A watercolor illustration of Isaac Newton, depicted in profile, wearing a purple robe and a brown hat. He is seated at a desk, holding a small object (possibly a prism) that emits a beam of light. This beam of light is refracted into a large, vibrant rainbow that extends across the right side of the image. The background is a mix of dark blue and grey washes, with several small, circular, glowing objects floating in the upper left, suggesting celestial bodies or particles.

Isaac
Newton
Trust

Annual Report

Volume XXVII

1 July 2016 – 30 June 2017

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Cover artwork: Isaac Newton's Prism: created by Sir Quentin Blake on the event of the University's 800th Anniversary as a way of marking the outstanding contribution to science and art that the University and its members have made over the years.

Report designed by www.dangould.co.uk, printed by Minuteman Press, Cambridge

Welcome to the Isaac Newton Trust's twenty-seventh Annual Report.

We have now completed two years of review and are pleased to report a number of changes to our funding strategy and a major revision of the Trust Deed, which sets out the terms of our activities and governance of the Trust.

The Trust has embarked on a structured mobilisation of a portion of its reserves in support of a number of more substantial, long-term projects for the benefit of the University's research portfolio and profile. The Trust does not have an endowment, but has significant reserves accumulated over the years that currently generate about 25% of our annual income. The intention is to reduce our reserves and to maintain them at a level that is sufficient to cover current commitments and other contingency. While it has always been the case that major grants (to enable the establishment of new research institutes and programmes, for example) have been a staple of the Trust's activities, these are now more explicitly acknowledged as part of the current financial strategy of the Trust.

This is not to say that we have neglected our existing programmes of support for individual researchers. The Trustees recognise the potentially transformative power of relatively small interventions at critical points in a research career and are pleased to have made over 200 new awards to individuals during the course of the 2016-17 financial year, either directly, through research grants and fellowships, or indirectly, through major University programmes.

Behind the scenes, there has been a great deal of discussion with Trinity College and with the University about the governance of the Trust. As a result, the Trust Deed has undergone a root-and-branch revision. The revised Deed changes significantly the arrangements for the appointment of Trustees and brings our governing document into line with current legislation. The Trust remains an exempt charity as a connected institution of the University of Cambridge, and will maintain strong links with the College that reflect the indissoluble nature of our relationship and the College Council's interest in the good governance and financial probity of the Trust.

At the same time, we have been engaged in negotiations to relocate the Trust's office and so release back to the College the two student rooms we have occupied for the past 20 years. We are delighted to report that we will be moving to the University's new development at Eddington, Northwest Cambridge, where we will be embedded in the Postdoc Centre. We are grateful to the staff of the Office for Postdoctoral Affairs for agreeing to share with us, and to the many members of the University and College staff who have smoothed the way for us to move in September 2017.

If you have any queries or comments on this Report, or on the Trust in general, please do not hesitate to contact me.



Dr Laurie Friday
Director

Patron

H.R.H. The Prince of Wales

Trustees

Professor Lord Robert J Mair (Chairman)
Professor Jeremy J Baumberg
Professor Stefan Collini
Professor Sarah J Colvin (from 01 May 2017)
Professor Gerard I Evan
Professor Simon C Franklin (to 31 March 2017)
Professor Frank P Kelly (from 01 May 2017)
Professor David J McKitterick (to 31 August 2016)
Professor Richard M Smith
Professor Dame A Marilyn Strathern
Professor Dame Jean O Thomas (from 01 May 2017)
Sir Gregory Winter

Officers & Staff

Dr Laurie E Friday (Director)
Mr Donald P Hearn (Treasurer)
Dr Nichola C Tooke (Senior Administrator)
Ms Janet R Sparrow (Research Administrator)

Aims & Objectives of the Trust

'To promote education, learning and research in the University of Cambridge.'

The Isaac Newton Trust is an exempt charity under the Charities Act 2011 as a connected institution of the University of Cambridge and is regulated by HEFCE.

To 22 September 2017:

Trinity College,
Cambridge CB2 1TQ

From 22 September 2017:

The Postdoc Centre,
105 Eddington Place
Cambridge CB3 1AS

Tel (01223) 339933
www.newtontrust.cam.ac.uk



DIRECTOR'S REPORT

The Trust's Funding Activities

One of the Trustees' main projects this year has been to improve the processes by which they identify the best proposals and most deserving applicants for the receipt of awards. Comparing like-for-like is a perennial challenge in a University with such a broad spectrum of excellent research, in which many projects are highly specialised while others draw together researchers across a wide range of disciplines.

So far as subject-specific research is concerned, the Trustees have experienced very positive results through the devolution of academic decision-making to panels of senior researchers in cognate pairs of Schools. The model for this has been the 'Joint Schools' programmes (see page 16) in which applications are judged according to the academic criteria that are generally most suitable in their subject areas. Trustees have therefore expanded this approach this year to their own research grants in biological and medical areas and to the internal competition for matching funding for Leverhulme Early Career Fellowships, with very encouraging outcomes.

The Trustees, who bring expertise in a very broad range of research to discussions, will continue to make decisions regarding other subject areas and interdisciplinary projects at their meetings three times a year. In order to encourage more cross-fertilisation of skills and ideas, the research grant competition has been opened to the University's new Interdisciplinary Research Centres (IRCs) and the Trustees have launched a new programme for Strategic Research Projects and Programmes, many of which are interdisciplinary in nature.

The financial impact of this expansion is already being felt in the Trust's accounts (see page 26), but this is in accordance with the Trustees agreed policy to start to mobilise a portion of the Trust's reserves in support of larger research projects. Investments will be reduced to a level that ensures our forward commitments can be honoured, plus a small contingency to allow the Trust to respond to an unmissable opportunity to secure a major new project for the University. Trustees will monitor the progress of this strategy and amend their funding commitments as necessary to achieve a graduated approach to the desired position.

In deciding who and what to fund, the Trustees continue to hold to the following general principles:

- **To fund research in the University of Cambridge in all subjects;**
- **To respond flexibly to emerging needs;**
- **To prefer to help new projects get off the ground, generally committing to projects for no more than 5 years and reviewing existing projects at intervals;**
- **To promote excellence in research and scholarship;**
- **To prioritise early career researchers, helping to grow the University's intellectual capital;**
- **To secure or attract matching funding from outside the University wherever possible.**

Isaac Newton Research Grants

Our website was restructured and relaunched in May 2017 to clarify and manage the expectations of applicants. The previously mixed category of 'Research Grants' is now subdivided to cover distinct types to which the application details and the terms and conditions can be tailored. Applicants are asked to identify the category in which they are applying as follows:

- **Emergency Grants:** up to £30k over 12 months: for bridging salary costs, short periods of underwriting, or start-up grants;
- **Project Grants:** up to £60k over three years: for initial partner funding for new research projects, grants for unconventional, innovative forms of research and scholarship;
- **Strategic Research Programmes & Projects:** up to £1m over five years: for large, institutional, perhaps interdisciplinary, programmes of strategic value to the University for the promotion of education or research;
- **Equipment Grants:** awards or loans of up to about £50k each for exceptional requests for a key research item, to be funded in partnership with other University institutions, or for costs associated with use of shared facilities.

From 2017-18, Strategic Research Programmes & Projects will have an annual call in Michaelmas Term. The other categories will continue in three termly rounds.

Early Career Research Fellowships

Central to the Trustees' priorities is helping to launch the independent careers of early career researchers across all subjects by providing matching funding on behalf of the University for a number of intensely competitive Early Career Fellowship programmes. These awards now account for more than a quarter of the Trust's annual expenditure, and are currently delivering excellent value for money, but this level of commitment will obviously need to be reviewed in due course.

The Trustees are taking a more pro-active interest in the careers of these fellows as part of a wider effort to engage postdoctoral fellows in College and University communities. Discussions have begun with Colleges to explore how the Trust might help to facilitate associations for those who would otherwise start their fellowship in Cambridge without a College.

The Trustees trialled a new procedure this year for identifying the candidates to be supported by the Trust on behalf of the University for Leverhulme Early Career Fellowships. First, academic panels nominated by the Schools were invited to select the top candidates applying to carry out research in their Schools, applying criteria appropriate to their particular area. Secondly, the total number of offers of support was fixed by the Trustees at 50 with the number available to each pair of Schools set in proportion to the Schools' success at the national level in the past three competitions. This experiment was an outstanding success (see page 18) and the same procedure will be used next year.

In view of possible changes in the relationship between the UK and Europe, and consequent effects on opportunities for academic collaboration, the Trustees have expressed a wish to foster links with European partners. One outcome has been the decision to match fund, on behalf of the University, the Humboldt Foundation's Feodor Lynen Early Career Fellows, for whom our German partner institution carries out due diligence through a national selection competition akin to that run by the Leverhulme Trust in the UK (see page 20). A further step in this direction has been taken through a substantial grant for research fellowships as part of a Centre for the Study of Ethics, Human Economy and Social Change to be established in Cambridge in partnership with the Max Planck Institutes at Halle/Saale and Göttingen (see page 14).



