children with SLI
£118,155

Dr Covadonga Meseguer
London School of Economics and Political Science
Agents of change? Emigrants and the state in contemporary Mexico
£187,788

Dr Lauge Poulsen
University College London
Left behind: protecting British capital abroad, 1945–1989
£154,725

Professor John Turner
Queen's University Belfast
The rise of corporate titans: CEOs in the UK, 1900–2016
£93,797

Professor Vron Ware
Kingston University
The military in our midst: war preparation and community on Salisbury Plain
£186,260



Early Career Fellowships

Early Career Fellows received fifty percent of the salary costs of a three-year research position, up to £25,000 a year, with the host university providing the balance. Research expenses of £6,000 a year were also available.

Sciences

Dr Fabrizio Alberti
University of Warwick
Engineering a yeast cell factory for production of high value meroterpenoids

Dr Francesca Arrigo
University of Strathclyde
Don't look back – non-backtracking walks in complex networks

Dr Daniel Barrios-O'Neill
University of Exeter
Towards a systematic understanding of habitat structure and trophic interactions

Dr Christopher Cooney
University of Sheffield
Sexual signal divergence and the cycle of speciation

Dr Gabrielle Davidson
University of Cambridge
Interactions between microbiome, cognition and behaviour in a wild population

Dr Bart de Nijs
University of Cambridge
Nanoplasmonic ultra-confinement of light for sensing, activation and reactions

Dr Claire Donnelly
University of Cambridge
Domain wall dynamics in three-dimensional magnetic nanostructures

Dr Liam Dougherty
University of Liverpool
Understanding the link between mate choice and the environment

Dr Lloyd Fletcher
University of Southampton
Imaging impact: image-based methods for dynamically testing bone

Dr Heye Freymuth
University of Cambridge
Fluid flow in the mantle beneath volcanic arcs: timescales and mechanisms

Dr Wiebke Gandhi
University of Reading
Learning to expect failure – unravelling dynamic processes in the human brain

Dr Gyorgy Pal Geher
University of Reading
Entanglement entropy in quantum spin chains

Dr Susana Gomes
University of Warwick
Parameter estimation in macroscopic models for pedestrian dynamics

Dr Samantha Gregory
Aston University
Memory enrichment by social context: a virtual reality EEG research project

Dr Kelly Jakubowski
Durham University
Prevalence, features and retrieval of music-evoked autobiographical memories

Dr Charlotte Kenchington
University of Cambridge
Constraining biological diversity in Ediacaran ecosystems

Dr Jaehoon Kim
University of Warwick
Embeddings and packings in graphs

Dr Christopher Lancefield
University of St Andrews
Unravelling the chemistry that drives lignocellulose degradation in nature

Dr Marjorie Lundgren
Lancaster University
Assessing the potential for C₂ photosynthesis to boost crop productivity

Dr Christopher Markou
University of Cambridge
Artificial intelligence, technological change and legal evolution

Dr Lucia Marti Prats
University of Cambridge
How does alcohol soothe you? Neural and cellular basis of coping

Dr Alice Mason
University of Warwick
From encoding to retrieval: how memory drives risky choice

Dr Charlie McTernan
University of Cambridge
Controlling the temporal evolution of molecular capsules

Dr Alison Ming
University of Cambridge
Capturing the complexity of atmospheric chemistry with mathematics

Dr Paul-Antoine Moreau
University of Glasgow
Quantum technologies in high dimension

Dr Jonathan Noel
University of Warwick
Hypergraph limits, percolation and extremal set theory

Dr Oluwafunmilola Ola
University of Exeter
Functional nanocomposites as durable electrochemical energy storage devices

Dr Thomas Phillips
Durham University
Fingerprinting structural inheritance: its styles and expression in rift systems

Dr Ed Pope
Durham University
Explaining turbidity current runout distances using field measurements

Dr Jordi Prat Camps
University of Sussex
Spatial sound modulation by acoustic metamaterials

Dr Thomas Puschel
University of Oxford
This study has teeth: exploring human origins and climate change through time

Dr Jason Sanders
University of Cambridge
Dynamics of the inner Milky Way with Gaia

Dr Sara Sangtarash
Lancaster University
Quantum engineering of high-performance molecular-scale thermoelectricity

Dr Joshua Silverstone
University of Bristol
Silicon quantum computing: light work with long waves

Dr Audrey Verma
Newcastle University
Digital afterlives of nature: online resistance and responses to ecological loss

Dr Yinan Wang
University of Warwick
Modelling and aerodynamic control of large and flexible wind turbines

Dr Thomas Whale
University of Warwick
Untangling chemical and topographical impacts on heterogeneous ice nucleation

Humanities

Dr Dominic Alford-Duguid
University of Oxford
On the epistemic significance of perceptual structure

<p>Dr Caroline Ashcroft Queen Mary, University of London <i>Technological determinism in Cold War political thought</i></p>	<p>Dr Lucy Campbell University of Warwick <i>Epistemological pluralism</i></p>	<p>Dr Laxshmi Greaves Cardiff University <i>The Rāmāyaṇa in art: the development of epic imagery, fifth–ninth centuries CE</i></p>	<p>Dr Livia Lupi University of Warwick <i>The rhetoric of architectural painting in early Renaissance Italy</i></p>
<p>Dr Michelle Assay (Eshghpour) University of Huddersfield <i>Shakespeare and censorship: Soviet and post-Soviet music, theatre and film</i></p>	<p>Dr William Carruthers University of East Anglia <i>Making global heritage: Afro-Asianism and the archaeological survey of India</i></p>	<p>Dr Benjamin Harriman University of Edinburgh <i>Physics, ethics and the unity of Stoic philosophy</i></p>	<p>Dr Pippa Marland University of Leeds <i>The pen and the plough: modern British nature writing and the farm</i></p>
<p>Dr Matteo Barbato University of Birmingham <i>Anti-political-establishment ideology in Athenian democracy</i></p>	<p>Dr Marta Bianca Maria Celati University of Warwick <i>The ‘mirror’ of history; prince and tyrant in Italian Renaissance literature</i></p>	<p>Dr Julia Hartley University of Warwick <i>West–Eastern encounters: Iran in French Literature, 1829–1908</i></p>	<p>Dr Noreen Masud Durham University <i>Speaking flat: aesthetics of flatness in twentieth-century literature</i></p>
<p>Dr Georgina Barker University College London <i>Classical lesbians in the Russian imagination</i></p>	<p>Dr Magdalen Connolly University of Cambridge <i>Jewish, Muslim and Christian Middle Arabic folk tales from the Ottoman period</i></p>	<p>Dr Florence Hazrat University of Sheffield <i>Pause for thought: the role of brackets in experiencing Renaissance literature</i></p>	<p>Dr Daniel Matore Royal Holloway, University of London <i>Contrapuntal modernism: fugal thinking in twentieth-century literature</i></p>
<p>Dr Caroline Barron Birkbeck, University of London <i>Fake inscriptions and the eighteenth-century art market</i></p>	<p>Dr Arabella Currie University of Exeter <i>William Golding and the Classics</i></p>	<p>Dr Siobhan Hearne Durham University <i>Masculinity and sexuality in the late imperial Russian military, 1890–1917</i></p>	<p>Dr Onya McCausland University College London <i>From coal mine waste to landscape painting; new British earths</i></p>
<p>Dr Doug Battersby University of Bristol <i>The heart of modernist fiction, 1899–1938</i></p>	<p>Dr Rachel Delman University of York <i>Women and the built environment in late medieval England</i></p>	<p>Dr Ben Holgate Queen Mary, University of London <i>Money in the digital age: cyber-capital, culture, consumption and world literature</i></p>	<p>Dr Megan McNamee School of Advanced Study, University of London <i>Numeracy and representation in medieval Europe</i></p>
<p>Dr Kavita Bhanot University of Leicester <i>Beyond the nation: British self and Punjabi (m)other in British Asian literature</i></p>	<p>Dr Polly Dickson Durham University <i>Reading doodles: from E.T.A. Hoffmann to Oscar Wilde</i></p>	<p>Dr Nick Hughes University of Oxford <i>Dilemmic epistemology</i></p>	<p>Dr Robin Mills Queen Mary, University of London <i>The Scottish Enlightenment explains the gods, c. 1740–1830</i></p>
<p>Dr Gonul Bozoglu Newcastle University <i>Living with a hostile history: Greek-Istanbulite memory cultures</i></p>	<p>Dr Yuval Evri King’s College London <i>Between partitions and translations: reviving Andalusian visions in Palestine</i></p>	<p>Dr Katarzyna Kosior Northumbria University <i>Kingship, elective monarchy and masculinity in Poland-Lithuania, 1573–1733</i></p>	<p>Dr Nathaniel Morris University College London <i>Communal militias, Indian autonomy and the Mexican state, 1850–present</i></p>
<p>Dr Thea Buckley Queen’s University Belfast <i>South Indian Shakespeares: reimagining art forms and identities</i></p>	<p>Dr Natalie Ferris University of Edinburgh <i>Technicities of illusion: dynamism and deception in post-war literature</i></p>	<p>Dr Matthew Laube Birkbeck, University of London <i>Sound, violence and the emotions in the Dutch revolt</i></p>	<p>Dr Kombola Ramadhani Mussa Cardiff University <i>Language, mobility and identity among the Zigula (Somali Bantu)</i></p>
<p>Dr Andrew Buskell University of Cambridge <i>Counting cultures: the metaphysics of cultural individuality</i></p>	<p>Dr Matthew Gotham University of Oxford <i>The semantics and pragmatics of individuation</i></p>	<p>Dr Yang Liu University of Cambridge <i>Realistic decision theory</i></p>	

