2018 Annual Review
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85 Grants Awarded
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 FRSA
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.
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.
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 disproportionally 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

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

<table>
<thead>
<tr>
<th>Staff</th>
<th>Institutions funded</th>
<th>Grants awarded</th>
</tr>
</thead>
<tbody>
<tr>
<td>15</td>
<td>81</td>
<td>670</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Active grants</th>
<th>Applications received</th>
<th>Funds distributed since 2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>1,502</td>
<td>3,769</td>
<td>£1 billion</td>
</tr>
</tbody>
</table>

Applications and awards: gender split *

<table>
<thead>
<tr>
<th>Applications</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Career Fellowships</td>
<td>48%</td>
<td>52%</td>
</tr>
<tr>
<td>Major Research Fellowships</td>
<td>41%</td>
<td>59%</td>
</tr>
<tr>
<td>Research Fellowships</td>
<td>33%</td>
<td>67%</td>
</tr>
<tr>
<td>Research Project Grants</td>
<td>28%</td>
<td>72%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Grants</th>
<th>Female</th>
<th>Male</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Career Fellowships</td>
<td>56%</td>
<td>44%</td>
</tr>
<tr>
<td>Major Research Fellowships</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>Research Fellowships</td>
<td>36%</td>
<td>64%</td>
</tr>
<tr>
<td>Research Project Grants</td>
<td>23%</td>
<td>77%</td>
</tr>
</tbody>
</table>

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

Research Project Grants
£39,271,000 36%

Leverhulme Research Centres
£29,999,000 27%

Early Career Fellowships
£12,456,000 11%

Arts Scholarships
£10,392,000 9%

Major Research Fellowships
£4,307,000 4%

Research Fellowships
£5,679,000 5%

Philip Leverhulme Prizes
£3,000,000 3%

Other*
£5,393,000 5%

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

Distribution of funds

Applications: success rates

<table>
<thead>
<tr>
<th>Applications received</th>
<th>Success rate %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Research Project Grants</td>
<td>856</td>
</tr>
<tr>
<td>Early Career Fellowships</td>
<td>739</td>
</tr>
<tr>
<td>Research Fellowships</td>
<td>671</td>
</tr>
<tr>
<td>Philip Leverhulme Prizes</td>
<td>396</td>
</tr>
<tr>
<td>Major Research Fellowships</td>
<td>145</td>
</tr>
<tr>
<td>Visiting Professorships</td>
<td>134</td>
</tr>
<tr>
<td>Study Abroad Studentships</td>
<td>96</td>
</tr>
<tr>
<td>Emeritus Fellowships</td>
<td>84</td>
</tr>
<tr>
<td>International Academic Fellowships</td>
<td>39</td>
</tr>
</tbody>
</table>
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.
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, *Notobranchius 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.
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.
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.
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.
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?
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.
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.
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.
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.
Supporting early literacy development in deaf children

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.
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.
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.
Stimulation of female fecundity by males: causes and evolutionary consequences

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.
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’Mhurain* (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’Mhurain* 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.
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.
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.
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.
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 finally, 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.
The pen and the plough: modern British nature writing and the farm

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.
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).
Rethinking complexity in facial communication systems

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.
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.
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/

Jason Sanders is using ground-breaking satellite data to unravel the mysteries of the formation and evolution of our Galaxy, the Milky Way.
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)’, ‘þanne (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.
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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.
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
What Happened Next

“I think that was a really exciting discovery ... most of the treatments are proper medicines”

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 re-appraise 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 the 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 re-translation 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.

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.
Dr Althea Davies

Integrating science and history in the stories landscapes tell
“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 McApie, 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.

‘Traditionally, environmental history has always been history-led ... but ... if you want to ask difficult questions you need to look beyond that’
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.
“Dancing is more than just moving body parts” – Normani Kordei

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.” 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.

‘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’
Professor Catherine Hill

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.”
What Happened Next

From texts to textiles; taking genetic analysis beyond the gene

Professor Chris Howe

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 even 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.
Professor Chris Reed

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”
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 photovoltaics for clean fuels*
£174,952

Professor Simon Aldridge
University of Oxford
*Turning aluminium chemistry on its head: aluminyl 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 Arantzazu 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
Professor Glenn Burley
University of Strathclyde
Macromolecular construction of DNA networks directed by the fluorous effect
£334,937

Professor Tracey Chapman
University of East Anglia
MicroRNAs as agents of sexual conflict and cooperation
£196,124

Dr Ewan Clark
University of Kent
Phosphonium cations: phospha-Friedel-Crafts intermediates for modern synthesis
£85,346

Professor Simon J Clarke
University of Oxford
Chemical tuning of topological materials
£194,140

Dr Marco Conte
University of Sheffield
Valorisation of recycled glass: from waste to a catalytic resource
£181,438

Dr Kokou Dadzie
Heriot-Watt University
New continuum paradigm for fluid flows in micro- and nano-scale structures
£255,418

Dr Johnathan Dalzell
Queen's University Belfast
Understanding the molecular basis of aggression in nematodes
£196,819

Professor Anuj Dawar
University of Cambridge
Logical fractals
£198,918

Dr Anthony Dodd
University of Bristol
The adaptive significance of circadian gating
£210,195

Professor Maurice Elphick
Queen Mary, University of London
Stomach turning: neural mechanisms of extra-oral feeding
£213,916

Professor Neil Wyn Evans
University of Cambridge
Dark matter astrophysics with the Gaia satellite
£150,285

Professor Susan Evans
University College London
The early history and evolution of salamanders
£334,236

Dr Tijmen Euser
University of Cambridge
Optofluidic microreactors for advanced photocatalysis
£249,555

Professor Michael Farber
Queen Mary, University of London
Probabilistic and deterministic topology
£257,621

Dr João Faria Martins
University of Leeds
Emergent physics from lattice models of higher gauge theory
£110,665

Dr Marc Fivaz
University of Greenwich
Bioelectric signalling in stem cell models of human cortical development
£242,024

Dr William Fletcher
University of Manchester
Holocene glacier dynamics and environmental change in the High Atlas, Morocco
£293,357

Professor Tom Freeman
Cardiff University
Active audiovisual perception: listening and looking while moving
£239,204

Dr Matthew Fuchter
Imperial College London
Absolute symmetric synthesis using spin polarised electronchemistry
£371,863

Professor Beverley Glover
University of Cambridge
TTG1, a multifunctional plant protein, has a novel role in circadian regulation
£186,662