Partnerships with the Schools

The Trustees have renewed their commitment to research funding for newly-appointed University Lecturers and independent Principal Investigators (PIs) through grants administered by the Schools of Biological Sciences/Clinical Medicine and Physical Science/Technology. Trustees consider their annual contribution to the Cambridge Humanities Research Grants (CHRG) and small grant scheme, managed by the Schools of Arts & Humanities and Humanities & Social Sciences, to have a beneficial impact far in excess of the size of the grants. All three competitions are academically and administratively centred on the pairs of Schools concerned and Trustees feel that this achieves their goal of targeting funding most effectively.

Partnerships with Colleges

We have continued to build on existing relationships with the Colleges, in particular those with fewer resources, and especially where this can benefit early career researchers. Two well-established programmes have been reviewed and renewed this year: 'Time-Limited' Teaching Fellowships, and College Teaching Officer (CTO) Research Leave (see pages 22-23).

Student support

As reported last year, from July 2016 the Trust has no longer provided funding for the Cambridge Bursaries Scheme (CBS).

The remainder of our restricted Bursaries Fund has been used to provide MPhil bursaries in partnership with Colleges for UK students seeking to proceed to doctoral research. This programme goes from strength to strength and the Trustees have agreed to support it to the extinction of the restricted fund. We have advised the University that the Trust will no longer be able to co-fund these awards beyond the 2018-19 cohort. However, we hope very much that the success of this five-year trial will demonstrate what can be achieved and prove attractive to other sources of funding to enable this important first step on the research ladder to continue.

Summary of new grants awarded in 2016-17

In brief, the Trust has awarded or match-funded:

32	Research grants
9	Strategic grants
65	Research grants part-funded through our partnerships with the Schools
20	Leverhulme Early Career Fellowships (for admission in 2017-18)
2	ESRC Future Leaders Fellowships
3	Humboldt Feodor Lynen Early Career Research Fellowships
3	Newton/College Junior Research Fellowships (for admission in 2017-18)
4	College Teaching Officer Research Leave grants
2	Teaching Fellowships
73	MPhil bursaries jointly with the Colleges

Governance

The Trust Deed, which dates from 1988, sets out the purposes of the Trust and makes provision for the appointment of Trustees, but it is silent on the mechanisms for the review and amendment of the Deed. Furthermore, legislation surrounding charitable activities and employment has moved on a great deal since 1988. Trustees therefore felt that a complete revision of this document would be desirable.

The Council of Trinity College has been engaged throughout the process. Indeed, the Council initiated matters by questioning whether the appointment *ex officio* of the Master and Vice-Master of the College as Trustees might potentially conflict with their positions as Chair and Vice-Chair of the Council. Having engaged in this discussion, the Trust and Council were drawn into a more fundamental review of the arrangements by which Trustees are appointed. The end result has been that it is agreed that the *ex officio* positions should be suppressed, and the responsibility for the appointment of the majority of Trustees to fall to the Trustees themselves. A strong Trinity connection will, however, be maintained through the appointment by the College Council of one or two Fellows of Trinity as Trustees.

A new Deed has been drawn up by Mills & Reeve to include standard provisions bringing the Trust into line with the requirements of the Charities Act as well as provision for amendment of the Deed and winding up of the Trust, should this be necessary in future.

The new Deed is expected to come into force in July 2017.

Patron, Trustees and Officers

We are delighted that His Royal Highness, The Prince of Wales, has graciously agreed to continue as our Patron for up to three more years, to July 2020.

Two Trustees stood down in the course of the year in accordance with the terms of the original Trust Deed: Professor David McKitterick, whose Trusteeship was *ex officio*, retired from his position as Vice-Master of Trinity at the end of August 2016, and Professor Simon Franklin reached the end of the third of three consecutive terms of service on 31 March 2017. The Trust is immensely indebted to Professors McKitterick and Franklin, who have both contributed to the Trust an extraordinary depth of knowledge of the University and Colleges, as well as fine scholarship and wisdom.

Trinity College Council has made three new appointments, and we are proud to welcome as Trustees with effect from 01 May 2017:

Professor Sarah Colvin, Schröder Professor of German, Fellow of Jesus College;

Professor Frank Kelly, Professor of the Mathematics of Systems, formerly Master of Christ's College;

Professor Dame Jean Thomas, Emeritus Professor of Macromolecular Biochemistry, formerly Master of St Catharine's College.

The Office

We were delighted to welcome Dr Nichola Tooke as our new Senior Administrator on 26 October 2016. Nichola, who brings a wide range of experience and administrative skills from her previous roles in the Student Registry and Faculty of Architecture & History of Art, will work part-time (see inside back cover).

Ms Janet Sparrow continues to provide excellent bed-rock support as the Trust's part-time Administrator with particular responsibility for Research Grants.



AWARDS MADE IN 2016-17

Research Grants

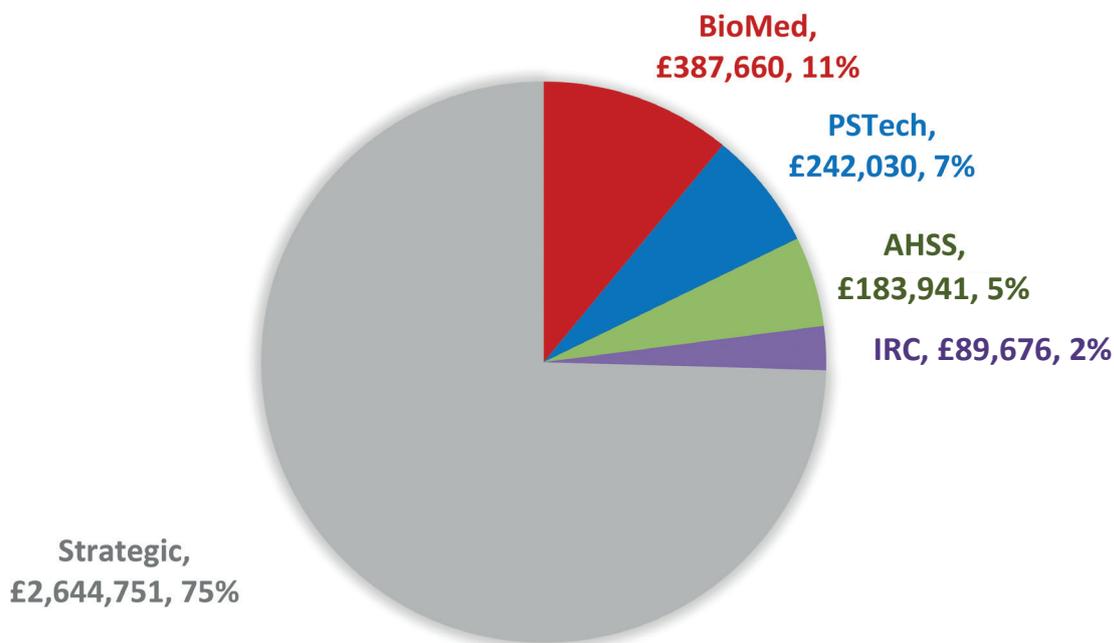
Project and Programme Research Grants

INT Research Grants are awarded to Departments and other University institutions, across the full range of subjects, normally for the support of a specific project under the leadership of a named Principal Investigator (PI). Particular attention is given to the qualities of the research project, on which we seek advice from external and internal referees, but consideration is also given to the likely benefits of a grant to the Department, the PI, and/or early career researchers involved. Decisions are made by the Trustees in round-table discussions at meetings held three times a year, with input from senior academics nominated by the Schools in the case of biological and medical subjects.

Most grants are contributions to support the salary of a Research Associate, often near the start of his or her post-doctoral career, but grants are also made for urgently-needed new equipment, and for major, sometimes interdisciplinary, projects of strategic importance to the University.

Trustees committed £3.6m to new Research Grants in this category in 2016-17 (Fig. 1), significantly more than in the past two years (£1.0m in 2015-16, £1.2m in 2014-15). This increase is primarily due to nine large, longer-term grants made to the Schools and University Central offices for strategic purposes and two awards to newly-designated Interdisciplinary Research Centres (IRCs).

Figure 1: New research grants awarded 2016-17: total value, by School/Institution

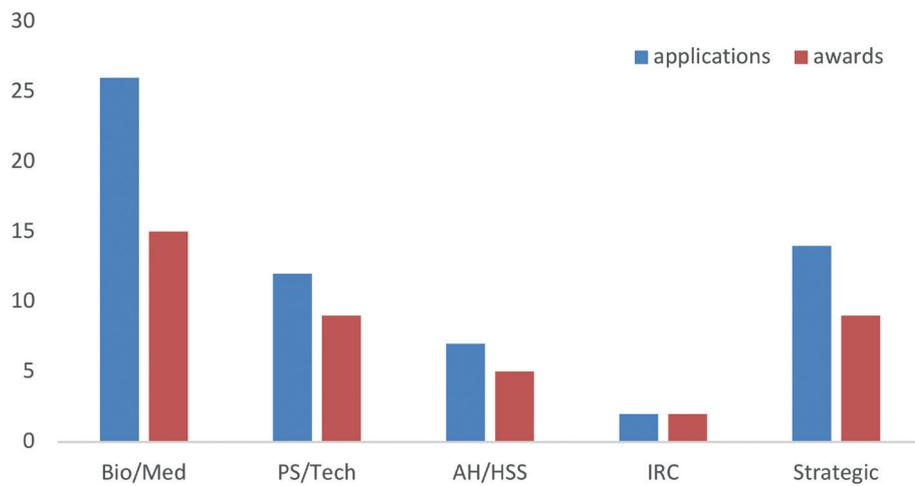


Over the year, 61 applications were received across all Schools and institutions, somewhat more than last year (55 in 2015-16, 69 in 2014-15, 55 in 2013-14), which again reflects the inclusion of applications from the new IRCs and the Schools and central offices for strategic grants (Fig. 2).