<p>Dr Francesca Mussi Northumbria University <i>Truth-telling/story-telling: literary and critical perspectives on Canada's TRC</i></p>	<p>Dr Theo Reeves-Evison Birmingham City University <i>Speculative natures: contemporary art and interventionist ecology</i></p>	<p>Dr Michael Yat Him Tsang Newcastle University <i>World literature influences on twentieth-century Chinese and Japanese literary scenes</i></p>	<p>Dr Josh Bowsher Brunel University London <i>Accounting for the past: the neoliberal logics of transitional justice</i></p>
<p>Dr Alexa Neale University of Sussex <i>Black books: the institutional memory of hanging and mercy at the Home Office</i></p>	<p>Dr Justin Rivest University of Cambridge <i>The state and the charitable distribution of drugs in Old Regime France</i></p>	<p>Dr David Veevers Queen Mary, University of London <i>Transnational constitutions: Asian governance in a global world, 1600–1750</i></p>	<p>Dr Ekaterina Braginskaia University of Bristol <i>Minority faith and civil society responses to refugee integration in Britain</i></p>
<p>Dr Samuel O'Donoghue University of Warwick <i>The struggle for Holocaust consciousness in Franco's Spain</i></p>	<p>Dr Maria Roca Lizarazu University of Birmingham <i>Dis/integration: reimagining togetherness in recent German-language literature</i></p>	<p>Dr Jenny Watson University of Edinburgh <i>Restless earth: landscapes of extra-concentratory violence after 1945</i></p>	<p>Dr Sarah Burton City, University of London <i>Ambivalence, power, and the cosmopolitan intellectual</i></p>
<p>Dr Luke O'Sullivan King's College London <i>Doubtful truth-telling in early modern France</i></p>	<p>Dr Maria Raquel Rojo Carrillo University of Cambridge <i>Plainchant in medieval Iberia: from the Old Hispanic rite to the Roman rite</i></p>	<p>Dr Callie Hannah Wilkinson University of Warwick <i>Secrecy and transparency in the English East India Company, 1784–1834</i></p>	<p>Dr Benjamin Chemouni University of Cambridge <i>The legacy of rebel organisational culture in post-conflict governance</i></p>
<p>Dr Maria Pavlova University of Warwick <i>The renaissance knight: war, nobility and virtue from Pulci to Ariosto, 1461–1532</i></p>	<p>Dr Devani Singh University of Oxford <i>To the reader: the English preface in print, c. 1475–1623</i></p>	<p>Dr Nicola Williams Lancaster University <i>Quality of life transplantation: philosophical and policy questions</i></p>	<p>Dr Licia Cianetti Royal Holloway, University of London <i>What happened to the multicultural city? Effects of nativism and austerity questions</i></p>
<p>Dr Emma Payne King's College London <i>The evolution of technology and the interpretation of classical sculpture</i></p>	<p>Dr Giulia Smith University of Oxford <i>Landscape, identity and belonging in post-imperial Britain</i></p>	<p>Dr Yanling Yang Loughborough University <i>Film co-productions as soft power for the UK and China</i></p>	<p>Dr Katherine Collins University of Oxford <i>Knowledge for liberation? The participatory vision of Freire, Fals-Borda and Rahman</i></p>
<p>Dr Alessandra Petrocchi University of Oxford <i>Encounters with the East: Hindu-Arabic numerals in renaissance Italy</i></p>	<p>Dr Ian Stewart Queen Mary, University of London <i>Language and race in British imperial and international thought, 1784–1914</i></p>	<hr/> <h2>Social Sciences</h2>	
<p>Dr Matthew Phillips Royal Holloway, University of London <i>Depressive texts: mental well-being and the modern French novel</i></p>	<p>Dr Michael Sugarman University of Bristol <i>Fluid urbanism: water, inequality and the making of Asia's port cities</i></p>		
<p>Dr Juliana Pistorius University of Huddersfield <i>Operatic migrations: coloniality and adaptation in the 'new' South Africa</i></p>	<p>Dr Justine Trombley University of Nottingham <i>The condemnation of heretical texts in the late middle ages</i></p>		
<p>Dr Ben Pope University of Manchester <i>The oppression of the nobility: town, country and identity in medieval Germany</i></p>	<p>Dr Carrie Benjamin University of Warwick <i>Multisensory encounters with whiteness: public space, race and the senses</i></p>		
			<p>Dr Maggie Dwyer University of Edinburgh <i>Peacekeeping veterans: deployment effects on African soldiers and communities</i></p>
			<p>Dr Cara Jardine University of Strathclyde <i>Corners of community: exploring the role of the 'outside' in prison life</i></p>
			<p>Dr Matthias Kranke University of Warwick <i>Pitching expertise: how international organisations establish their authority</i></p>

Dr Don Lee
University of Nottingham
Rise of populist parties and assessment of representative democracy in Asia

Dr Stephen Millar
Cardiff University
Performing paramilitarism: music, conflict and Ulster loyalism

Dr Jasper Montana
University of Oxford
Grappling with governance systems: biodiversity in the UK Overseas Territories

Dr Poorna Mysoor
University of Oxford
Achieving copyright balance through the structure of tangible property

Dr Jack Palmer
University of Leeds
Zygmunt Bauman and the West: exile, culture, dialogue

Dr Alida Payson
Cardiff University
Charity shop country: conviviality and survival in austerity Britain

Dr Uma Pradhan
University of Oxford
(Re)-constructing the state: rebuilding schools in post-earthquake Nepal

Dr Robert Pralat
University of Cambridge
Technologies of desire: a comparative study of IVF and PrEP

Dr Deborah Ralls
University of Manchester
Redefining education for a social solidarity urban economy: becoming relational

Dr Anne-Line Rodriguez
Queen Mary,
University of London
EU governmentality of migration and the ethics of Islamic reformism in Senegal

Dr Lindsay Sawyer
University of Sheffield
Power, authority and land: an intra-city comparison of urban processes in Lagos

Dr Matthew Thompson
University of Liverpool
Reimagining the city: new municipalism and the future of economic democracy

Dr Ophélie Véron
University of Sheffield
Is the alternative city a just city?