Professor David Grainger
University of Birmingham
Prokaryotic transcription: a new direction?
£170,739

Professor Kevin Graham
Hardwick
The innovation of branching in plants
£192,806

Professor Miles R C Hewstone
University of Oxford
Antagonistic secondary transfer effects of intergroup contact
£149,826

Professor Atsushi Higuchi
University of York
Euclidean and in-in formalisms in static spacetimes with Killing horizons
£133,096

Dr Richard Hill
University of Nottingham
Inflation and collapse of drops and bubbles levitated by a superconducting coil
£218,699

Dr Paul Hodgkinson
Durham University
Making sense of disorder in molecular solids
£280,620

Professor Tom Freeman
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Active audiovisual perception: listening and looking while moving
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£218,699

Dr Paul Hodgkinson
Durham University
Making sense of disorder in molecular solids
£280,620
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<tr>
<th>Professor Michael Holdsworth</th>
<th>Imperial College London</th>
<th>Gaps in the spectrum of random and quasiperiodic matrices</th>
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<tr>
<td>Professor Neil Hunt</td>
<td>University of York</td>
<td>Biopolymer physics defines perineuronal net morphology and synapse formation</td>
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<tr>
<td>Professor Gáspár Jékely</td>
<td>University of Exeter</td>
<td>Unnatural dynamics of flood deposits in built environments</td>
<td>£281,028</td>
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<td>Dr Kim Jelfs</td>
<td>Imperial College London</td>
<td>Synthesis of large organic polyhedra</td>
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<td>Professor Joseph Keddie</td>
<td>University of Surrey</td>
<td>Bacteria on surfaces for sustainable processes</td>
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<td>Dr Stefan Kepinski</td>
<td>University of Leeds</td>
<td>Towards the formulation of a general theory of root gravitropism</td>
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<td>Professor Rebecca Kilner</td>
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<td>Stimulation of female fecundity by males: causes and evolutionary consequences</td>
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<td>Reaction orbitals: a new paradigm for chemical reaction mechanisms</td>
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<td>Were hypervelocity impact structures cradles of life?</td>
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<td>University of Sheffield</td>
<td>Synthetic biological control of quantum optics</td>
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<td>Professor Graham J Leggett</td>
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<td>Quantifying the changing resilience of the climate system and ecosystems</td>
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<td>Dr Patrick Mahoney</td>
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<td>Biophyton of childhood growth</td>
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<td>Professor John Maltby</td>
<td>University of Leicester</td>
<td>Resilience in science, technology, engineering, and mathematics learning</td>
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<td>Professor Sanjay Manohar</td>
<td>University of Oxford</td>
<td>Predicting neural activity during working memory and attention</td>
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<td>Professor Anna Marmodoro</td>
<td>Durham University</td>
<td>Part–whole relations within the fundamental potentialities in nature</td>
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<td>Professor Alfonso Martinez Arias</td>
<td>University of Cambridge</td>
<td>An in vitro study of mechanochemical signalling during mammalian gastrulation</td>
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<td>Dr Armando Martino</td>
<td>University of Southampton</td>
<td>The Lipschitz metric and the conjugacy problem for automorphisms of free groups</td>
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<td>Professor Stephen Matthews</td>
<td>Imperial College London</td>
<td>Inspiration for a new phosphatidic acid imaging probe from Apicomplexans</td>
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<td>Professor Iain Mattys</td>
<td>University of York</td>
<td>Cognitive listening: speech perception in noise within a cognitive framework</td>
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<td>Professor Otto Muskens</td>
<td>University of Southampton</td>
<td>Extraordinary nonlinearities of light in complex systems</td>
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<td>Professor Anatoly Neishtadt</td>
<td>Loughborough University</td>
<td>Adiabatic invariance in two-frequency dynamical systems with separatrix crossing</td>
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<td>Professor Adam Nelson</td>
<td>University of Leeds</td>
<td>Phenotype-directed emergence of unnatural products</td>
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<td>Dr David Nelson</td>
<td>University of Strathclyde</td>
<td>Defining, quantifying, and understanding selectivity paradigms in iridium-catalysed C–H activation reaction</td>
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<td>Dr Darren Obbard</td>
<td>University of Edinburgh</td>
<td>A laboratory model for antiviral immunity in molluscs</td>
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</table>
Dr Emanuele Paci
University of Leeds
Rational design of dynamic molecules for enhanced multivalent binding
£248,699

Professor Mauro Paternostro
Queen’s University Belfast
Ultracold quantum thermomachine
£346,426

Dr Alessandro Patti
University of Manchester
Macromolecular diffusion in crowded colloidal suspensions
£231,771

Dr Robert Phipps
University of Cambridge
Catalytic enantioselective radical chemistry
£114,468

Professor Martin Pickering
University of Edinburgh
Prediction during comprehension: do people predict from their own perspective?
£131,322

Professor Oleg Pikhurko
University of Warwick
Measurable combinatorics
£279,935

Dr Marco Polin
University of Warwick
Unravelling phototaxis–photosynthesis connections in a model microalga
£294,096

Dr Steve Portugal
Royal Holloway, University of London
Spots, stars or stripes? The evolution of eggshell surface topography
£113,799

Dr Filippo Prischi
University of Essex
Flippping the switch: regulating protein synthesis in response to stress
£238,348

Dr Christopher Richards
University of East Anglia
Stereoochemical evolution for catalyst discovery
£117,456

Dr Stylianos Rigopoulos
Imperial College London
Towards a theory for population balance in turbulent flow
£154,166

Dr Maxie Magdalena Roessler
Queen Mary, University of London
Film-electrochemical EPR: a new method to investigate redox-based catalysis
£274,302

Dr James Rosindell
Imperial College London
Predicting global biodiversity with mechanistic simulation models
£261,180

Dr Katherine Roucoux
University of St Andrews
Valuing intact tropical peatlands: an interdisciplinary challenge
£398,932

Professor Alexander Ruban
Queen Mary, University of London
The role of the minor light harvesting antenna in photoprotection
£212,606

Dr Ben Russell
University of Edinburgh
Earthen empire: earth and turf building in the Roman North-West
£492,048

Dr Christian Saemann
Heriot-Watt University
The mathematics of M5-branes
£223,795

Dr Abhishek Saha
Queen Mary, University of London
New investigations in automorphic forms: analytic and arithmetic interfaces
£293,685

Dr Paul Saines
University of Kent
Low dimensional order in magnetic metal–organic frameworks and their analogues
£219,792