The success rate across all institutions and categories was 66% (72% in 2015-16, 58% in 2014-15, 66% in 2013-14).

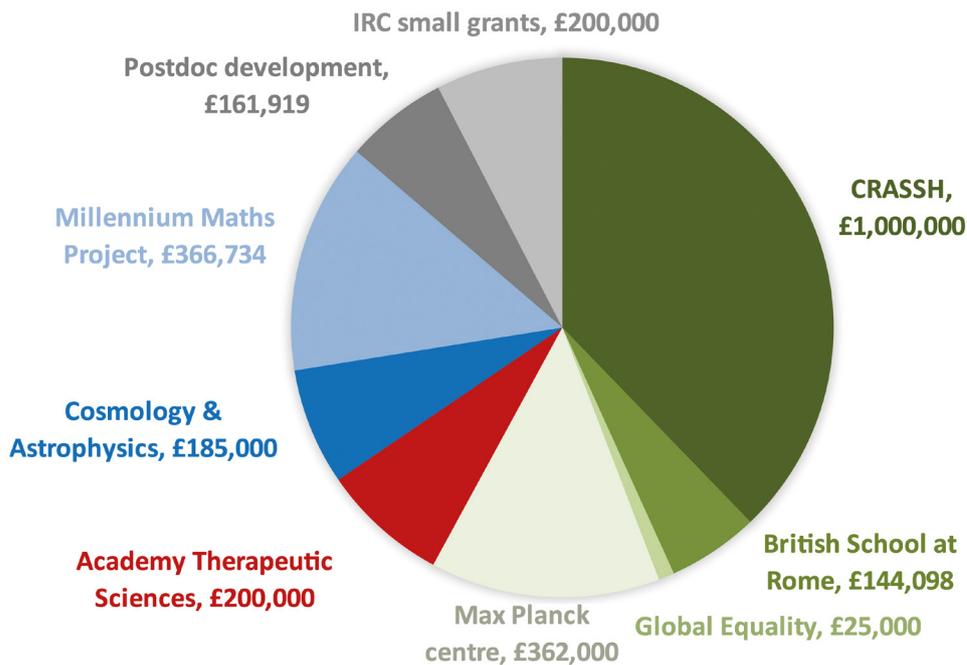
Forty-one new awards were made, one more than last year, of which almost a quarter were in the ‘Strategic’ category:

Figure 2: Research Grants 2016-17: applications and awards, by School/Institution



Strategic grants ranged in value from £25k for one-off seed funding to £1m to be spent over 5 years, with just over half of the spend accounted for projects in the general area of the Arts, Humanities and Social Sciences (blue sectors, Fig. 3):

Figure 3: Strategic Research Grants awarded 2016-17: by School and project



For further details of these grants, see the list of awards (page 14).



Research Grants to departments and faculties are not subject to any specific rules of distribution across academic areas: Trustees do not currently limit the number of applications they are willing to consider from any given School or from any particular department or faculty. There is, however, a persistent pattern of marked differences between the numbers of applications received from the University's constituent institutions (see Fig. 2). This reflects to a large extent the prevalent modes of research in different Schools: in Biological Sciences, as in most STEM subjects, the norm is a research group including a number of postdoctoral workers, indeed, a large proportion of the 4,000 postdocs in Cambridge are concentrated in this School. It is also clear, however, that some departments have developed a particularly effective strategy, putting together various resources (external funding where available, but also a contribution from the department itself) to match the amount sought from the Trust. Other departments seem to take a different approach to bridging funding gaps, tending to submit applications to the Trust only in exceptional cases (see the list of awards on pages 12-15).

The frequency distributions of awards of different duration (Fig. 4) and value (Fig. 5) have shifted somewhat since last year. This is due not only to the addition of longer, more substantial strategic grants, but also to a reduction in the number of small (<£20k), short (one year or less) awards. We believe that the number of shorter awards may increase again in future, when the new category of 'emergency grants' has become fully established.

Figure 4: Research Grants 2016-17: duration of awards, compared to 2015-16

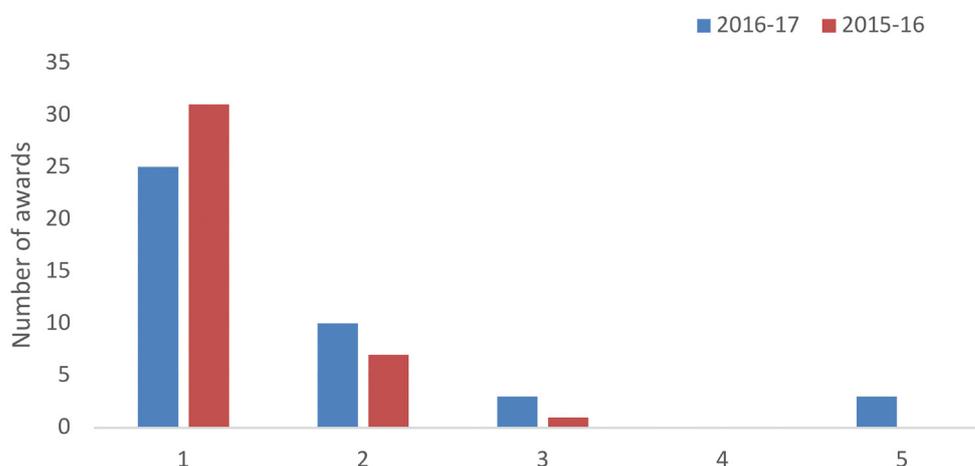
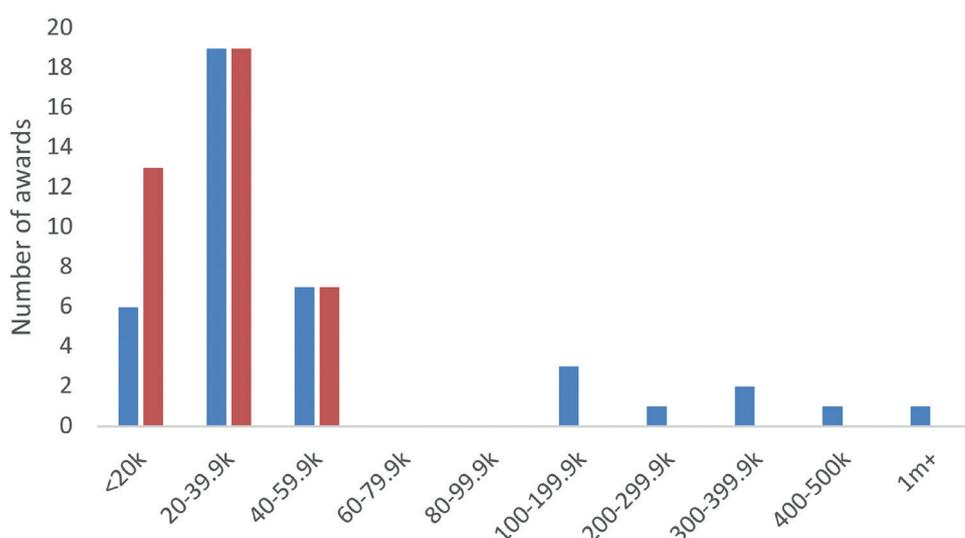


Figure 5: Research Grants 2016-17: value of awards, compared to 2015-16



Most, but not all, of the money awarded for research projects is spent. Apart from small refunds of unused cash at the end of the grant, some awards are not taken up, if, for example, matching funding does not materialise or if applicants provided with bridging funds are successful in finding alternative support, and these sums are written back in the accounts.

Isaac Newton Trust Research Grants awarded in 2016-17

Schools of Arts, Humanities and Social Sciences

Archaeology and Anthropology (Dr Kate Spence)

Conceptions of the afterlife: rethinking ancient Egyptian mortuary religion
A one-year grant in support of a Research Associate.

Classics (Dr Alessandro Launaro and Professor Martin Millett)

Town and Hinterland: Interamna Lirenas and its territory through antiquity
A grant to underwrite fieldwork costs.

Fitzwilliam Museum (Helen Strudwick and Julie Dawson)

Cartonnage and cartonnage-like structures in ancient Egyptian coffins
A nine-month grant towards the salary costs of a Research Associate.

History (Dr Leigh Shaw-Taylor)

Transport, energy and urbanization c.1670-1911
A grant for six months of the salary costs of each of three research associates.

History and Philosophy of Science (Dr Lauren Kassell)

Marriage, Health and Compatibility in Early Modern England
A six-month grant in part-support of a Research Associate.

Schools of Physical Sciences and Technology

Chemical Engineering and Biotechnology (Dr Ljiljana Fruk)

Phototriggered chemistry for assembly of copper based artificial enzymes
Partial underwriting over one year towards the salary costs of a Research Associate.