Dr Sanne Weber
University of Birmingham
Gendering reconciliation: local reintegration from an international perspective

Dr William Wheeler
University of Manchester
Seeking asylum in the UK: an ethnography of destitute lives ruled by paper

Dr Anahi Wiedenbrug
University of Oxford
Banking for the public interest

Dr Thorsten Wojczewski
King's College London
Populism in Indian and US foreign policy: the politics of representing the people

Dr Sally Shinan Zhu
University of Glasgow
Shifting paradigms of material property relations in cyber- and sharing-economies



Research Fellowships

Sciences

Professor David Borchers
University of St Andrews
Statistical models for digital wildlife surveys
£48,260

Dr Christina Cobbold
University of Glasgow
Insect abundance and climate variability: novel insights from homogenisation
£53,734

Dr Maria Dornelas
University of St Andrews
Multi-scale prediction of reef coral diversity
£54,976

Professor Andrew Gilbert
University of Exeter
Vortices and waves in complex fluid flows
£46,862

Dr Tristram Irvine-Fynn
Aberystwyth University
How does autumn rainfall 'reset' glacier surfaces in a wetter Arctic?
£54,756

Dr Eun-jin Kim
University of Sheffield
Variability and self-organisation in stellar evolution
£50,925

Professor Simon Poulton
University of Leeds
Dynamics of the Great Oxidation Event
£54,944

Professor Alastair Rucklidge
University of Leeds
Complex and disordered patterns
£54,037

Dr Marco Schlichting
University of Warwick
Higher K-theory of forms
£43,778

Dr Francesco Shankar
University of Southampton
Cutting-edge semi-empirical models for supermassive black hole-galaxy evolution
£54,999

Dr Matthias Soller
University of Birmingham
Understanding the role of mRNA methylation in fine-tuning gene expression
£54,728

Professor Einar Steingrímsson
University of Strathclyde
Connecting physics models via permutations
£54,683

Professor Steven Tobias
University of Leeds
The origin of the eleven-year solar activity cycle
£52,475

Dr Floriana Tuna
University of Manchester
Two-dimensional HYSCORE spectroscopy of actinide complexes
£54,917

Dr Elizabeth Wanner
Aston University
Lyapunov design of success-based adaptation rules
£42,430

Humanities

Dr Arif Ahmed
University of Cambridge
The value of the future
£52,583

Dr Nadia Ali
Independent researcher
Reconstructing the visual cultures of pre-Islamic Arabia
£9,700

Professor Marc David Baer
London School of Economics and Political Science
Guided by Goethe: German-Jewish gay Muslim writer Hugo Marcus, 1880–1966
£54,170

Professor Paul Betts
University of Oxford
The re-civilisation of Europe after 1945
£48,075

Dr Kasia Boddy
University of Cambridge
Zero years: American literature and the census
£52,550

Professor Rosalind Brown-Grant
University of Leeds
Visualising power and justice in late medieval French romance manuscripts
£38,445

Dr Luciano Cardellicchio
University of Kent
Our future heritage: conservation issues of contemporary architecture in Rome
£54,562

Dr Ting Chang
University of Nottingham
Playing empire in the nineteenth century: games, spectacles and colonial subjects
£50,598

Dr Anne Desler
University of Edinburgh
Opera performed: Nicola Grimaldi 'Nicolini' – singer, actor, director, promoter
£42,654

Dr David Doddington
Cardiff University
Old age and American slavery
£50,148

Dr Gillian Dow
University of Southampton
Women writers and the romantic-period novel in Britain and France
£48,891

Professor Martin Evans
University of Sussex
Comparing and connecting post-colonial globalisation: Paris and London, 1962–1989
£51,425

Professor Karin Friedrich
University of Aberdeen
Dynastic identity in early modern Poland: Bogusław Radziwiłł and his world
£54,509

Dr Robert Gillett
Queen Mary, University of London
Representing Rosmer: Elsa Bernstein as writer and salonnière
£27,822

Professor Hilary Greaves
University of Oxford
Towards a theory of rational philanthropy
£53,731

Professor Helen Hackett
University College London
The Elizabethan mind: a reader's guide
£46,055

Professor Thomas Harrison
University of St Andrews
Belief in Greek religion
£52,716

Dr Irena Hayter
University of Leeds
Spectacular subjects: modernism, gender and visuality in interwar Japan
£32,316

<p>Dr Naomi Head University of Glasgow <i>Empathy under fire: 'hearts and minds' and the politics of empathy</i> £53,711</p>	<p>Dr Xiaoning Lu SOAS, University of London <i>Transnational practices: film culture and politics in China, 1949–1989</i> £54,951</p>	<p>Dr Alistair Rider University of St Andrews <i>The lifelong work: long-term artists' projects since 1960</i> £45,505</p>	<p>Professor Peter Sells University of York <i>Verb and verb phrase topicalisation in languages of Eurasia</i> £39,893</p>
<p>Professor Piers Hellawell Queen's University Belfast <i>Extending music's compositional strategies through a fusion of two new works</i> £51,511</p>	<p>Professor Kate Marsh University of Liverpool <i>Policing French colonial metropolises, 1918–1962</i> £27,835</p>	<p>Dr Matthew Robinson University of Oxford <i>At the edge of poetry: acrostic and telestics in Latin poetry</i> £48,525</p>	<p>Dr Hugo Service University of York <i>Nazis, communists and the fate of central Europe's Jews, 1939–1949</i> £53,176</p>
<p>Professor Mark Hewitson University College London <i>The violence of war: Germany, 1888–1968</i> £52,341</p>	<p>Professor David Maw University of Oxford <i>Guillaume de Machaut: inventor of absolute music</i> £49,958</p>	<p>Dr Miriam Ronzoni University of Manchester <i>Constructing justice</i> £54,500</p>	<p>Dr William Short University of Exeter <i>Most erected spirits: a cultural semantics of Roman courage and cowardice</i> £53,827</p>
<p>Dr Suzanne Hobson Queen Mary, University of London <i>Unbelief: interwar cultures of doubt</i> £54,934</p>	<p>Dr Briony McDonagh University of Hull <i>Gendering the commons</i> £53,905</p>	<p>Professor Phillip Rothwell University of Oxford <i>A rebellious mirror to their nation: women writing in Angola</i> £48,250</p>	<p>Dr Alex Silk University of Birmingham <i>Context-sensitivity in normative language and discourse</i> £50,740</p>
<p>Dr Claudia Hopkins University of Edinburgh <i>Rethinking orientalism: identity in Spanish art, c. 1830–1956</i> £38,592</p>	<p>Professor Jeff McMahan University of Oxford <i>Killing, saving and causing to exist</i> £54,352</p>	<p>Dr Anita Rupprecht University of Brighton <i>Indenturing 'Re-captured Africans' in the British Caribbean, 1807–1828</i> £38,095</p>	<p>Professor Gurharpal Singh SOAS, University of London <i>A world turned upside down: Sikhs and the partition of India</i> £53,654</p>
<p>Professor Richard Kirkland King's College London <i>A cultural history of Irish London, 1880–1916</i> £48,231</p>	<p>Professor Lynda Mugglestone University of Oxford <i>Words in war time: searching for meaning in WWI</i> £43,217</p>	<p>Dr David Russell University of Oxford <i>Facing reality: sage writers on human flourishing</i> £45,717</p>	<p>Dr Paulina Sliwa University of Cambridge <i>Telling right from wrong: moral testimony and moral knowledge</i> £54,938</p>
<p>Dr Inna Kupreeva University of Edinburgh <i>Alexander of Aphrodisias and Aristotle's De anima</i> £48,157</p>	<p>Professor Daniel Ogden University of Exeter <i>The werewolf in the Greek and Roman world: a folkloric study</i> £46,998</p>	<p>Dr John Sabapathy University College London <i>The institutionalisation of Europe in the thirteenth century</i> £54,997</p>	<p>Dr Axel Stähler University of Kent <i>Jerusalem destroyed: literature, art, and music in nineteenth-century Europe</i> £46,994</p>
<p>Dr Charlie Louth University of Oxford <i>What happens when we read a poem? Reading Rilke</i> £49,850</p>	<p>Dr Sheldon Penn University of Leicester <i>Mexican time and identity: Bergson and Bergsonism in literature and film</i> £42,395</p>	<p>Dr Len Scales Durham University <i>The Kaiser myth: medieval emperors and German memory, 900–2000 CE</i> £44,646</p>	<p>Dr Adrian Streete University of Glasgow <i>Polemical laughter in English literary culture, c. 1500–1700</i> £53,903</p>
	<p>Professor Clare Pettitt King's College London <i>Revolutionary seriality: 1848 in Britain, Europe and America</i> £50,302</p>	<p>Dr Samiksha Sehrawat Newcastle University <i>Decolonising the history of biomedicine: patients and hospitals in India</i> £46,900</p>	