Professor Guido Sanguinetti
University of Edinburgh
Stochastic reactions in crowded cells: theories, inference and implications
£167,924

Professor Erin Saupe
University of Oxford
Constraining the frequency and tempo of niche evolution on long time scale
£160,781

Dr Andreas Schmitt
University of Southampton
Dense nuclear and quark matter in neutron stars from holography
£92,587

Dr Carola-Bibiane Schönlieb
University of Cambridge
Unveiling the invisible: mathematics for conservation in arts and humanities
£297,184

Professor Mark Sephton
Imperial College London
What lies beneath? Using plume chemistry to reveal the nature of solar system bodies
£198,457

Dr Alexey Sergeev
University of Liverpool
Arene functionalisations through metal-mediated scission of aromatic rings
£121,770

Professor Neal Skipper
University College London
Uncovering hidden phases of metal–amine solutions: glasses to superconductors
£224,806

Professor Chris Soulsby
University of Aberdeen
Isotopes in ecohydrological models to manage land-use change impacts (ISO-LAND)
£336,540

Professor Peter Swain
University of Edinburgh
Quantifying and modelling cellular decision making at the single-cell level
£200,264

Professor Nicholas Talbot
The Sainsbury Laboratory
Determining the molecular basis of the lichen symbiosis
£270,556

Professor Maximilian Telford
University College London
Deep homology of spiral cleavage in lophotrochozoan embryology
£189,684
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

Professor Philip Woodman  
University of Manchester  
Why some foods smell sweet: the neural basis of odour–taste associations  
£371,770
<table>
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<tr>
<th>Humanities</th>
<th>Dr Patti Adank</th>
<th>University College London</th>
<th>Mechanisms governing imitation of speech</th>
<th>£177,789</th>
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<tr>
<td>Humanities</td>
<td>Dr Theodora Alexopoulou</td>
<td>University of Cambridge</td>
<td>Linguistic typology and learnability in second language</td>
<td>£134,664</td>
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<td>Dr Richard Breheny</td>
<td>University College London</td>
<td>Alternatives in the foundations of a theory of implicit meaning</td>
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<td>Humanities</td>
<td>Professor Jagjit Chadha</td>
<td>National Institute of Economic and Social Research</td>
<td>Sticky prices and interwar economic fluctuations</td>
<td>£104,409</td>
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<td>Humanities</td>
<td>Ms Isobel Clouter</td>
<td>British Library</td>
<td>True echoes: reconnecting cultures with recordings from the beginning of sound</td>
<td>£448,900</td>
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<td>Humanities</td>
<td>Dr Chantal Conneller</td>
<td>Newcastle University</td>
<td>Unmasking masks: rethinking concepts of personhood in Europe 40,000–4,000 BCE</td>
<td>£259,256</td>
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<tr>
<td>Humanities</td>
<td>Dr John Lowe</td>
<td>University of Oxford</td>
<td>Uncovering Sanskrit syntax</td>
<td>£338,094</td>
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<td>Humanities</td>
<td>Professor Jessica Malay</td>
<td>University of Huddersfield</td>
<td>Autobiographical acts in seventeenth-century England, Scotland, Wales and New England</td>
<td>£335,595</td>
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<td>Humanities</td>
<td>Professor Ad Putter</td>
<td>University of Bristol</td>
<td>The literary heritage of Anglo–Dutch relations, c. 1050–1550</td>
<td>£363,449</td>
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<td>Humanities</td>
<td>Professor David Saad</td>
<td>Aston University</td>
<td>The futility of being selfish</td>
<td>£190,876</td>
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<td>Humanities</td>
<td>Dr Alexandre Sapoznik</td>
<td>King’s College London</td>
<td>Bees in the medieval world: economic, environmental and cultural perspectives</td>
<td>£387,679</td>
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<td>Humanities</td>
<td>Dr James Smith</td>
<td>Durham University</td>
<td>The Political Warfare Executive, covert propaganda and British culture</td>
<td>£328,378</td>
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<td>Humanities</td>
<td>Professor Robbie Sutton</td>
<td>University of Kent</td>
<td>Moral memory bias about the sentence of animals</td>
<td>£192,118</td>
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<td>Humanities</td>
<td>Dr Stephanie Wynne-Jones</td>
<td>University of York</td>
<td>Urban ecology and transitions in the Zanzibar Archipelago</td>
<td>£318,344</td>
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<td>Humanities</td>
<td>Professor Stephen Parker</td>
<td>Cardiff University</td>
<td>Double agent: Heinrich Simon’s constitutional mission in neabsolutist Prussia</td>
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<td>Social Sciences</td>
<td>Dr Paolo Campana</td>
<td>University of Cambridge</td>
<td>Organized crime and illegal governance in local communities in Britain</td>
<td>£119,604</td>
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<td>Social Sciences</td>
<td>Dr Glenys Caswell</td>
<td>University of Nottingham</td>
<td>Exploring the social management of lone deaths</td>
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Grants Awarded 91
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<tr>
<th>Professor/Dr/University</th>
<th>Title of Research</th>
<th>Description</th>
<th>Funding (£)</th>
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<tr>
<td>Professor Sarah Louise Holloway</td>
<td>Tutored childhoods: parenting cultures, youth transitions and social mobility</td>
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<td>Dr Andrew Robert Holmes</td>
<td>Fundamentalism as an Ulster phenomenon? Popular Protestantism, 1859–1939</td>
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<td>Dr Kelly Kallman</td>
<td>Responsible lobbyists? Corporate social responsibility and public policy</td>
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<td>Dr Rebecca Larkin</td>
<td>Orthographic awareness and spelling strategies in children with SLI</td>
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<td>Dr Covadonga Meseguer</td>
<td>Agents of change? Emigrants and the state in contemporary Mexico</td>
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<td>Dr Lauge Poulsen</td>
<td>Left behind: protecting British capital abroad, 1945–1989</td>
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<td>Professor John Turner</td>
<td>The rise of corporate titans: CEOs in the UK, 1900–2016</td>
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<td>Professor Vron Ware</td>
<td>The military in our midst: war preparation and community on Salisbury Plain</td>
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<td>£186,260</td>
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</table>
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 Gabriele 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  
*Interactions between microbe and behaviour in a wild population*

Dr John 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 Wiebeke 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 C3 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 Joshua Silverstone  
University of Bristol  
*Silicon quantum computing: light work with long waves*