Chemistry (Dr Andreas Bender) (as part of the Cambridge-Africa CAPREx programme)

In silico prediction of the mode of action of phenylpyranotriterpenoids and other bioactive compounds as potential drugs
A grant to provide a three-month subsistence allowance for a visiting researcher.

Chemistry (Dr Stuart Clarke and Dr Steve Jenkins)

The computational study of supramolecular self-assembled non-covalently bonded networks
A one-year grant towards the salary costs of a Research Associate.

Engineering (Dr Hugh Hunt)

Climate change lecture series
A small grant towards live streaming, video recording and editing.

Geography (Professor Robert Bennett)

Business Employers in 1871
A six-month grant in support of a Research Associate.

Geography (Dr Alice Reid)

An Atlas of Victorian Fertility Decline
A seven-month grant for the salary costs of a Research Associate.

Judge Business School (Dr David Chambers)

A long-run study of real estate risk and return
A one-year grant for the hire of 2,500 hours of research assistance.



Materials Science and Metallurgy (Professor Judith Driscoll)

Increasing T_c in cuprate superconductors

A two-year grant in part-support of a Research Associate.

Physics (Dr Jacqueline Cole)

Molecular orientation dynamics of dye-anchoring in dye-sensitized solar cells

A two-year grant towards the salary costs of a research associate.

Physics (Dr Andrew Morris)

Structural similarity and ionic-conduction algorithms for novel materials discovery

A grant towards 20 months of the salary costs of a research associate.

Schools of Biology and Clinical Medicine

Cambridge Institute for Medical Research (Dr Folma Buss)

The role of myosin motor proteins and their cargo adaptors in cytokine secretion and the development of chronic inflammation

A six-month grant in support of a Research Associate.

Genetics (Professor Alfonso Martinez Arias)

Generation of axial embryonic organoids from human ES cells

A six-month grant for tissue culture reagents and the salary costs of a Research Assistant.

Haematology (Dr Cristina Pina)

Transcriptional heterogeneity and gene regulatory networks in AML

A nine-month grant for the salary costs of a Research Associate.

Pharmacology (Dr Walid Khaled)

Understanding the role of BCL11A in lung squamous carcinomas

A two-year grant in part-support of a Research Associate.

Plant Sciences (Professor Beverley Glover)

Controlled buckling as a mechanism to regulate cuticle patterning in plants: a mutant screen to identify genes regulating buckling in *Hibiscus trionum*.

A one-year grant to underwrite part of the salary costs of a Research Associate

Psychology (Dr Victoria Leong)

Development of a new dual-EEG paradigm to investigate the neurobiological basis of interpersonal trust between infants and adults

An eight-month grant to bridge the salary costs of a Research Associate.

Public Health and Primary Care (Dr Robbie Duschinsky)

Testing a new, high-resolution measure of infant mental health in two longitudinal samples

A two-year grant towards the salary costs of a Research Associate.

Cambridge Stem Cell Institute (Dr Maria Alcolea)

Stem cell fate and plasticity in oesophageal wound healing

A two-year grant in part-support of a Research Associate.

Cambridge Stem Cell Institute (Dr Ragnhildur Thora Karadottir)

Resolving white matter dysfunction in Alzheimer's disease with patient specific cells

A one-year grant for the salary costs of a Research Associate.

Zoology (Professor Michael Akam)

Structure, dynamics, and evolution of the pair-rule gene regulatory network

Seed funding in the form of six months' salary costs for a Research Associate.

Zoology (Professor Paul Brakefield)

Examining the roles of phenotypic plasticity and developmental bias in shaping parallel adaptive radiations
Partial underwriting over six months in support of a Research Associate.

Zoology (Dr Berthold Hedwig)

Seismic communication in courting *Drosophila*
Partial underwriting over 10 months towards the salary costs of a Research Associate.

Zoology (Dr Torsten Krude)

Regulation of chromosomal DNA replication
A six-month grant in support of a Research Associate.

Zoology (Dr Matthias Landgraf)

Mapping odour learning and memory circuits in the fly brain under EM and XRM
A seven-month grant to bridge the salary costs of a Research Associate.

Zoology (Dr Isabel Palacios)

Mechanisms of cytoskeletal organisation and cytoplasmic motion: a biophysical approach
A five-month grant to bridge the salary costs of a Research Associate.

Interdisciplinary Research Centres (IRCs)

Cambridge Conservation Research Institute IRC (Dr Bhaskar Vira)

Biodiversity conservation and natural capital
A grant over 15 months for the salary costs of a research associate, to be recruited.

Cambridge Infectious Diseases IRC (Professor James Wood and Dr Lydia Drumright)

Understanding the biological basis of persistent nasal carriage of *Staphylococcus aureus*
A one-year grant in support of a Research Assistant.

Strategic Programmes and Projects

Centre for Research in the Arts, Social Sciences and Humanities (CRASSH) (Professor Simon Goldhill)
£1,000,000 over five years towards research programmes, to secure the future of CRASSH.

School of Arts & Humanities (Dr Caroline Vout, Professors John Robertson and Simon Goldhill)

£144,098 over three years for three one-year fellowships (six months to be spent in Rome and six months at CRASSH), to forge a research link with the British School at Rome.

School of Humanities and Social Sciences (Professors Martin Jones, Joel Robbins and James Laidlaw): £362,000 over five years towards the salary costs of four 4-year post-doctoral fellows, to release a major grant from the Max Planck Society as part of the establishment of a Centre for the Study of Ethics, Human Economy and Social Change in a joint venture with the Max Planck Institutes at Halle/Saale and Göttingen.

School of Physical Sciences: Kavli Institute for Cosmology (Professor Roberto Maiolino)

£185,000 over five years for three 3-year junior fellowships in Cosmology & Astrophysics, to release a major grant from the Kavli Foundation.

Cambridge Academy of Therapeutic Sciences (CATS) (Professor Chris Abell)

£200,000 over three years during the academy's start-up phase, to seize the opportunity presented by the growing cluster of pharma companies around the University.

Millennium Maths Project (Professor John Barrow)

£366,734 over two years towards the salary costs of eight MMP staff members, to secure the immediate future of the MMP.

**Centre for Global Equality** (Dr David Good)

£25,000 seed-funding to develop the Centre and Global Challenges Forum as a Strategic Research Initiative, focusing on Sustainable Development Goals.

Interdisciplinary Research Centres, Initiatives and Networks (Professor Chris Abell)

£200,000 over two years towards a pilot scheme to provide small grants to Interdisciplinary Research Centres, Strategic Research Initiatives and Strategic Research Networks.

Office of Postdoctoral Affairs (Dr Rob Wallach)

£161,919 over three years as a contribution towards the development of postdoctoral researchers.

What recent INT Research Grant holders have said:

'The BBSRC application that was pending when we submitted our INT application was successful. [The RA] has now moved onto a 3 year postdoctoral position as a researcher co-Investigator funded by that grant. He has also been awarded a Junior Research Fellowship.... Funding from the Trust made all the difference in keeping him employed in Cambridge during this critical transition.'

'The INT played a key role in providing matching funds to the initial grant, ensuring the success of the initiative.'

'The investment by the Isaac Newton Trust in the CAPREx Programme has led to the establishment of internationally-competitive research groups in our African Partner Universities and the demonstration of CAPREx as a successful and sustainable model for building research capacity.'

'I just wanted to let you know that the cell picking robot is now (more or less) fully functional and I wanted to again thank the INT for helping us get the funds together'

Joint Research Grant Programmes with the Schools

Grants made by the Trust in partnership with the Schools, together with major programme grants secured from external sources such as the Wellcome Trust, can add substantial value to the research funding available to researchers in the Schools. The Trust currently contributes £500,000 per annum through this route. Established in 2013, these programmes continue to form a major part of the Trust's research funding activities and account for approximately 20% of the total spend on research grants in 2016-17.

INT/Cambridge Humanities Research Grants

The administration of CHRG grants is undertaken by the Schools of the Arts & Humanities and Humanities & Social Sciences jointly. Two joint calls for applications are issued annually, for awards in three tiers:

- Tier 1:** Small Research Grants (up to £1,000)
- Tier 2:** CHRGS awards of £1,000 - £20,000 for projects, especially pilots for applications to larger external research funding;
- Tier 3:** Matching funding of up to £10,000 to support mutual exchange with institutions affiliated to Paris Sciences et Lettres.

Results of the 2016-17 application rounds

	Awards	Total	2015-2016 Awards	2015-2016 Total
Tier 1	19	£26,557	16	£22,121
Tier 2	25	£334,677	49	£579,781
Tier 3	5	£16,928	0	0
Total	49	£378,952	65	£601,902

The Trust contributes £100,000 per year to these awards, with a view to between £30,000 and £40,000 of this grant being allocated for small research grants annually.

Reports on the competition are received from the Schools each year, together with a detailed financial breakdown and individual reports from award holders.

The Trust renewed its commitment to these awards to 2019.

INT/Wellcome Trust ISSF/University of Cambridge Research Support for the Schools of Biological Sciences and Clinical Medicine

These research grants are administered by the School of Biological Sciences and the Clinical School. They are aimed at recently-appointed lecturers in the two Schools, or persons appointed to the equivalent posts (as approved by their Head of the School), within 3 years of the project start date. The objective is to provide small research grants to develop projects leading to full applications for external funding. Research grants of up to £80,000 for up to 2 years are available to fund postdoctoral support, equipment and ancillary consumables.