Dr Simona Valeriani
Victoria and Albert Museum
Designing the future: innovation and the construction of the Royal Albert Hall
£54,919

Dr Saskia Vermeylen
University of Strathclyde
Utopian literatures and space law
£54,874

Dr Caroline Warman
University of Oxford
The atheist's bible: Diderot's Eléments de physiologie, its importance and reach
£49,950

Dr Paul White
University of Leeds
Elegia renascens: Latin love elegy collections from antiquity to the Renaissance
£18,401

Dr Heather Wiebe
King's College London
Mobilising music in wartime British film
£48,232

Dr Susannah Wilson
University of Warwick
Morphine and the cultural imagination in France, 1870–1930
£34,835

Dr Gillian Woods
Birkbeck, University of London
Representational dynamics in renaissance theatre
£36,886

Dr Ramona Wray
Queen's University Belfast
A literary biography of Elizabeth Cary, Lady Tanfield (1585/6–1639)
£49,792

Social Sciences

Dr Jutta Bakony
Durham University
The art of governing without a state: experiences from Somalia
£48,982

Dr Anna Ball
Nottingham Trent University
Moving women, moving stories: rethinking representations of forced migration
£43,436

Dr Tendayi Bloom
Open University
Noncitizenship and the global compact for migration
£40,176

Dr Morgan Clarke
University of Oxford
A new anthropology of rules
£49,075

Dr Angharad Closs Stephens
Swansea University
National affects: towards a cultural politics of atmospheres
£29,028

Dr Daniel Conway
University of Westminster
The global politics of Pride: LGBTQ+ activism, assimilation and resistance
£37,007

Dr Simon Cottee
University of Kent
Atrocity porn: a qualitative study of death and gore enthusiasts
£25,005

Dr Helen Cowie
University of York
Fashion victims: animal commodities in Britain, 1800–1914
£54,689

Dr Jamie Doucette
University of Manchester
Korea's Candlelight Revolution and the post-developmental state
£54,569

Dr Alexander Easton
Durham University
Developing a language-free test of episodic memory in children
£46,772

Dr Fabienne Emmerich
University of Keele
Swimming against the current: women, prison reform and resistance
£52,203

Dr Crispian Fuller
Cardiff University
Brexit, foreign corporations and regional development
£52,908

Professor Caroline Gatrell
University of Liverpool
The paternal body: a lens for articulating fathers' involvement in childcare
£36,641

Dr Virginie Grzelczya
Aston University
No child's play: politics of toys in conflict and post-conflict spaces
£49,497

Dr Helen Haugh
University of Cambridge
Community entrepreneurship: history, institutions and networks
£51,038

Dr Christina Hellmich
University of Reading
Suffering silently: miscarriage in professional women in the UK
£46,944

Dr Aggie Hirst
King's College London
Producing soldiers in a digital age: total immersion training in the US army
£52,332

Dr Ben Hunter
University of Greenwich
Corporate criminal careers: environmental offending by organisations
£50,721

Dr Rico Isaacs
Oxford Brookes University
Sustaining authoritarianism: parliaments and personalism in central Asia
£44,614

Dr Julie Jones
University of Sheffield
A historical perspective on Antarctic climate change
£54,369

Professor Aristotle Kallis
University of Keele
Housing as practical utopia: a critical reappraisal of the 'minimum dwelling'
£45,695

Professor Peter Kraftl
University of Birmingham
Plastic childhoods
£51,389

Dr Monika Krause
London School of Economics and Political Science
Ideosyncratic ties: mission agencies and the future of transnational relations
£50,939

Dr Patricia Lewis
University of Kent
Post-feminism in the city: feminine leadership as lived experience
£53,112

Professor Katie Lloyd Thomas
Newcastle University
The architect as shopper: building products and the proprietary turn in the UK
£28,751

Dr Elizabeth Mavroudi
Loughborough University
Children's politicisation in diaspora: a comparative exploration
£43,829

Dr Gearoid Millar
University of Aberdeen
Ambition and ambivalence: peace studies in a changing world
£46,848

Dr Jonathan Oldfield
University of Birmingham
The development of environmental monitoring capacities in the USSR and Russia
£38,522

Dr Dimitris Papadopoulos
University of Leicester
Benign by design: the emergence of ecologically sustainable chemical innovation
£51,320

Dr Lena Rethel
University of Warwick
Markets as spectacles? Principles, practices and governance of Islamic economies
£54,144

Dr Amanda Rogers
Swansea University
Dance in contemporary Cambodia: nation, geopolitics, identity
£54,998

Dr Pollyanna Ruiz
University of Sussex
Remembering and forgetting: media, memory, activism
£54,807

Dr Minoli Salgado
University of Sussex
The other side of violence: terror and trauma in contemporary exilic literature
£54,741

Dr Mohammad Shahabuddin
University of Birmingham
Postcolonial statehood and international law: the Rohingya crisis and beyond
£50,845