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*

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

Dr Thomas Whall  
University of Oxford  
*Digital afterlives of nature: online resistance and responses to ecological loss*
Dr Caroline Ashcroft  
Queen Mary, University of London  
**Technological determinism in Cold War political thought**

Dr Michelle Assay (Eshghpour)  
University of Huddersfield  
**Shakespeare and censorship: Soviet and post-Soviet music, theatre and film**

Dr Matteo Barbato  
University of Birmingham  
**Anti-political-establishment ideology in Athenian democracy**

Dr Georgina Barker  
University College London  
**Classical lesbians in the Russian imagination**

Dr Caroline Barron  
Birkbeck, University of London  
**Fake inscriptions and the eighteenth-century art market**

Dr Doug Battersby  
University of Bristol  
**The heart of modernist fiction, 1899–1938**

Dr Kavita Bhanot  
University of Leicester  
**Beyond the nation: British self and Punjabi (m)other in British Asian literature**

Dr Gonul Bozoglu  
Newcastle University  
**The ‘mirror’ of history; prince and tyrant in Italian Renaissance literature**

Dr Lucy Campbell  
University of Warwick  
**Epistemological pluralism**

Dr William Carruthers  
University of East Anglia  
**Making global heritage: Afro-Asianism and the archaeological survey of India**

Dr Marta Bianca Maria Celati  
University of Warwick  
**The “mirror” of history; prince and tyrant in Italian Renaissance literature**

Dr Magdalen Connolly  
University of Cambridge  
**Jewish, Muslim and Christian Middle Arabic folk tales from the Ottoman period**

Dr Arabella Currie  
University of Exeter  
**William Golding and the Classics**

Dr Rachel Delman  
University of York  
**Women and the built environment in late medieval England**

Dr Polly Dickson  
Durham University  
**Reading doodles: from E.T.A. Hoffmann to Oscar Wilde**

Dr Yuval Evri  
King’s College London  
**Between partitions and translations: reviving Andalusian visions in Palestine**

Dr Natalie Ferris  
University of Edinburgh  
**Technicults of illusion: dynamism and deception in post-war literature**

Dr Matthew Gotham  
University of Oxford  
**The semantics and pragmatics of individualization**

Dr Laxshmi Greaves  
Cardiff University  
**The Rāmāyana in art: the development of epic imagery, fifth–ninth centuries CE**

Dr Benjamin Harriman  
University of Edinburgh  
**Physics, ethics and the unity of Stoic philosophy**

Dr Julia Hartley  
University of Warwick  
**West–Eastern encounters: Iran in French Literature, 1829–1908**

Dr Florence Hazrat  
University of Sheffield  
**Pause for thought: the role of brackets in experiencing Renaissance literature**

Dr Siobhan Hearne  
Durham University  
**Masculinity and sexuality in the late imperial Russian military, 1890–1917**

Dr Ben Holgate  
Queen Mary, University of London  
**Money in the digital age: cyber-capital, culture, consumption and world literature**

Dr Nick Hughes  
University of Oxford  
**Dilemmic epistemology**

Dr Kataryna Kosior  
Northumbria University  
**Kingship, elective monarchy and masculinity in Poland-Lithuania, 1573–1733**

Dr Matthew Laube  
Birkbeck, University of London  
**Sound, violence and the emotions in the Dutch revolt**

Dr Yang Liu  
University of Cambridge  
**Realistic decision theory**

Dr Livia Lupi  
University of Warwick  
**The rhetoric of architectural painting in early Renaissance Italy**

Dr Pippa Marland  
University of Leeds  
**The pen and the plough: modern British nature writing and the farm**

Dr Noreen Masud  
Durham University  
**Speaking flat: aesthetics of flatness in twentieth-century literature**

Dr Daniel Matore  
Royal Holloway, University of London  
**Contrapuntal modernism: fugal thinking in twentieth-century literature**

Dr Ornya McCausland  
University College London  
**From coal mine waste to landscape painting: new British earths**

Dr Megan McNamee  
School of Advanced Study, University of London  
**Numeracy and representation in medieval Europe**

Dr Robin Mills  
Queen Mary, University of London  
**The Scottish Enlightenment explains the gods, c. 1740–1830**

Dr Nathaniel Morris  
University College London  
**Communal militias, Indian autonomy and the Mexican state, 1850–present**

Dr Kombola Ramadhani Mussa  
Cardiff University  
**Language, mobility and identity among the Zigula (Somali Bantu)**
<table>
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<tr>
<th>Name</th>
<th>University</th>
<th>Title</th>
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<tbody>
<tr>
<td>Dr Francesca Mussi</td>
<td>Northumbria University</td>
<td>Truth-telling/story-telling: literary and critical perspectives on Canada’s TRC</td>
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<td>Dr Alexa Neale</td>
<td>University of Sussex</td>
<td>Black books: the institutional memory of hanging and mercy at the Home Office</td>
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<td>Dr Samuel O’Donoghue</td>
<td>University of Warwick</td>
<td>The struggle for Holocaust consciousness in Franco’s Spain</td>
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<td>Dr Luke O’Sullivan</td>
<td>King’s College London</td>
<td>Doubtful truth-telling in early modern France</td>
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<td>Dr Maria Pavlova</td>
<td>University of Warwick</td>
<td>The renaissance knight: war, nobility and virtue from Pulci to Ariosto, 1461–1532</td>
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<td>Dr Emma Payne</td>
<td>King’s College London</td>
<td>The evolution of technology and the interpretation of classical sculpture</td>
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<td>Dr Alessandra Petrocchi</td>
<td>University of Oxford</td>
<td>Encounters with the East: Hindu-Arabic numerals in renaissance Italy</td>
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<td>Dr Matthew Phillips</td>
<td>Royal Holloway, University of London</td>
<td>Depressive texts: mental well-being and the modern French novel</td>
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<td>Dr Juliana Pistorius</td>
<td>University of Huddersfield</td>
<td>Operatic migrations: coloniality and adaptation in the ‘new’ South Africa</td>
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<td>Dr Ben Pope</td>
<td>University of Manchester</td>
<td>The oppression of the nobility: town, country and identity in medieval Germany</td>
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<td>Dr Theo Reesves-Eivson</td>
<td>Birmingham City University</td>
<td>Speculative natures: contemporary art and interventionist ecology</td>
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<tr>
<td>Dr Justin Rivest</td>
<td>University of Cambridge</td>
<td>The state and the charitable distribution of drugs in Old Regime France</td>
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<td>Dr Maria Roca Lizarazu</td>
<td>University of Birmingham</td>
<td>Dis/integration: reimagining togetherness in recent German-language literature</td>
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<td>Dr Devani Singh</td>
<td>University of Oxford</td>
<td>To the reader: the English preface in print, c. 1475–1623</td>
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<tr>
<td>Dr Giulia Smith</td>
<td>University of Oxford</td>
<td>Landscape, identity and belonging in post-imperial Britain</td>
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<td>Dr Ian Stewart</td>
<td>Queen Mary, University of London</td>
<td>Language and race in British imperial and international thought, 1784–1914</td>
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<td>Dr Michael Yat Him Tsang</td>
<td>Newcastle University</td>
<td>World literature influences on twentieth-century Chinese and Japanese literary scenes</td>
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<tr>
<td>Dr David Veevers</td>
<td>Queen Mary, University of London</td>
<td>Transnational constitutions: Asian governance in a global world, 1600–1750</td>
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<tr>
<td>Dr Johnny Watson</td>
<td>University of Edinburgh</td>
<td>Restless earth: landscapes of extra-concentrationary violence after 1945</td>
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<td>Dr Callie Hannah Wilkinson</td>
<td>University of Warwick</td>
<td>Secrecy and transparency in the English East India Company, 1784–1834</td>
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<tr>
<td>Dr Nicola Williams</td>
<td>Lancaster University</td>
<td>Quality of life transplantation: philosophical and policy questions</td>
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<tr>
<td>Dr Yanling Yang</td>
<td>Loughborough University</td>
<td>Film co-productions as soft power for the UK and China</td>
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**Social Sciences**