The programme is funded from 3 sources, each of which commits to providing £250,000 of the total value of the budget: the Isaac Newton Trust, the Wellcome Trust's Institutional Strategic Support Fund (ISSF); and the host departments of the successful applications. The involvement of the Isaac Newton Trust enables new appointees in biological subjects whose research lies outside the Wellcome Trust's remit to secure a contribution to start-up funding.



Selection is carried out by a panel of senior academics from the two Schools; the Wellcome Trust requires final reports on the supported projects and provides external scrutiny of the effectiveness of the programme by auditing the use of the ISSF fund for this purpose.

The Trustees are pleased to note that the Wellcome Trust has renewed the ISSF grant for a further three years and have agreed to reaffirm their support for the programme for a further two rounds to 2018-19. They will review the programme in July 2018, in time for the next round of applications to the Wellcome Trust.

Results of the 2016-17 application round

- 10 grants were approved by the Schools' Panel for funding (7 in 2015-16; 7 in 2014-15; 13 in 2013-14);
- Total value of new awards in 2016-17 was £729,315 (compared to total spends of £449,520 in 2015-16; £550,719 in 2014-15; £939,055 in 2013-14).

INT/University of Cambridge Early Career Support for the Schools of Physical Sciences and Technology

This joint research grant programme provides modest research grants to allow new lecturers in the Schools of the Physical Sciences and Technology to develop projects leading to full applications for external funding.

The competition is open to University Lecturers in all departments of the School of Physical Sciences and Technology appointed within 3 years of the project start date. Research grants of up to £50,000 are available, for PDRA support, equipment and ancillary consumables.

The Isaac Newton Trust provides 50% of the total budget; its contribution of £150,000 per annum, together with matching funds from the Schools involved, brings the annual fund to £300,000.

The programme was reviewed in July 2016, and Trustees confirmed their support for a further two calls (2016-17 and 2017-18)

Results of the 2016-17 application round

- 6 grants were approved by the Schools (7 in 2015-16; 6 in 2014-15; 6 in 2013-14);
- Total value of new awards in 2016-17 was £254,557 (£235,697 in 2015-16; £262,699 in 2014-15; £289,042 in 2013-14)

Early Career Fellowships

Leverhulme Early Career Fellowships

The Leverhulme Early Career Fellowship (ECF) programme continues to be remarkably successful in attracting and retaining talented new postdoctoral workers in the University. Awards are made across the full range of subjects, other than clinical studies, according to eligibility criteria set down by the Leverhulme Trust.

The Leverhulme Trust provides only 50% of the salary costs of its Fellows, up to a maximum of £24,000 pa. The institution in which the Fellow is based must find the other half of the salary, and the Trust has been doing this, on behalf of the University, for some years. Departments have been asked to rank their strongest applicants for consideration for matching funding by the Isaac Newton Trust in the event that the applicants are successful in the national competition.

For the 2017 competition, the number of pledges of INT matching funding has been capped at 50 across all subjects. The number of offers available to each pair of Schools was determined by the success of candidates in different subject areas at the national level of the competition in the previous three years:

Schools	Awards 2014	Awards 2015	Awards 2016	% over previous 3 years	2017 INT support offers
Arts, Humanities & Social Sciences	7	11	8	52	26
Biological & Medical Sciences	1	2	2	14	7
Physical Sciences & Technology	6	5	6	34	17
Totals	14	18	16	100	50

The task of deciding which applicants should be offered these pledges were devolved to panels of senior academics from the pairs of Schools concerned.

Results of the 2017 competition

This year's results in the national competition exceeded all expectation, with a record number of candidates supported by the Isaac Newton Trust being offered Leverhulme awards: the Leverhulme Trust's national selection panels made 125 awards nationally, of which 20 were for research at Cambridge.

- 62 applications were submitted to the Trust (79 for 2016; 68 for 2015)
- 50 of these were approved in principle for matching support by the Trust (compared to 63 for 2016; 54 for 2015)
- 20 of these were successful in the national competition (compared to 15 in 2016; 17 in 2015)

Each offer is worth up to £24k per annum for three years, so the total new commitment made in 2016-17 for LECFs starting in 2017-18 is £1,440,000.



The Leverhulme Early Career Fellows selected in 2017 and starting in 2017-18 are:

Schools	Leverhulme Early Career Fellows	Department/Faculty
Arts, Humanities & Social Sciences	Dr Hjoerdis Becker-Lindenthal	Divinity
	Dr Calbert Graham	Modern & Medieval Languages
	Dr Diarmuid Hester	English
	Dr Emma Loftus	Archaeology & Anthropology
	Dr Nathaniel Miller	Asian & Middle-Eastern Studies
	Dr Burcu Ozelik	Political and International Studies
	Dr Naomi Pullin	History
	Dr Romans Vaters	Asian & Middle-Eastern Studies
	Dr Jinqing Wu	Asian & Middle-Eastern Studies
Biological Sciences & Clinical Medicine	Dr Reuben Rideaux	Psychology
	Dr Marta Shahbazi Alonso	Physiology, Development & Neuroscience
Physical Sciences & Technology	Dr Franck Courbon	Computer Laboratory
	Dr Volker Deringer	Engineering
	Dr Kristaps Ermanis	Chemistry
	Dr Eszter Kovacs	Geography
	Dr Emma Liu	Earth Sciences
	Ms Olga Petri	Geography
	Dr Ubaid Ali Qadri	Engineering
	Dr Sergii Strelchuk	Applied Maths & Theoretical Physics
	Dr Dongda Zhang	Chemical Engineering & Biotechnology

Leverhulme commitments and refunds

A clear measure of the success of the Leverhulme Early Career Fellowship programme is the number of fellows who leave early, having been in a greatly enhanced position, as a result of the LECF, to secure future grants and permanent academic positions. This means that the actual expenditure on this programme by the Isaac Newton Trust is much lower than the initial commitment of funds:

Cohort starting in:	2016-17	2015-16	2014-16	2013-14	2012-13
Committed	£1,008,000	£1,111,783	£898,755	£552,000	£621,000
Refunded/not required*			£237,904	£177,702	£247,114
Actual Expenditure*			£660,851	£372,298	£373,886
Actual spend as % of initial commitment			73.5%	67.4%	60.2%

*to 31.07.17

These underspends have not always been received in good time, and have tended not to be included in the accounts for the relevant year, so the Statutory Accounts for 2016-17 contain a particularly large write-back element to bring our accounting up to date.

What our Leverhulme Early Career Fellows have said:

'Without the freedom provided by the fellowship and the support of the trusts, getting the ERC grant would never have been possible. In thirty or forty years, when I look back on my career, I am certain that this period when I had the fellowship will stand out as the key turning point that helped establish my own research agenda..'

'thank you for providing the funding that was needed for my career development at such a crucial time. In fact your support has been invaluable because not only have I been offered a Royal Society Fellowship but I have also been offered a permanent lectureship in the future by the University of Warwick. Your support was important to me as the funding helped to build my research career again after coming back from maternity leave.'

'I would like to use this opportunity to express my sincere gratitude for the support by the Newton Trust, which allowed me to pursue my research successfully and secure the next career development fellowship to take the next step in my career'

'if one aim of the Fellowship is to facilitate career development, then it has done so amply before time!'

ESRC Future Leaders Programme

This programme has now been replaced by ESRC New Investigator Grants. The Trust is not involved in providing matching funding for the new scheme, but continues to support Fellows appointed under the Future Leaders arrangements.

ESRC reduced the duration of awards from three to two years for 2016-17 starters and the percentage of the salary required from the institution also changed.

No new awards were made in 2016-17, but two new two-year fellowships approved in 2015-16 have now been taken up, bringing the total number of ESRC Future Leaders fellows in post in 2016-17 to eight:

Department	ESRC FL Fellow	Tenure
Sociology	Dr Ella McPherson	Oct 2013-Aug 17*
Sociology	Dr Rory Coulter	Nov 2014-Oct 17
Law	Dr Sarah Nouwen	June 2015-May18
Law	Dr Veronika Fikfak	Jan 2016-Dec 18
Education	Dr Marisol Basilio	Jan 2016-Dec 18
Psychology	Dr Idalmis Santiesteban	Apr 2016-Mar 19
Political & International Studies	Dr Sophie Roborgh	Oct 2016-Sep 18
Sociology	Dr Kate Williams	Jan 2017-Dec 18

*including maternity leave

Humboldt Foundation Feodor Lynen Early Career Fellowships

The Trustees have agreed to support postdoctoral researchers who have secured a Humboldt Foundation Feodor Lynen Early Career Fellowship to be held in Cambridge under the guidance of an existing Humboldt Fellow. As with the Leverhulme ECFs, these appointments are made by the other institution and the host University is expected to make a substantial contribution to the cost of the fellowship (in the case of Humboldt, one-third of the total.) The Isaac Newton Trust has agreed to make this contribution on behalf of the University for all successful Humboldt Early Career Fellows, and is also willing to consider applications from existing fellows seeking an extension to their Humboldt award.