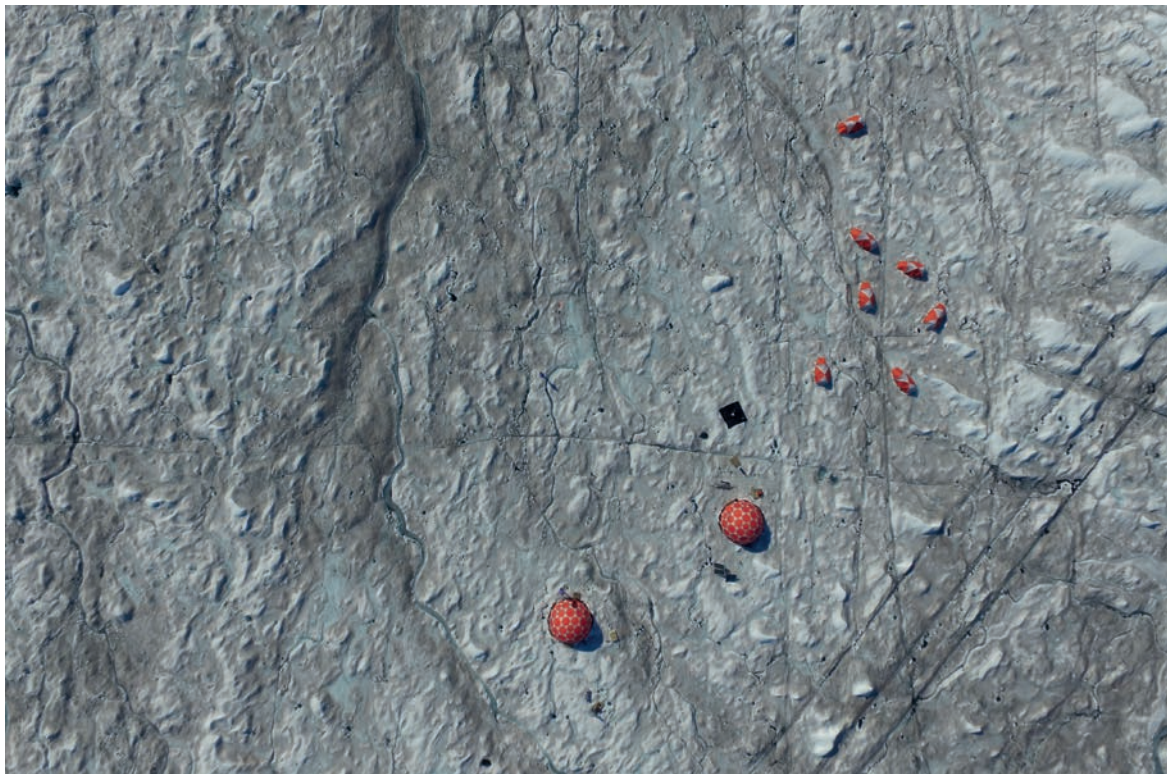
Professor Maria Tamboukou
University of East London
Revisiting the nomadic subject
£54,248

Dr Weipin Tsai
Royal Holloway, University of London
Couriers for the common folk: the private firms that joined up China
£51,280

Professor Dimitris Tziovas
University of Birmingham
Crisis Greece: culture, identity and the West
£46,581

Dr Han van Wietmarschen
University College London
A theory of social hierarchy
£37,348

Professor Vron Ware
Kingston University
One village, one world
£37,691



Major Research Fellowships

Professor Catherine Alexander
Durham University
Forms and fears of failure
£145,270

Professor Amalia Arvaniti
University of Kent
Politics and linguistic variation in a post-diglossic speech community
£106,560

Professor David Brown
University of Southampton
'The aristocratic tradition at its best'? Shaftesbury, philanthropy and reform
£137,099

Dr Sam Coleman
University of Hertfordshire
Consciousness as bystander: exploring the mostly unconscious mind
£85,766

Professor Derek Duncan
University of St Andrews
Loose ends: minor transnational Italian cultures
£114,022

Professor Lindsay Farmer
University of Glasgow
Rethinking the relationship between markets and criminal law
£141,554

Professor Chris Gosden
University of Oxford
Becoming human: a new world history
£143,731

Dr Rick Knecht
University of Aberdeen
Yup'ik culture before contact
£157,468

Professor Ismene Lada-Richards
King's College London
Poetics in the flesh: dance and poetry in first-century BCE Rome
£160,151

Professor Kate McLoughlin
University of Oxford
Silence: a literary history
£159,448

Professor Rana Mitter
University of Oxford
The Chinese postwar and the making of Asian order, 1945–1955
£178,065

Professor James Craig Muldrew
University of Cambridge
New abstract financial value and society in the early eighteenth century
£111,211

Professor Joy Porter
University of Hull
What Would Nixon Do? The forgotten republican roots of American environmentalism
£155,473

Dr Yossef Rapoport
Queen Mary, University of London
Tribal identity and conversion to Islam in rural Egypt and Syria, 1000–1500
£169,314

Dr Alice Rio
King's College London
Early medieval legal cultures
£151,530

Professor Katie Scott
Courtauld Institute of Art, University of London
Open City: Paris and the arts in the eighteenth century
£166,380

Professor Martin Stokes
King's College London
Urban Song of the Upper Euphrates (Turkey)
£166,221

Professor Jeremy Tanner
University College London
The Axial Age and the institution of art in Ancient Greece and China
£167,394

Professor Martin Thomas
University of Exeter
Globalising decolonisation: connecting processes of global transformation
£148,824

Professor Jan Toporowski
SOAS, University of London
The intellectual biography of Oskar Lange
£191,816

Professor David Treece
King's College London
Music and anti-racism in contemporary Brazil
£166,590

Professor Laura Tunbridge
University of Oxford
A social and sonic history of the string quartet
£177,107

Professor Renata Tyszczyk
University of Sheffield
Collective scenarios: rehearsing, predicting and speculating on climate futures
£177,322

Professor Neil Walker
University of Edinburgh
Law, community and utopia
£176,212

Professor Janet C E Watson
University of Leeds
The phonetics and phonology of Modern South Arabian: Mehri and Shehret
£104,765

Professor Gary Watt
University of Warwick
Rhetorical performance in courts of law and popular opinion
£175,554

Professor Clive Webb
University of Sussex
Mob violence against foreign nationals in the United States, 1850–1950
£151,317

Professor Björn Weiler
Aberystwyth University
Unity, diversity and the past in Europe, c. 1100–1300
£155,304

Professor David Wootton
University of York
Voltaire: made in England
£65,042



Philip Leverhulme Prizes

Prize Winners received £100,000, to be used for any purpose that will advance their research.

Classics

Dr Amin Benaissa
Faculty of Classics,
University of Oxford

Dr Myles Lavan
School of Classics,
University of St Andrews

Dr Alex Mullen
Department of Classics and
Archaeology, University of
Nottingham

Dr Amy Russell
Department of Classics and
Ancient History, Durham
University

Dr Shaul Tor
Departments of Classics and
Philosophy, King's College
London

Earth Sciences

Dr Juliet Biggs
School of Earth Sciences,
University of Bristol

Dr Stephen Brusatte
School of Geosciences,
University of Edinburgh

Dr Heather Graven
Department of Physics
and Grantham Institute,
Imperial College London

Dr Babette Hoogakker
Institute of Life and Earth
Sciences, Heriot-Watt
University

Dr Amanda Maycock
School of Earth and
Environment, University
of Leeds

Physics

Dr Alis Deason
Department of Physics,
Durham University

Dr Simone De Liberato
School of Physics and
Astronomy, University of
Southampton

Dr Katherine Dooley
School of Physics and
Astronomy, Cardiff University

**Professor Rahul
Raveendran Nair**
School of Chemical Engineering
and Analytical Science and the
National Graphene Institute,
University of Manchester

Dr John Russo
School of Mathematics,
University of Bristol

Psychology

Professor Emily S Cross
Institute of Neuroscience
and Psychology, University
of Glasgow

Dr Steve Fleming
Wellcome Centre for Human
Neuroimaging, University
College London

Dr Claire Haworth
School of Experimental
Psychology, University
of Bristol

Dr Harriet Over
Department of Psychology,
University of York

Professor Nichola Raihani
Department of Experimental
Psychology, University College
London