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<tr>
<th>Name</th>
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<tbody>
<tr>
<td>Dr Alexandra Abello Colak</td>
<td>London School of Economics and Political Science</td>
<td>Systems of urban violence in the Americas</td>
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<tr>
<td>Dr Michael Sugarman</td>
<td>University of Bristol</td>
<td>Fluid urbanism: water, inequality and the making of Asia’s port cities</td>
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<tr>
<td>Dr Justine Trombley</td>
<td>University of Nottingham</td>
<td>The condemnation of heretical texts in the late middle ages</td>
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<td>Dr Carrie Benjamin</td>
<td>University of Warwick</td>
<td>Multisensory encounters with whiteness: public space, race and the senses</td>
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Dr Josh Bowsher, Brunel University London, Accounting for the past: the neoliberal logics of transitional justice

Dr Ekaterina Braginskaiia, University of Bristol, Minority faith and civil society responses to refugee integration in Britain

Dr Sarah Burton, City University of London, Ambivalence, power, and the cosmopolitan intellectual

Dr Benjamin Chemouni, University of Cambridge, The legacy of rebel organisational culture in post-conflict governance

Dr Licia Cianetti, Royal Holloway, University of London, What happened to the multicultural city? Effects of nativism and austerity

Dr Katherine Collins, University of Oxford, Knowledge for liberation? The participatory vision of Preire, Fals-Borda and Rahman

Dr Maggie Dwyer, University of Edinburgh, Peacekeeping veterans: deployment effects on African soldiers and communities

Dr Cara Jardine, University of Strathclyde, Corners of community: exploring the role of the ‘outside’ in prison life

Dr Matthias Kranke, University of Warwick, Pitching expertise: how international organisations establish their authority

Grants Awarded
<table>
<thead>
<tr>
<th>Name</th>
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<th>Title</th>
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<tbody>
<tr>
<td>Dr Don Lee</td>
<td>University of Nottingham</td>
<td>Rise of populist parties and assessment of representative democracy in Asia</td>
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<tr>
<td>Dr Stephen Millar</td>
<td>Cardiff University</td>
<td>Performing paramilitarism: music, conflict and Ulster loyalism</td>
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<td>Dr Jasper Montana</td>
<td>University of Oxford</td>
<td>Grappling with governance systems: biodiversity in the UK Overseas Territories</td>
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<td>Dr Poorna Mysoor</td>
<td>University of Oxford</td>
<td>Achieving copyright balance through the structure of tangible property</td>
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<td>Dr Jack Palmer</td>
<td>University of Leeds</td>
<td>Zygmunt Bauman and the West: exile, culture, dialogue</td>
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<td>Dr Alida Payson</td>
<td>Cardiff University</td>
<td>Charity shop country: conviviality and survival in austerity Britain</td>
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<tr>
<td>Dr Uma Pradhan</td>
<td>University of Oxford</td>
<td>(Re)-constructing the state: rebuilding schools in post-earthquake Nepal</td>
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<td>Dr Robert Pratal</td>
<td>University of Cambridge</td>
<td>Technologies of desire: a comparative study of IVF and PrEP</td>
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<td>Dr Deborah Ralls</td>
<td>University of Manchester</td>
<td>Redefining education for a social solidarity urban economy: becoming relational</td>
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<td>Dr Anne-Line Rodriguez</td>
<td>Queen Mary, University of London</td>
<td>EU governmentality of migration and the ethics of Islamic reformism in Senegal</td>
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<tr>
<td>Dr Lindsay Sawyer</td>
<td>University of Sheffield</td>
<td>Power, authority and land: an intra-city comparison of urban processes in Lagos</td>
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<tr>
<td>Dr Matthew Thompson</td>
<td>University of Liverpool</td>
<td>Reimagining the city: new municipalism and the future of economic democracy</td>
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<td>Dr Ophélie Véron</td>
<td>University of Sheffield</td>
<td>Is the alternative city a just city?</td>
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<td>Dr Sanne Weber</td>
<td>University of Birmingham</td>
<td>Gendering reconciliation: local reintegration from an international perspective</td>
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<td>Dr William Wheeler</td>
<td>University of Manchester</td>
<td>Seeking asylum in the UK: an ethnography of destitute lives ruled by paper</td>
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<td>Dr Anahi Wiedenbrug</td>
<td>University of Oxford</td>
<td>Banking for the public interest</td>
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<tr>
<td>Dr Thorsten Wojciewski</td>
<td>King's College London</td>
<td>Populism in Indian and US foreign policy: the politics of representing the people</td>
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<tr>
<td>Dr Sally Shinan Zhu</td>
<td>University of Glasgow</td>
<td>Shifting paradigms of material property relations in cyber- and sharing-economies</td>
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</table>
## 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 Steingrimsson**  
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  
*Lypanov 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