Our Humboldt Feodor Lynen Early Career Fellows approved in 2016-17 were:

Dr Volker Deringer	Engineering	Oct 2016 – Sept 2017 (Humboldt extension granted)
Dr Christophe Große	Materials Science & Metallurgy	Nov 2016 - Oct 2018 (new award)
Dr Matias Acosta	Materials Science & Metallurgy	May 2017- Sept 2018 (transferred from USA)
Dr Simon Pickl	German & Dutch	Oct 2017 – Sept 2019 (new award)

INT/College Junior Research Fellowships

Isaac Newton Trust/College Junior Research Fellowships were established as a partnership with the less well-endowed colleges (the list is available at <http://www.newtontrust.cam.ac.uk/educsupport/jrf/eligiblecoll>) to enable them to appoint Junior Research Fellows in the Humanities.

Colleges submit applications to the Trust with a view to obtaining £15,000 per year, for three years, which approximates to about 50% of the funding needed for a JRF stipend. Where a College has a particularly young or limited alumni profile, the Trust will consider making a grant of up to £20,000 per year. Each College has only one active INT JRF at any one time. There is one round annually, in June/July.

The Trustees are pleased to note that these awards not only provide an opportunity for Colleges to mobilise some of their smaller trust funds on an occasional basis but also provide a valuable impetus to their fund-raising for future fellowships.

New awards in 2016-17:

- Three new applications, from St Catharine's, Selwyn and St Edmund's, were approved by the Trustees for advertisement in 2017-18, in support of fellowships to be taken up in October 2018

The new commitments will amount to £135,000 over three years from 2018-19.

Our Newton Trust/College JRFs in 2016-17 were:

College	JRFs	Faculty/Department	Start Date
Pembroke	Dr Chloe Nahum-Claudel ¹	Social Anthropology	Oct 2012
St Catharine's	Dr David Waddilove	Law	Oct 2014
Fitzwilliam	Dr Stuart Middleton ²	History	Apr 2015
Churchill	Dr Conor O'Brien	History	Oct 2015
Clare Hall	Dr Daniel Jolowicz	Classics	Oct 2015
Newnham	Dr Melanie Lamotte	History	Oct 2015
St Edmund's	Dr Charis Charalampous	English	Oct 2015
Downing	Dr Edward Cavanagh	History	Oct 2016

¹ End date Feb 2017; tenure includes maternity leave and period of external funding; a further JRF grant to Pembroke College approved in 2016 will be taken up in October 2017.

² Partially funded by AHRC in first year

College Teaching Partnerships

As in the past, the Trust's partnership with Colleges has largely focussed on the support of College Teaching Officers whose primary employment is to teach for their College and who may have limited opportunities to teach in their Faculty or to apply for research leave. CTO grants made to Colleges by the Trust have the added advantages of increasing the pool from which University teaching may be drawn, as well as providing career development opportunities for the CTOs themselves.

'Time-Limited' Teaching Fellowships, on the other hand, provide an opportunity for postdoctoral researchers employed by the University to gain experience of undergraduate teaching and integration into College fellowships.

Junior Research Fellowships (page 21) and shared MPhil Bursaries (page 24) represent the Trust's contribution to research posts and studentships in Colleges.

Newton Trust Teaching Fellowships (Formerly 'TLTF')

These have been rebadged this year as 'Newton Trust Teaching Fellowships', not only to highlight the Trust's contribution (which can easily be overlooked), but also to create a better image for the award on the holder's c.v.

Up to 30 posts are available at any one time for young postdoctoral researchers to be elected to teaching Fellowships at the less well-endowed Colleges (the list is at <http://www.newtontrust.cam.ac.uk/educsupport/jrf/eligiblecoll>).

Each appointment is normally limited to up to 4 years' duration, but may be extended if the Fellow's post-doctoral employment by the University is extended. Newton Trust Teaching Fellows are contracted by the College promoting their appointment to provide 4 hours of supervision per week. The Trust pays the College up to £5,000 per annum toward the costs, *pro rata* according to the hours taught.

Three new appointments were approved in 2016-17 to start in October 2017:

College	Fellow	Department/Faculty/Institute
Fitzwilliam	Mr Marco Geraci	INET, Faculty of Economics
Fitzwilliam	Dr Carla Mulas	Stem Cell Institute
Lucy Cavendish	Dr Amber Ruigrok	Psychiatry (for one year in first instance)

Newton Trust Teaching Fellows in post during 2016-17 were:

College	Fellow	Department	Start Date	End Date	Max Tenure
Robinson	Dr Paul Griffiths	Chemistry	Oct 12	Sep 16	Sep 17
Robinson	Dr Gary Doherty	Oncology	Oct 13	Sep 17	Sep 18
Robinson	Dr Alex Chin	Physics	Oct 13	Sep 16	Sep 18
Girton	Dr Helen Yannakoudakis	Computer Laboratory	Oct 14	Sep 18	Sep 22
Queens'	Dr José Maria Escartin Esteban	Physics	Oct 15	Sep 19	Sep 23
Fitzwilliam	Dr Fiona Danks*	Geography/Scott Polar	Oct 16*	Sep 21	Sep 25
Fitzwilliam	Dr Deepak Venkateshvaran	Physics	Oct 16	Sep 20	Sep 24

* Delayed start (12 months) approved



College Teaching Officers (CTO Posts)

This programme was closed in 2011 and no new appointments have been made since then. However, faculties may request the re-appointment of existing post-holders to a maximum tenure of 8 years.

The Trust's expenditure could potentially continue to September 2019, if eligible posts are renewed.

The cost of the CTO scheme for the academic year 2016-17 was £26,840 (£44,444 in 2015-16; £36,649 in 2014-15, £58,786 in 2013-14).

Four posts remained current in the academical year 2016-17:

College	CTO	Faculty	Start	End	Max Tenure
Churchill	Dr Paul Russell	Mathematics	01.10.08	30.09.17	30.09.17
Homerton	Dr Simon Wadsley	Mathematics	01.10.08	30.09.18	30.09.18
Homerton	Dr Olivier Tonneau	Modern & Medieval Languages	01.10.09	30.09.14	30.09.17
Queens'	Dr Andrew Thompson	History	01.10.11	30.09.16*	30.09.19

*Taking research leave in 2016-17 (see below)

College Teaching Officer Research Leave (CTORL)

The Trust launched this programme in 2013-14 to encourage high-quality research among College Teaching Officers (CTOs) who may not enjoy the same sabbatical entitlement and support as University Teaching Officers.

The Trust provides grants to Colleges to make full-time short-term junior teaching appointments of 9 to 12 months' duration, to release an established CTO to take an extended period of leave for a significant research project. The Trustees have agreed to make up to five awards of up to £30,000 each year.

The programme is open to CTOs from all Colleges, and has the approval of the inter-College committees. There is one application round per year, in January or February.

In the nature of CTO appointments, most of the applicants are in the arts and humanities, and the Trustees are particularly grateful to Professors Chris Young and Nicolette Zeeman for assisting them in the review process and selection of CTO Research Leave awards.

A fourth cohort of appointments was made in 2016-17 at a cost of £105,000 (£75,000 in 2015-16), to be held in 2017-18 as follows:

College	Faculty	College Teaching Officer	Duration of award
Pembroke	English	Dr Katrin Ettenhuber	9 months
Trinity Hall	Divinity	Dr Stephen Plant	9 months
Queens'	History	Dr Andrew Thompson	12 months
Peterhouse	English	Dr Jennifer Wallace	9 months

The programme was initially set up as a pilot scheme for three years, and was therefore reviewed in 2016-17. Trustees agreed that, while finding suitable teaching cover had proved to be difficult for some colleges, this programme produces excellent outcomes for the CTOs themselves, as well as providing teaching opportunities for the replacement appointees. The final reports submitted by returning CTOs are testament to the effectiveness of providing a concentrated period of research leave at this stage in their careers.

It has therefore been agreed that the programme should continue for a further period of three years.

What our recent CTORL award holders have said:

"I would like to thank the Isaac Newton Trust most sincerely for my sabbatical leave, which has given me the priceless gift of time to research and write. It has been the best working year of my life..."

"Thanks to the nine months of research leave made possible by the Trust, this past year has been vitally important and beneficial for my research and career development."

Student Awards

The Trust has maintained a long-term commitment to providing competitive research scholarships to the best of the UK and EU students, many of whom have been unable to secure funding from public sources such as the Research Councils. The Trust does not itself award these scholarships, but directs funding through existing University competitions. The Trust does not provide salary or research costs for students other than through these established major funding programmes.

The Trustees seek to achieve the most appropriate level and type of support by reviewing their contribution at regular intervals against a background of frequent changes in the Research Councils' policy.

PhD Studentship programmes

In 2012 the Trustees agreed to support six 3-year PhD studentships per year for the duration of the AHRC DTP award 2014-19. This was therefore the third year of contribution to these studentships and the first for which a full set of three cohorts were funded at the same time. The cost to the Trust in 2016-17 was £188,020 (£127,181 in 2015-16; £51,515 in 2014-15).

Newton Trust/College MPhil bursaries

The Trust offers bursaries for UK students taking one-year MPhil courses as preparation for a doctoral degree. These awards are held in certain Colleges that had agreed to match the Trust's contribution of £6,000 per student; Colleges of lesser wealth offering two such studentships are eligible for a further bursary entirely funded by the Trust (ie £12,000).