Politics and International Relations

Dr Ezequiel González Ocantos
Department of Politics and
International Relations,
University of Oxford

Professor Chris Hanretty
Department of Politics and
International Relations, Royal
Holloway, University of London

Professor Sophie Harman
School of Politics and
International Relations, Queen
Mary, University of London

Dr Lauren Wilcox
Department of Politics
and International Studies,
University of Cambridge

Professor Lea Ypi
Department of Government,
London School of Economics
and Political Science

Visual and Performing Arts

Dr Erika Balsom
Department of Film Studies,
King's College London

Dr Daisy Fancourt
Department of Behavioural
Science and Health,
University College London

Dr Ian Kiaer
The Ruskin School of Art,
University of Oxford

Dr Peter McMurray
Faculty of Music,
University of Cambridge

Dr Tiffany Watt Smith
Department of Drama,
Queen Mary, University
of London



Visiting Professorships

Sciences

Dr Wael Bahsoun
Loughborough University
Visitor – Professor Jose
Ferreira Alves
£32,902

Professor Nathan Bastian
Liverpool John Moores
University
Visitor – Dr Emanuele
Dalessandro
£33,476

Dr Hartmut Blank
University of Portsmouth
Visitor – Professor D Lindsay
£18,760

Professor Andrea Brand
University of Cambridge
Visitor – Dr Yohanns
Bellaiche
£37,000

**Professor Bhismadev
Chakrabarti**
University of Reading
Visitor – Professor Sonia
Bishop
£91,284

Professor José Fiadeiro
Royal Holloway,
University of London
Visitor – Professor
Fernando Orejas
£5,525

Professor Piers Forster
University of Leeds
Visitor – Dr Tami Bond
£38,580

Professor Sir Richard Friend
University of Cambridge
Visitor – Professor Russell
Holmes
£53,842

Professor Alan Haywood
University of Leeds
Visitor – Dr Bette Otto-
Bliesner
£29,646

Professor Timothy Horbury
Imperial College London
Visitor – Professor Stuart Bale
£37,500

Dr Andrew Jardine
University of Cambridge
Visitor – Professor Paul
Dastoor
£37,202

Professor Aditi Lahiri
University of Oxford
Visitor – Professor Anita
Mehta
£32,010

Professor Lin Li
University of Manchester
Visitor – Professor Jiwang Yan
£30,893

Professor Ken Long
Imperial College London
Visitor – Professor Srubabati
Goswami
£11,050

Professor Catriona McKinnon
University of Reading
Visitor – Professor Stephen
Gardiner
£29,992

Ms Lisa Moffitt
University of Edinburgh
Visitor – Professeur Philippe
Rahm
£78,678

Professor Andrew Monkman
Durham University
Visitor – Professor Eric
Bittner
£57,500

Dr Felicity Rose
University of Nottingham
Visitor – Professor Kristi Kiick
£57,692

Dr Chris Stock
University of Edinburgh
Visitor – Professor
Christopher Wiebe
£27,855

Professor Alberto Striolo
University College London
Visitor – Dr John M. Shaw
£11,880

Dr Frank Tietze
University of Cambridge
Visitor – Professor Ove
Granstrand
£28,832

Humanities

Dr Simona Aimar
University College London
Visitor – Professor Angelika
Kratzer
£100,768

Dr Kristin Aune
Coventry University
Visitor – Dr Ina Merdjanova
£81,420

Mr Geoffrey Colman
Royal Central School
of Speech and Drama
Visitor – Professor Anne
Bogart
£75,760

Mr Gair Dunlop
University of Dundee
Visitor – Dr Alasdair Foster
£21,730

**Professor Robert S. C.
Gordon**
University of Cambridge
Visitor – Professor Karen
Pinkus
£75,384

Dr Lise Jaillant
Loughborough University
Visitor – Professor Ray
Siemens
£36,918

Dr Erin Jessee
University of Glasgow
Visitor – Dr Leyla Neyzi
£76,654

Dr Robert Maslen
University of Glasgow
Visitor – Professor Brian
Attebery
£15,470

Professor Nicola McLelland
University of Nottingham
Visitor – Professor Douglas
A. Kibbee
£23,125



Professor Bill Niven
Nottingham Trent University
Visitor – Professor Andrew
Port
£24,194

Dr Lisa Purse
University of Reading
Visitor – Professor Christine
Holmlund
£28,097

Dr Patricia Sellick
Coventry University
Visitor – Professor Jake Lynch
£99,587

Professor Patricia Skinner
Swansea University
Visitor – Professor Wendy
Turner
£47,596

Professor Barry Smith
School of Advanced Study,
University of London
Visitor – Professor
Andreas Roepstorff
£13,673

Dr Athanassios Vergados
Newcastle University
Visitor – Professor
Gianfranco Agosti
£11,796

Professor Nathan Widder
Royal Holloway,
University of London
Visitor – Professor Jeffrey Bell
£33,456

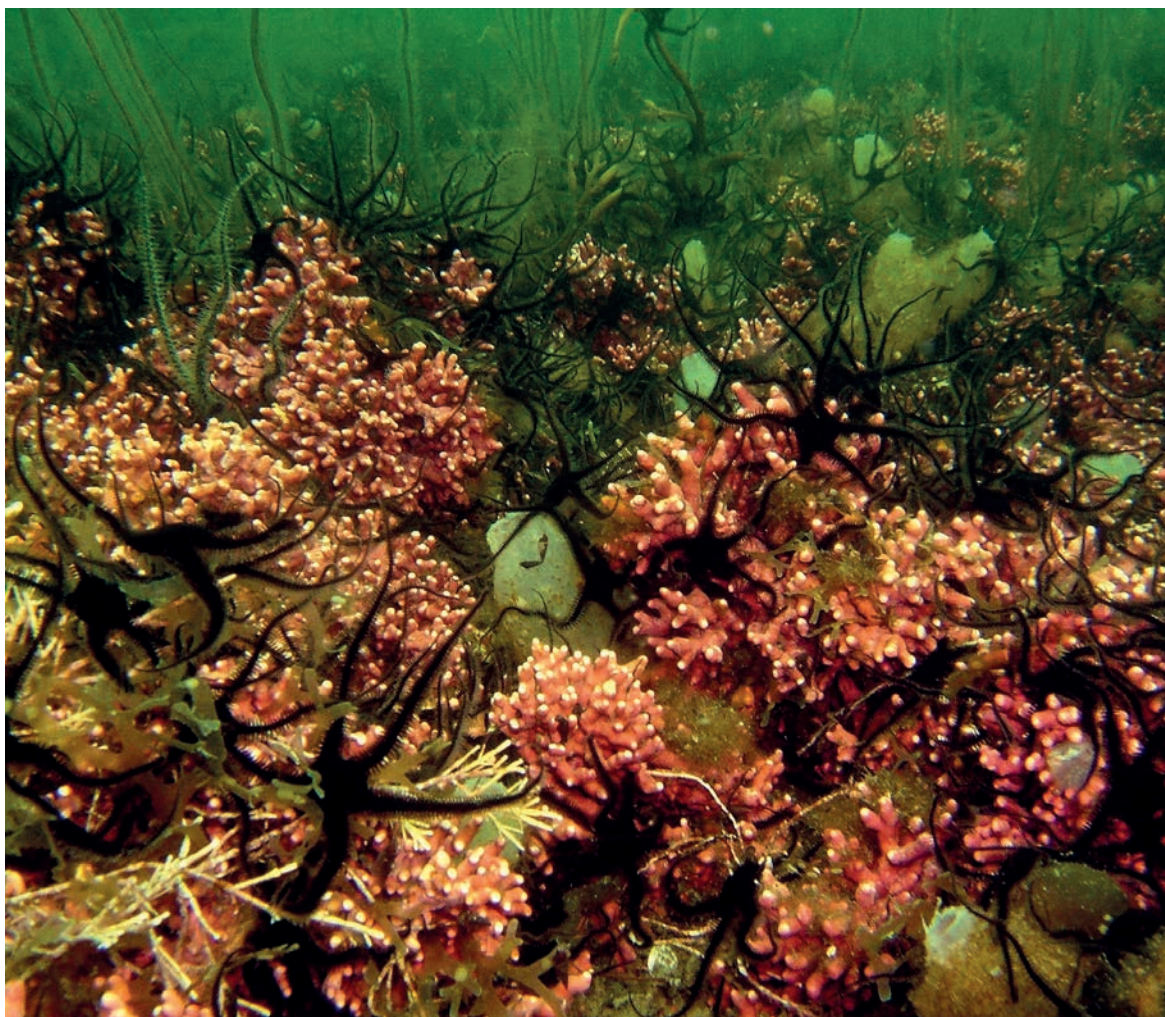
Professor Richard Widdess
SOAS, University of London
Visitor – Professor Linda
Barwick
£33,900