**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  
£51,425

**Professor Karin Friedrich**  
University of Aberdeen  
*Dynastic identity in early modern Poland: Boguslaw Radziwill 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
### Grants Awarded

**Dr Naomi Head**  
University of Glasgow  
*Empathy under fire: hearts and minds* and the politics of empathy  
£53,711

**Professor Piers Hellawell**  
Queen’s University Belfast  
*Extending music’s compositional strategies through a fusion of two new works*  
£51,511

**Professor Mark Hewitson**  
University College London  
*The violence of war: Germany, 1888–1968*  
£52,341

**Dr Suzanne Hobson**  
Queen Mary, University of London  
*Unbelief: interwar cultures of doubt*  
£54,934

**Dr Claudia Hopkins**  
University of Edinburgh  
*Rethinking orientalism: identity in Spanish art, c. 1830–1956*  
£38,592

**Professor Richard Kirkland**  
King’s College London  
*A cultural history of Irish London, 1880–1916*  
£48,231

**Dr Inna Kupreeva**  
University of Edinburgh  
*Alexander of Aphrodisias and Aristotle’s De anima*  
£48,157

**Dr Charlie Louth**  
University of Oxford  
*What happens when we read a poem? Reading Rilke*  
£49,850

**Dr Xiaoning Lu**  
SOAS, University of London  
*Transnational practices: film culture and politics in China, 1949–1989*  
£54,951

**Professor Kate Marsh**  
University of Liverpool  
Policing French colonial metropolises, 1918–1962  
£27,835

**Professor David Maw**  
University of Oxford  
*Guillaume de Machaut: inventor of absolute music*  
£49,958

**Dr Briony McDonagh**  
University of Hull  
*Gendering the commons*  
£53,905

**Professor Jeff McMahan**  
University of Oxford  
*Introducing “Re-captured Africans” in the British Caribbean, 1807–1828*  
£38,095

**Dr Simon McDougall**  
University of Exeter  
*At the edge of poetry: acrostic and teletics in Latin poetry*  
£48,525

**Professor Matthew Robinson**  
University of Manchester  
*Constructing justice*  
£54,500

**Dr Miriam Ronzoni**  
University of Manchester  
*Constructing justice*  
£54,500

**Professor Peter Sells**  
University of York  
*Verb and verb phrase topicalisation in languages of Eurasia*  
£39,893

**Dr Hugo Service**  
University of York  
*Nazis, communists and the fate of central Europe’s Jews, 1939–1949*  
£53,176

**Dr William Short**  
University of Exeter  
*Most erected spirits: a cultural semantics of Roman courage and cowardice*  
£50,740

**Dr Alex Silk**  
University of Birmingham  
*Context-sensitivity in normative language and discourse*  
£50,740

**Professor Gurharpal Singh**  
SOAS, University of London  
*A world turned upside down: Sikhs and the partition of India*  
£53,654

**Dr Paulina Sliwa**  
University of Cambridge  
*Telling right from wrong: moral testimony and moral knowledge*  
£50,958

**Dr Axel Stähler**  
University of Kent  
*Jerusalem destroyed: literature, art, and music in nineteenth-century Europe*  
£46,994

**Dr Adrian Streeter**  
University of Glasgow  
*Polemical laughter in English literary culture, c. 1500–1700*  
£53,903
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
Morpheine 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

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
£34,689

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

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

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

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
£31,389

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

Dr Patricilia Lewis
University of Kent
Post-feminism in the city: feminine leadership as lived experience
£53,112
<table>
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<tr>
<th>Name</th>
<th>University</th>
<th>Project Title</th>
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<td>Professor Katie Lloyd Thomas</td>
<td>Newcastle University</td>
<td>The architect as shopper: building products and the proprietary turn in the UK</td>
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<td>Dr Elizabeth Mavroudi</td>
<td>Loughborough University</td>
<td>Children’s politicisation in diaspora: a comparative exploration</td>
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<td>Dr Gearoid Millar</td>
<td>University of Aberdeen</td>
<td>Ambition and ambivalence: peace studies in a changing world</td>
<td>£46,848</td>
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<tr>
<td>Dr Jonathan Oldfield</td>
<td>University of Birmingham</td>
<td>The development of environmental monitoring capacities in the USSR and Russia</td>
<td>£38,522</td>
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<tr>
<td>Dr Dimitris Papadopoulos</td>
<td>University of Leicester</td>
<td>Benign by design: the emergence of ecologically sustainable chemical innovation</td>
<td>£51,320</td>
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<tr>
<td>Dr Minoli Salgado</td>
<td>University of Sussex</td>
<td>The other side of violence: terror and trauma in contemporary exile literature</td>
<td>£54,741</td>
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<tr>
<td>Dr Mohammad Shahabuddin</td>
<td>University of Birmingham</td>
<td>Postcolonial statehood and international law: the Rohingya crisis and beyond</td>
<td>£50,845</td>
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<tr>
<td>Dr Lena Rethel</td>
<td>University of Warwick</td>
<td>Markets as spectacles? Principles, practices and governance of Islamic economies</td>
<td>£54,144</td>
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<tr>
<td>Dr Amanda Rogers</td>
<td>Swansea University</td>
<td>Dance in contemporary Cambodia: nation, geopolitics, identity</td>
<td>£54,998</td>
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<tr>
<td>Dr Pollyanna Ruiz</td>
<td>University of Sussex</td>
<td>Remembering and forgetting: media, memory, activism</td>
<td>£54,807</td>
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<td>Dr Weipin Tsai</td>
<td>Royal Holloway, University of London</td>
<td>Couriers for the common folk: the private firms that joined up China</td>
<td>£51,280</td>
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<tr>
<td>Professor Maria Tamboukou</td>
<td>University of East London</td>
<td>Revisiting the nomadic subject</td>
<td>£54,248</td>
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<tr>
<td>Dr Mohammad Shahabuddin</td>
<td>University of Birmingham</td>
<td>Postcolonial statehood and international law: the Rohingya crisis and beyond</td>
<td>£50,845</td>
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<tr>
<td>Professor Dimitris Tziovas</td>
<td>University of Birmingham</td>
<td>Crisis Greece: culture, identity and the West</td>
<td>£46,581</td>
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<tr>
<td>Dr Han van Wietmarschen</td>
<td>University College London</td>
<td>A theory of social hierarchy</td>
<td>£37,348</td>
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<tr>
<td>Professor Vron Ware</td>
<td>Kingston University</td>
<td>One village, one world</td>
<td>£37,691</td>
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### Major Research Fellowships