The competition is run by the Student Registry and the selections are made by academic panels representing different subject areas.

The number of Colleges participating, the number of bursaries awarded, and the cost to the Trust have all risen year on year:

For awards to be held in:	2017-18	2016-17	2015-16	2014-15
Colleges participating	28	26	25	19
Number of Bursaries awarded	73	66	57	38
Cost to the Trust	£498,000	£444,000	£402,000	£204,000



First destinations of MPhil bursary holders

A primary aim of the Trustees in setting up this programme was to enable students to take an MPhil course in Cambridge as an essential part of their preparation for a PhD. In reality, it is very difficult to identify MPhil candidates, or even MPhil courses, guaranteed to result in a PhD place. However, Trustees are satisfied that the 'conversion ratio' is sufficient to meet their aspirations for the programme, particularly as these figure must be an underestimate of the students' continuation, since we have no figures for those moving on to other universities.

	2016-17 cohort	2015-16 cohort
Graduating INT/College bursary holders	65	57
Continuing to PhD in Cambridge	11	14 (of whom 2 deferred for a year)
% continuing in Cambridge	17%	25%

The INT/College MPhil Bursary programme has also achieved considerable success in engaging Colleges more formally with the support of MPhil students and has provided a valuable foil to the support grants for EU and overseas students offered by the Cambridge Trust.

The Bursaries are funded from the remainder of the Trust's Bursaries Restricted Fund and the Trust's contribution will continue for so long as there are funds remaining. The Trustees have now given notice to the University that their fund will be extinguished in 2-3 more years, and the last complete cohort that can be supported by the Trust will be 2018-19.

Careers Service Internships

The main aim of this programme is to ensure that students can undertake relevant work experience across all careers sectors, regardless of their financial background. Most employers offer their interns a salary, but there are employment sectors where paid work experience opportunities are scarce, for example: international development, charities, media, publishing and the arts. Students in receipt of the University's Cambridge Bursary are prioritised.

In total, 200 students applied for an internship bursary for 2016. Of the 76 successful applicants, 27 were recipients of a bursary.

The funding for this programme was shared between the Newton Trust (£10k), a group of 120 major employers, known as the 'Careers Service Supporters Club' (£10k) and the Careers Service's trading income.

FINANCIAL SUMMARIES

Audited accounts: headline figures and forward planning

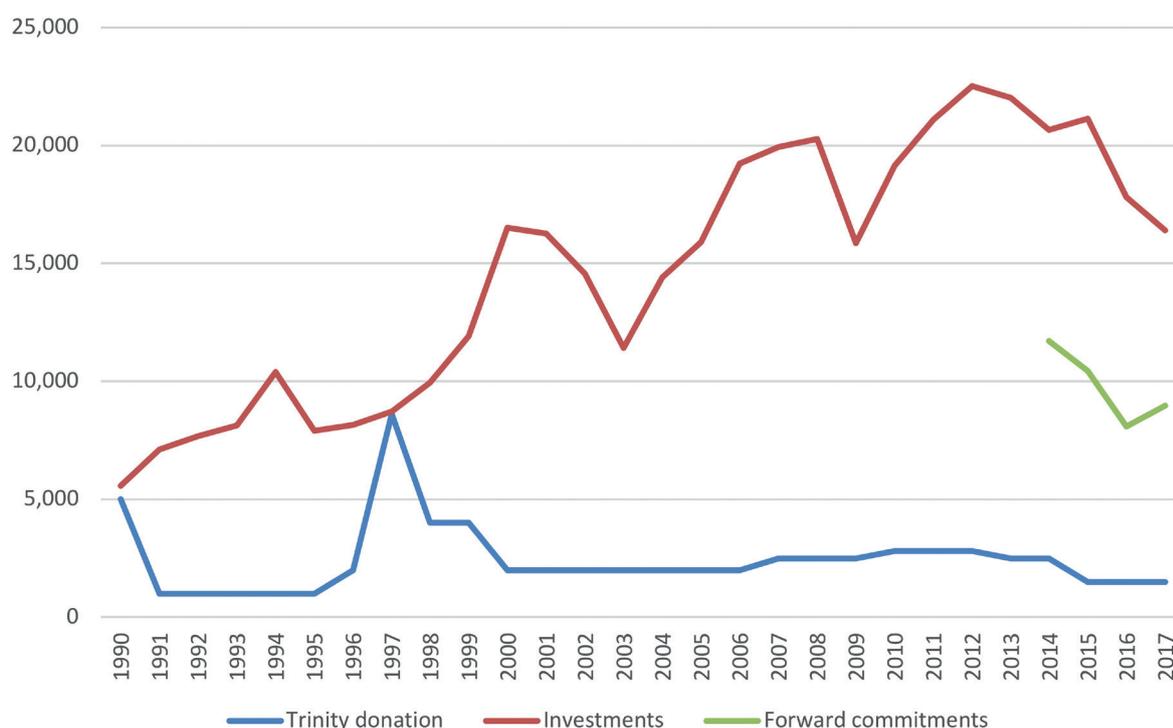
	2016-17	2015-16	2014-15
Opening balance	£10,317,258	£11,606,463	£11,214,894
Income	£2,036,687	£2,159,553	£6,853,103
Expenditure	£5,734,898	£3,275,840	£7,743,667
Gain (Loss) on investments	£2,077,442	(£172,918)	£5,449
Closing balance	£8,696,489	£10,317,258	£11,606,463

The audited accounts for the year ended 30 June 2017 are presented in detail on our website at: <https://www.newtontrust.cam.ac.uk/about/Accounts>

The increase in expenditure this year is in line with the Trustees' strategic mobilisation of a portion of the reserves in support of more substantial, long-term projects (see page 9). There was an excess of expenditure over income of £3.7m (£1.1m in 2015-16), which was partly mitigated by an exceptional gain on investments of £2.1m.

Fig. 6 shows the relationship between the Trust's total reserves and income from Trinity College since the foundation of the Trust. The reserves required to cover forward commitment are also shown from the inception of forward commitment accounting. The red and green lines would be expected to converge in two to three years, all other things being equal, leaving no uncommitted funds other than income. The Trustees will continue to keep their strategy of drawing down the reserves under review.

Figure 6: INT investments, forward commitments & Trinity donations 1989-2017

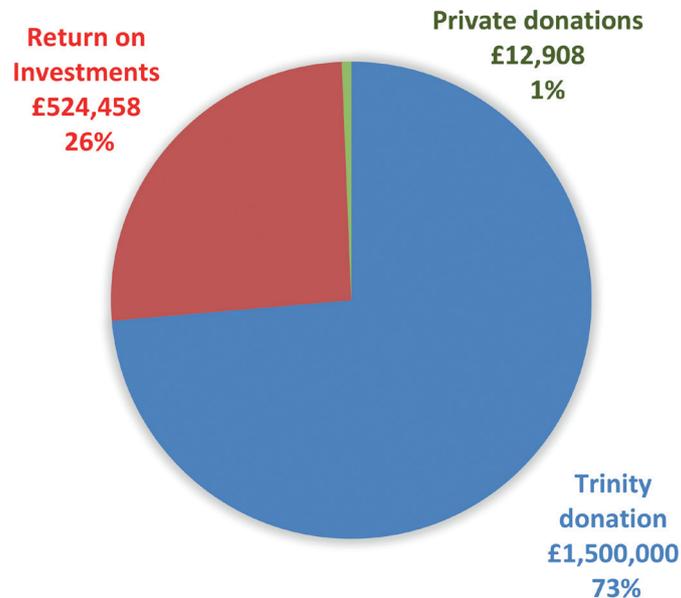




Income & Expenditure 2016-17

Total income in 2016-17 was £2,036,687 (2,159,553 in 2015-16).

Figure 7: Income 2016-17



The donation to the Trust from Trinity was £1,500,000, the same as last year; the College Council has agreed that this level of support will continue in 2017-18.

Our investments provided a further £524,458 (£640k in 2015-16) of income as follows: £405,399 from CUEF; £77,777 from Barings General Fund; £41,282 Barings Restricted Bursaries Fund.

Private donations to the Trust, channelled mostly through Trinity College, amounted to approximately £13k including Gift Aid (£19k in 2015-16).

The diminishing category of private donations may be offset in future by an additional source of occasional income in the form of shares in valuable intellectual property arising from grants made by the Trust. It has been standard practice for many years for the Trust to include an agreement concerning IP in the Terms and Conditions attached to each grant, but so far as we are aware there has been no income from this source to date. Any such income will be ploughed back into our research funding activities.

Expenditure: New commitments made in 2016-17

New commitments to research grants in all categories amounted to £6.1m (£2.5m in 2015-16) during 2016-17, and a further £1m was committed to continuing the MPhil Bursaries (for 2017-18 and 2018-19 cohorts).

Forward commitments and write-backs

At the end of the year, the Trust had total forward commitments of £8.9m, allowing for any write-backs notified by the end of August 2017. Our write-backs this year have been significantly greater than in previous years because we have identified a number of grants, particularly Early Career Fellowships, to which commitments were recorded, but which were never taken up or finished early, and for which write-backs have not been systematically applied in previous years.