Social Sciences

Professor Colin Hay
University of Sheffield
Visitor – Dr Jacqueline Best
£52,975

Professor Jennifer Robinson
University College London
Visitor – Professor Oren
Yiftachel
£117,640

Dr Iis Tussyadiah
University of Surrey
Visitor – Dr Daniel Fesenmaier
£37,150



Emeritus Fellowships

Sciences

Professor James Binney
University of Oxford
Understanding our Galaxy
£16,800

Professor Philip Brown
University of Kent
Making the most of correlation: seemingly unrelated statistical modelling
£14,850

Professor Howard Colquhoun
University of Reading
Fractal distribution of sequence information in binary copolymers
£16,196

Professor Dianne Edwards
Cardiff University
Resolution of anatomy, ontogeny and affinities of Siluro-Devonian Pachytheca
£22,000

Professor Geoffrey Holman
University of Bath
A molecular mechanism for membrane transport
£10,800

Professor James Howie
Heriot-Watt University
Residually free groups and one-relator products
£15,400

Professor Gareth Jones
King's College London
Development of a combined AFM-super-resolution microscope
£18,075

Professor Tim Jones
University of Liverpool
Scale-invariant quantum gravity, cosmology and particle physics
£18,400

Professor Rob Marrs
University of Liverpool
Vegetation change in long-term experiments in the British uplands
£19,658

Dr John Noyes
Natural History Museum
The Encyrtidae (Hymenoptera: Chalcidoidea) of Costa Rica
£21,500

Dr Christopher Page
University of Exeter
Evolution in the arborescent gymnosperms – a global study
£18,400

Professor Brian Rogers
University of Oxford
Perception of the 3D world
£13,614

Professor Stephen Sparks
University of Bristol
Exploring theories for episodic volcanism
£21,980

Professor Michiel van den Berg
University of Bristol
Brownian motion, torsion and capacity
£15,588

Professor Anthony Watts
University of Oxford
Planetary isostasy and its implications for plate mechanics and mantle dynamics
£21,495

Humanities

Dr Ann Benson
University of Wales
Cambridge colleges: a history of their gardens and designed landscapes
£16,600

Professor Margaret Brazier
University of Manchester
Law and healing: reflecting on English medico-legal history
£21,406

Professor David Buckingham
Loughborough University
The construction of children as a media market in the United States, 1945–2000
£18,800

Professor Gilli Bush-Bailey
Royal Central School of Speech and Drama
Under the skirts of Shakespeare
£14,911

Professor Richard John Carwardine
Independent researcher
American religious nationalism, 1787–1865
£6,310

Professor Justin Champion
Royal Holloway, University of London
Thomas Hollis: fabricating liberty, from Rome to the Age of Revolution
£16,819

Professor Richard Cooper
University of Oxford
Critical editions of Scève and Michel d'Amboise and of satires on the Regent
£14,470

Sir Mark Jones
University of Oxford
The life and work of William Wyon
£21,250

Professor Roger Kain
School of Advanced Study, University of London
Cartography in the nineteenth century
£21,360

Professor John Kippin
University of Sunderland
Landscape, identity, community
£21,500

Professor Rosamond McKitterick
University of Cambridge
Rome and the invention of the papacy in the early middle ages, 476–769
£5,524

Professor Charles Melville
University of Cambridge
Visualising Persian history
£21,883

Professor Anthony Snodgrass
University of Cambridge
Leading the final stages of an archaeological field survey in Boeotia
£17,907

Dr Rose Walker
Independent researcher
Reimagining the art of twelfth-century Iberia
£16,178

Dr Susan Whitfield
Independent researcher
Khotan: a forgotten silk road kingdom
£21,900

Social Sciences

Professor Malcolm Dando
University of Bradford
*A study of how the brain
research projects are dealing
with dual-use*
£16,220

Professor Roy Ellen
University of Kent
*Nuaulu ethnobotanical
cognition and knowledge
(Seram, Eastern Indonesia)*
£13,469

Professor Rosemary Foot
University of Oxford
*China, the United Nations,
and human protection:
beliefs, power and status*
£12,423

Professor Ferenc Furedi
University of Kent
*Socialisation and the
social construction of
'identity crisis'*
£19,819

Professor Liz Hamp-Lyons
University of Bedfordshire
*Towards an understanding
of the continuing power of
written examinations*
£13,940

Professor Margaret Harris
Oxford Brookes University
*Supporting early literacy
development in deaf children*
£15,017

Professor Andrew Linklater
Aberystwyth University
*Symbols and world politics:
a long-term perspective*
£9,870

Professor Judith Pallot
University of Oxford
*Ethnic identity construction
among Muslim prisoners in
the USSR and Russia*
£21,926

Professor Charles Tripp
SOAS, University of London
*Battlefields of the Republic:
contentious politics in
Tunisia*
£15,344



Study Abroad Studentships

Study Abroad Students received basic maintenance costs of £21,000 a year, travel costs and a contribution towards research expenses. The funds support study or research at a centre of learning in any country outside the UK, with the exception of the USA.

Sciences

Miss Savanna
Browne-Wilkinson
*Masters in life science
and technology*
The Netherlands

Mr Alexander Fairley
*The discrete structure
of quadrics*
Germany

Miss Sophie Keeling
Masters in neuroscience
Germany

Mr Darius Riahy
*Suppression of mortal
germline phenotype in
C. elegans by ecologically
relevant microorganisms*
France

Ms Emma Seal
*Environment, development
and peace: sustainable
natural resource management*
Costa Rica

Humanities

Mr Peter Brown
*The emergence of globalised
trade in medieval China*
China

Miss Eloise Gillow
*Intensive painting
programme*
Spain

Mr Thomas Goff
*National Master in orchestral
conducting*
The Netherlands

Dr Lucy Rhiannon Hinnie
*Digitising the Bannatyne
MS, c. 1568*
Canada

Miss Honey Jones-Hughes
Master of fine art
The Netherlands

Ms Lucille Junkere
The colours of Jamaica
Jamaica

Miss Bethan Morgan-
Williams
Masters in composition
The Netherlands

Dr Francesca Petrizzo
*Tancred – the lives and
afterlives of a Hauteville
crusader*
Italy

Ms Nefeli Piree Iliou
*An eastern Roman landed
gentry? Roman villas, farms
and villages of Roman Epirus
in Northern Greece,
c. 2 BCE–5 CE*
Greece