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<thead>
<tr>
<th>Professor/Candidate</th>
<th>Institution</th>
<th>Project Title</th>
<th>Funding Amount</th>
</tr>
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<tr>
<td>Professor Catherine Alexander</td>
<td>Durham University</td>
<td>Forms and fears of failure</td>
<td>£145,270</td>
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<tr>
<td>Professor Amalia Arvaniti</td>
<td>University of Kent</td>
<td>Politics and linguistic variation in a post-diglossic speech community</td>
<td>£106,560</td>
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<tr>
<td>Professor David Brown</td>
<td>University of Southampton</td>
<td>The aristocratic tradition at its best? Shaftesbury, philanthropy and reform</td>
<td>£137,099</td>
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<tr>
<td>Dr Sam Coleman</td>
<td>University of Hertfordshire</td>
<td>Consciousness as bystander: exploring the mostly unconscious mind</td>
<td>£85,766</td>
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<tr>
<td>Professor Derek Duncan</td>
<td>University of St Andrews</td>
<td>Loose ends: minor transnational Italian cultures</td>
<td>£114,022</td>
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<tr>
<td>Professor Lindsay Farmer</td>
<td>University of Glasgow</td>
<td>Rethinking the relationship between markets and criminal law</td>
<td>£141,554</td>
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<tr>
<td>Professor Chris Gosden</td>
<td>University of Oxford</td>
<td>Becoming human: a new world history</td>
<td>£143,731</td>
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<tr>
<td>Dr Rick Knecht</td>
<td>University of Aberdeen</td>
<td>Yup’ik culture before contact</td>
<td>£157,468</td>
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<tr>
<td>Professor Ismene Lada-Richards</td>
<td>King’s College London</td>
<td>Poetics in the flesh: dance and poetry in first-century BCE Rome</td>
<td>£160,151</td>
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<td>Professor Kate McLoughlin</td>
<td>University of Oxford</td>
<td>Silence: a literary history</td>
<td>£159,448</td>
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<tr>
<td>Professor Rana Mitter</td>
<td>University of Oxford</td>
<td>The Chinese postwar and the making of Asian order, 1945–1955</td>
<td>£178,065</td>
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<tr>
<td>Professor James Craig Muldrew</td>
<td>University of Cambridge</td>
<td>New abstract financial value and society in the early eighteenth century</td>
<td>£111,211</td>
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<tr>
<td>Professor Joy Porter</td>
<td>University of Hull</td>
<td>What Would Nixon Do? The forgotten republican roots of American environmentalism</td>
<td>£155,473</td>
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<tr>
<td>Dr Yossef Rapoport</td>
<td>Queen Mary, University of London</td>
<td>Tribal identity and conversion to Islam in rural Egypt and Syria, 1000–1500</td>
<td>£169,314</td>
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<tr>
<td>Dr Alice Rio</td>
<td>King’s College London</td>
<td>Early medieval legal cultures</td>
<td>£151,530</td>
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<tr>
<td>Professor Katie Scott</td>
<td>Courtauld Institute of Art, University of London</td>
<td>Open City: Paris and the arts in the eighteenth century</td>
<td>£166,221</td>
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<tr>
<td>Professor Martin Thomas</td>
<td>King’s College London</td>
<td>Urban Song of the Upper Euphrates (Turkey)</td>
<td>£166,590</td>
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<tr>
<td>Professor Martin Thomas</td>
<td>University of Exeter</td>
<td>Globalising decolonisation: connecting processes of global transformation</td>
<td>£148,824</td>
</tr>
<tr>
<td>Professor Jan Toporowski</td>
<td>SOAS, University of London</td>
<td>The intellectual biography of Oskar Lange</td>
<td>£191,816</td>
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<tr>
<td>Professor David Treece</td>
<td>King’s College London</td>
<td>Music and anti-racism in contemporary Brazil</td>
<td>£166,590</td>
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<tr>
<td>Professor Laura Tunbridge</td>
<td>University of Oxford</td>
<td>A social and sonic history of the string quartet</td>
<td>£177,322</td>
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<tr>
<td>Professor Neil Walker</td>
<td>University of Edinburgh</td>
<td>Law, community and utopia</td>
<td>£176,212</td>
</tr>
<tr>
<td>Professor Martin Thomas</td>
<td>University of Exeter</td>
<td>Globalising decolonisation: connecting processes of global transformation</td>
<td>£148,824</td>
</tr>
<tr>
<td>Professor Janet C E Watson</td>
<td>University of Leeds</td>
<td>The phonetics and phonology of Modern South Arabian: Mehri and Shehret</td>
<td>£104,765</td>
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<tr>
<td>Professor Gary Watt</td>
<td>University of Warwick</td>
<td>Rhetorical performance in courts of law and popular opinion</td>
<td>£175,554</td>
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<tr>
<td>Professor Clive Webb</td>
<td>University of Sussex</td>
<td>Mob violence against foreign nationals in the United States, 1850–1950</td>
<td>£151,317</td>
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<tr>
<td>Professor Björn Weiler</td>
<td>Aberystwyth University</td>
<td>Unity, diversity and the past in Europe, c. 1100–1300</td>
<td>£155,304</td>
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<tr>
<td>Professor David Wootton</td>
<td>University of York</td>
<td>Voltaire: made in England</td>
<td>£65,042</td>
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</table>
## Philip Leverhulme Prizes

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

### Classics
- Dr Amin Benaisa  
  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  
  Department 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
- 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 Belloiche  
  £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-Blienser  
  £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 – Professor 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  
  £31,420
- **Mr Geoffrey Colman**  
  Royal Central School of Speech and Drama  
  Visitor – Professor Anne Bogart  
  £75,760
- **Mr Gair Dunlop**  
  University of Dundee  
  Visitor – Dr Alasdaire 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
<table>
<thead>
<tr>
<th>Visiting Professorships</th>
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</table>
| **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 Patricia Skinner**  
Swansea University  
Visitor – Professor Wendy Turner  
£47,596 |
| **Professor Richard Widdess**  
SOAS, University of London  
Visitor – Professor Linda Barwick  
£33,900 |
| **Social Sciences** |
| **Professor Patricia Skinner**  
Swansea University  
Visitor – Professor Wendy Turner  
£47,596 |
| **Professor Richard Widdess**  
SOAS, University of London  
Visitor – Professor Linda Barwick  
£33,900 |
| **Professor Nathan Widder**  
Royal Holloway, University of London  
Visitor – Professor Jeffrey Bell  
£33,456 |
| **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 Richard Widdess**  
SOAS, University of London  
Visitor – Professor Linda Barwick  
£33,900 |
| **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 |
| **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 |
| **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 Richard Widdess**  
SOAS, University of London  
Visitor – Professor Linda Barwick  
£33,900 |
| **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 |
| **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 |
## Emeritus Fellowships

### Sciences

<table>
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<th>Name</th>
<th>Institution</th>
<th>Project Description</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Professor James Binney</td>
<td>University of Oxford</td>
<td>Understanding our Galaxy</td>
<td>£16,800</td>
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<tr>
<td>Professor Philip Brown</td>
<td>University of Kent</td>
<td>Making the most of correlation: seemingly unrelated statistical modelling</td>
<td>£14,850</td>
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<tr>
<td>Professor Howard Colquhoun</td>
<td>University of Reading</td>
<td>Fractal distribution of sequence information in binary copolymers</td>
<td>£16,196</td>
</tr>
<tr>
<td>Professor Dianne Edwards</td>
<td>Cardiff University</td>
<td>Resolution of anatomy, ontogeny and affinities of Siluro-Devonian Pachytheca</td>
<td>£22,000</td>
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<tr>
<td>Professor Geoffrey Holman</td>
<td>University of Bath</td>
<td>A molecular mechanism for membrane transport</td>
<td>£10,800</td>
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<tr>
<td>Professor James Howie</td>
<td>Heriot-Watt University</td>
<td>Residually free groups and one-relator products</td>
<td>£15,400</td>
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<tr>
<td>Professor Gareth Jones</td>
<td>King's College London</td>
<td>Development of a combined AFM-super-resolution microscope</td>
<td>£18,075</td>
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<tr>
<td>Professor Tim Jones</td>
<td>University of Liverpool</td>
<td>Scale-invariant quantum gravity, cosmology and particle physics</td>
<td>£18,400</td>
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<tr>
<td>Professor Rob Marrs</td>
<td>University of Liverpool</td>
<td>Vegetation change in long-term experiments in the British uplands</td>
<td>£19,658</td>
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<td>Dr John Noyes</td>
<td>Natural History Museum</td>
<td>The Encyrtidae (Hymenoptera: Chalcidoidea) of Costa Rica</td>
<td>£21,500</td>
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<td>Dr Christopher Page</td>
<td>University of Exeter</td>
<td>Evolution in the arboreal forest gymnosperms – a global study</td>
<td>£18,400</td>
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<tr>
<td>Professor Brian Rogers</td>
<td>University of Oxford</td>
<td>Perception of the 3D world</td>
<td>£13,614</td>
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<tr>
<td>Professor Stephen Sparks</td>
<td>University of Bristol</td>
<td>Exploring theories for epidemic volcanism</td>
<td>£21,980</td>
</tr>
<tr>
<td>Professor Michel van den Berg</td>
<td>University of Bristol</td>
<td>Brownian motion, torsion and capacity</td>
<td>£15,588</td>
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<tr>
<td>Professor Anthony Watts</td>
<td>University of Oxford</td>
<td>Planetary isostasy and its implications for plate mechanics and mantle dynamics</td>
<td>£21,495</td>
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### Humanities

<table>
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<th>Name</th>
<th>Institution</th>
<th>Project Description</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Dr Ann Benson</td>
<td>University of Wales</td>
<td>Cambridge colleges: a history of their gardens and designed landscapes</td>
<td>£16,600</td>
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<tr>
<td>Professor Margaret Brazier</td>
<td>University of Manchester</td>
<td>Law and healing: reflecting on English medico-legal history</td>
<td>£21,406</td>
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<tr>
<td>Professor David Buckingham</td>
<td>Loughborough University</td>
<td>The construction of children as a media market in the United States, 1945–2000</td>
<td>£18,800</td>
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<tr>
<td>Professor Gilli Bush-Bailey</td>
<td>Royal Central School of</td>
<td>Speech and Drama Under the skirts of Shakespeare</td>
<td>£14,911</td>
</tr>
<tr>
<td>Professor Richard John</td>
<td>Royal Holloway,</td>
<td>Carwardine American religious nationalism, 1787–1865</td>
<td>£6,310</td>
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<tr>
<td>Professor Justin Champion</td>
<td>University of London</td>
<td>Thomas Holli: fabricating liberty, from Rome to the Age of Revolution</td>
<td>£16,819</td>
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<tr>
<td>Professor Richard Cooper</td>
<td>University of Oxford</td>
<td>Critical editions of Scève and Michel d’Amboise and of satires on the Regent</td>
<td>£14,470</td>
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<tr>
<td>Sir Mark Jones</td>
<td>University of Oxford</td>
<td>The life and work of William Wyon</td>
<td>£21,250</td>
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### 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
Emeritus Fellowships

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
Nama nu 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 germine 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 Pirei 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
### 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 girlhood 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

<table>
<thead>
<tr>
<th>Institution</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Academy of Northern Ballet</td>
<td>£53,000</td>
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<td>Artsed</td>
<td>£260,397</td>
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<td>Birmingham Conservatoire</td>
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<td>Central School of Ballet</td>
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<td>Chetham’s School of Music</td>
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<td>Dartington Hall Trust</td>
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<td>Elmhurst Ballet School</td>
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<td>London Contemporary Dance School</td>
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<td>London Film School</td>
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<td>London Sinfonietta</td>
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<td>Maggie Dance</td>
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<td>National Children’s Orchestras of Great Britain</td>
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<td>National Film and Television School</td>
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<td>Opera North</td>
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<td>Purcell School</td>
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<td>Royal Ballet School</td>
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</tbody>
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*Grants Awarded 109*
Image credits, with relevant grant holder

Pages 4 & 8
Courtesy of Unilever Archives.

Pages 7 & 12
Rosie Hallam.

Page 11

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-Marín, 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 102
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: John Batten Photography). 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.

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Page 107
*The Yoruba Blues Series*. Ms Lucille Junkere, Study Abroad Studentship.

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Page 109
Rambert School performance, photographer: Nicole Guarino. Rambert School of Ballet and Contemporary Dance, Arts Scholarship.

Page 100
*Selaginella kraussiana* showing the growth of branches arising from a branch point. Dr Jill Harrison, Research Project Grant.
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