Dr James Dylan Sargan
*Space-time and the
manuscript: 4D modelling
and medieval books*
Canada

Dr Christoph Schmidhuber
Slavery in early Iraq
France

Mr Daniel George William
Smith
*Crossing borders: critical
dialogues for the development
of disability theology*
Germany

Dr Rebecca Van Hove
*Law and the gods:
re-assessing the notion of
divine law in ancient Greece*
France

Dr Aya Van Renterghem
*Approaching alphabets in
the Middle Ages: the Irish
involvement*
The Netherlands

Ms Emma Welton
Masters in literature
Sweden

Ms Teresa Witcombe
*'The secret ways of the
Moors': imagining Islam
in Toledo, 1085–1247*
Spain

Social Sciences

Miss Hannah Arkell
*Masters in architecture:
winding filament fabrication
for fibrous structures*
Denmark

Eleanor Harrison
*How can conditional cash
transfers improve health
behaviours in rural Kenya?*
Kenya

Ms Melody Sylvia Howse
*'You will be recorded': the
role of mobile cameras in
civilian/police encounters*
Germany

Ms Camille Jacob
*English and the Algerian
Sahara: discourses, practices
and identities*
Algeria

Mr Robert Jarvis
*Double masters in
international affairs*
China

Mr David Pollard
*Developing social cognition
in evolving adolescent social
networks*
The Netherlands

Miss Shannon Russell
Masters in law
Canada

Miss Meghana Shukla
*Governance of disaster
risk reduction for flooding:
analysing vulnerability
assessments and adaptation
in Surat, India*
Japan



International Academic Fellowships

Sciences

Professor Jürg Bähler
University College London
Acquiring key methods with short-lived killifish to launch new line of research
£31,269

Dr Ioannis Brilakis
University of Cambridge
Digitising the built environment
£44,058

Professor Debra Mills
Bangor University
Linking gene expression with social brain activity
£33,599

Dr Hazel Nichols
Liverpool John Moores University
The scent of sociality: chemical communication in a cooperative breeder
£44,272

Professor Gabriel Paternain
University of Cambridge
New directions in geometric inverse problems: microlocal and statistical aspects
£30,121

Dr Dan Read
Cardiff University
Semiconductor spintronics and in situ measurement
£21,989

Professor Alfried Vogler
Imperial College London
Genomic and phylogenetic tools for studying species numbers on Earth
£32,095

Dr Alexander Voss
University of St Andrews
Why that now? Accounts of causality in computing
£42,790

Humanities

Dr Jalal Al-Tamimi
Newcastle University
From articulation to speech recognition in investigating the Arabic sound system
£28,668

Ms Jane Arnfield
Northumbria University
An interdisciplinary framing and conceptualisation of (auto)biographical theatre
£20,897

Dr Kathy Conklin
University of Nottingham
Linguistic patterns in first and second language acquisition: does input matter?
£37,460

Dr Fiona Handyside
University of Exeter
French girlhoods on screen: emotions and/of places
£16,892

Dr Alexandra Livarda
University of Nottingham
Shaping the archaeology of culinary practices
£40,940

Social Sciences

Dr Rory Cormac
University of Nottingham
Does covert action work? Evaluating the impact of deniable interventionism
£9,903

Dr Jule Mulder
University of Bristol
Vulnerable consumers and the law in financially uncertain times
£20,204

Professor Jennifer Roberts
University of Sheffield
Commuting as an economic behaviour in the US and the UK
£20,292

Dr Kate Skinner
University of Birmingham
Learning, leveraging and living with the law: gender activism in Ghana, 1957–1992
£9,173

Dr Julia Steinberger
University of Leeds
The golden thread: energy in social development and resource services
£44,856



Arts Scholarships

Academy of Northern Ballet £53,000	Guildhall School of Music and Drama £490,000	National Children's Orchestras of Great Britain £105,000	Pro Corda Trust £150,800
Artsed £260,397	Leeds College of Music £211,242	National Film and Television School £444,000	Purcell School £199,998
Birmingham Conservatoire £291,000	London Academy of Music and Dramatic Art £367,500	National Youth Choirs of Great Britain £107,120	Rambert School of Ballet and Contemporary Dance £90,000
Central School of Ballet £151,330	London Contemporary Dance School £432,726	National Youth Jazz Collective £58,943	Royal Academy of Arts £106,500
Chetham's School of Music £208,254	London Film School £180,884	National Youth Orchestra of Great Britain £475,983	Royal Academy of Dramatic Art £285,000
Circomedia £25,184	London Sinfonietta £29,207	National Youth Theatre £254,210	Royal Academy of Music £381,347
City of Birmingham Symphony Orchestra £187,056	London Studio Centre £135,000	Northern School of Contemporary Dance £214,000	Royal Ballet School £399,834
Dartington Hall Trust £47,520	Magpie Dance £30,660	Opera North £239,305	Royal Central School of Speech and Drama £414,620
Elmhurst Ballet School £94,541	Mountview Academy of Theatre Arts £140,095	Phoenix Dance Theatre £64,180	
Gabrieli £62,000	National Centre for Circus Arts £147,000		
Glasgow School of Art £235,995			



Image credits, with relevant grant holder

Pages 4 & 8

Courtesy of Unilever Archives.

Pages 7 & 12

Rosie Hallam.

Page 11

Group photo of the Summer School group 2018, National Youth Jazz Collective, Arts Scholarship. Masters in Directing Circus, Circomedia, Arts Scholarship. Photo by Ben Tansey.

Page 86

Do seedlings of species at lower altitudes have the same defensive capabilities as seedlings of the same species higher up? Dr Mick Hanley, Research Project Grant.

Page 90

On a fieldtrip in central Greece. The notches cut into the cliff were formed at sea-level, but are now several metres above the water. Professor Richard Walker, Research Project Grant.

Page 92

A bumblebee using vibration to remove pollen from a buzz-pollinated flower. Dr Mario Vallejo-Marin, Research Project Grant.

Page 96

Hip replacement implant installed in the pelvis bone, stock.adobe.com. Dr Martin Birkett, Research Project Grant.

Page 100

Drone image from 70m above a field camp of orange tents which highlights the complexity of impurity distribution, topography and structure on glacier ice surfaces. Dr Tristram Irvine-Fynn, Research Fellowship.

Page 100

Selaginella kraussiana showing the growth of branches arising from a branch point. Dr Jill Harrison, Research Project Grant.

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Paint in a petri dish (from the front cover “Arts in Health”) credit: Klari Reis <https://www.klariart.com>. Dr Daisy Fancourt, Philip Leverhulme Prize.

Page 103

León, San Isidoro, South facade, Portal of the Lamb. Reset sculpture in the tympanum (Photograph: JohnBattenPhotography). Dr Rose Walker, Emeritus Fellowship.

Page 104

A red coralline algal habitat (a maerl bed) on the west coast of Scotland. Dr Heidi L Burdett, Research Project Grant.

Page 106

A functional Islamic shrine – Mazar – by the remains of the Tibetan fort on the Khotan river, 2008. Photographer: John Falconer. Dr Susan Whitfield, Emeritus Fellowship.

Page 107

The Yorùbá Blues Series. Ms Lucille Junkere, Study Abroad Studentship.

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Project Remix 2018 final concert. City of Birmingham Symphony Orchestra, Arts Scholarship.

Page 109

Rambert School performance, photographer: Nicole Guarino. Rambert School of Ballet and Contemporary Dance, Arts Scholarship.

The Leverhulme Trust
1 Pemberton Row
London
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