Management of assets and uncommitted funds

There was a gain on the valuation of the investment assets of c.£2m (compared to an unrealised loss of c.£0.2m last year). The net result is a further decrease of £1.6m in uncommitted funds carried forward, to c. £8.7m (compared to £10.3m in 2015-16).

The Investments Sub-Committee met in March 2017 to review the current performance of the investments and advise the Trustees on future strategy. It was agreed that it would be advantageous to move all long-term investments into the Cambridge University Endowment Fund (CUEF) and leave only those assets that required short-term liquidity with Barings. The Sub-Committee comprises the Chairman, Treasurer, Director and an external member; Mr Christopher Pratt stepped down as external member in February 2017 and his place was taken by Mrs Jennifer Brook, a former Bursar of Churchill College.

During the year, £3.5m was disinvested from Barings to cover the gap between expenditure and income and, on the advice of the Trust's Investment's Sub-Committee, a further £3m was transferred from Barings to the CUEF in March 2017.

At the end of the year, Barings managed £1.6m of the assets (£7.6m in 2015-16, £11.1m in 2014-15) invested in its Targeted Return Fund, and CUEF managed £14.8m (£10.2m in 2015-16, £10.0m in 2014-15).

Readily accessible uncommitted funds in the Trust's current account with Barclays are kept to the minimum required to cover immediate outgoings. The Trust's turnover does not exceed £6.5m per annum, so our account will be part of Barclays new ring-fenced bank, planned to take effect in April 2018, subject to approval, rather than remain part of Barclays Bank plc.

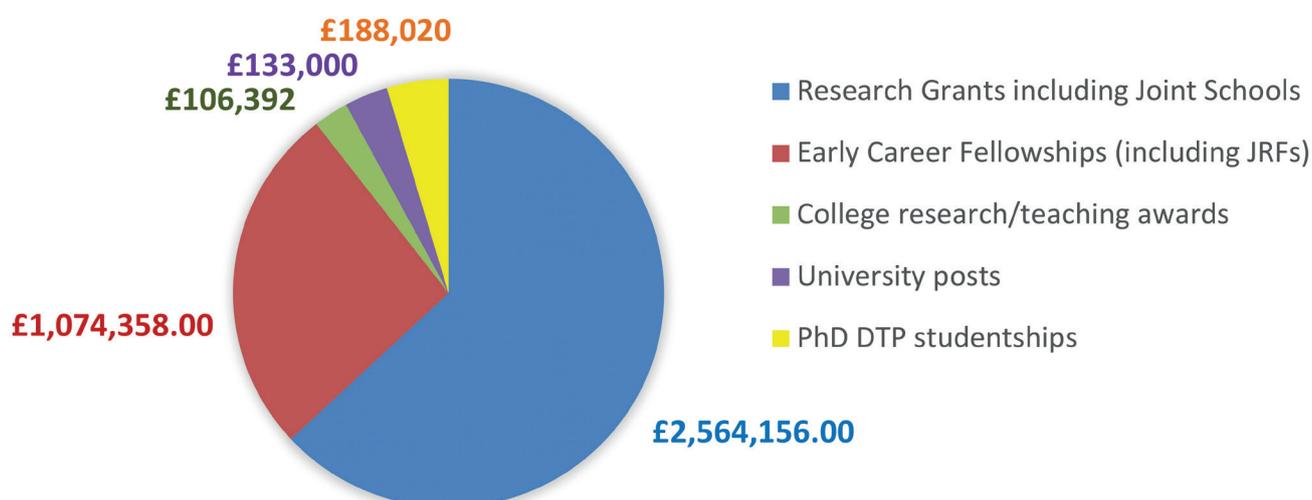
Payments – unrestricted funds

The Statutory Accounts deal principally with new commitments; from the point of view of cash management, however, it is also useful to view the actual payments made during the financial year and their distribution across the Trust's various funding activities.

The Trust paid grants to a total of £4.1m for research and teaching activities in 2016-17 (£4.2m in 2015-16).

The Trust's own Research Grants together with three research grant programmes co-funded by the Schools of the University, accounted for approximately 63% (compared to 50% in 2015-16) of the research payments. Matched funding for Early Career Fellowships accounted for a further 26% (20% in 2015-16) (Fig. 8a).

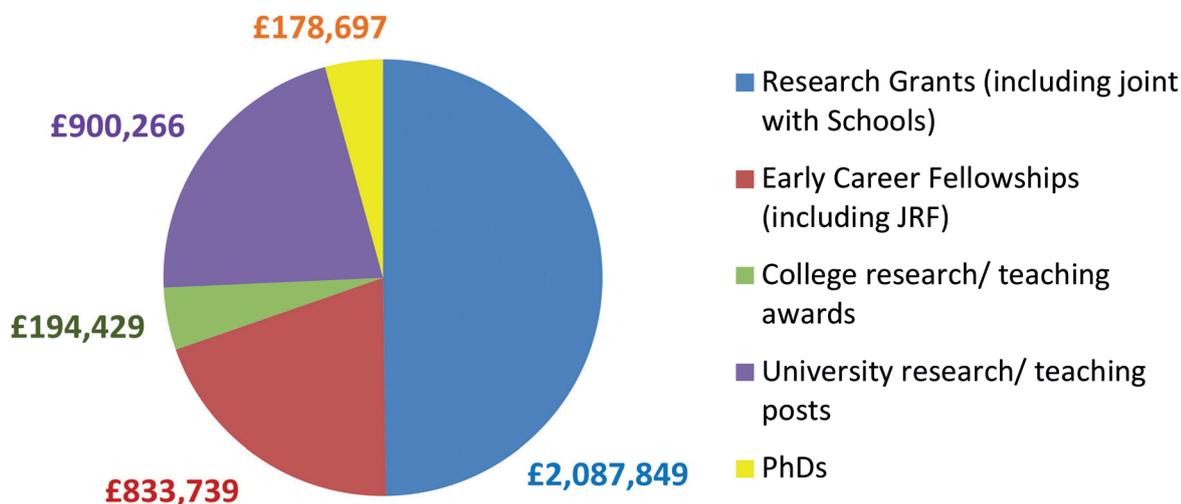
Figure 8a: Research Payments 2016-17: unrestricted funds





The changes in proportion of spending in the various categories (compare Figs 8a and 8b) reflect the Trust's increasing commitment to strategic research grants (blue segments) and a new policy not to support appointments that would seem to fall within the University's core business (purple segments):

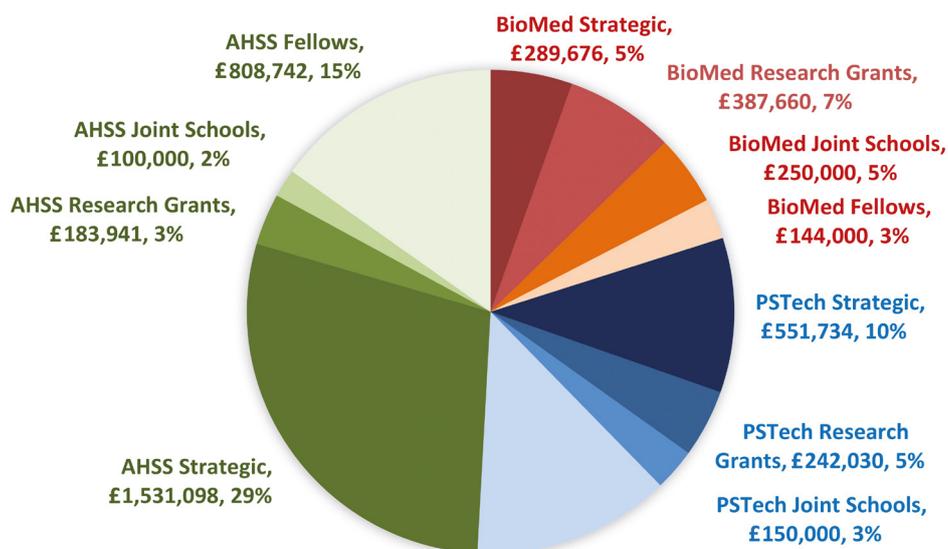
Figure 8b: Research Payments 2015-16: unrestricted funds, for comparison



Research spending by subject area.

Awards to departments, faculties and individual researchers in the Schools of the Arts & Humanities and Humanities & Social Sciences (AHSS, green shades) accounted for almost half (49%) of the Trust's spending on research in 2016-17 (Figure 9). Awards in the Schools of Physical Sciences and Technology (PSTech, blue shades) amounted to 31% of the total and in the Schools of Biological Sciences and Clinical Medicine (BioMed, red shades) amounted to 20%. If research student grants are added, the share of research funds for the Arts, Humanities and Social Sciences rises to 55%.

Figure 9: Research expenditure 2016-17: by category, by subject area



These data include new awards made in 2016-17 in all categories with the exception of the Joint Schools awards, for which the year's actual expenditure has been used. Fellows = Leverhulme and Humboldt Early Career Fellowships plus College Junior Research Fellowships.

Payments - restricted funds

The Trust's financial contribution to the **Cambridge Bursaries** scheme ended with the 2015-16 financial year. The only payments to students in 2016-17 were minor adjustments (£5,304). (The cost of undergraduate bursaries (CBS) in previous years had been £0.76m in 2015-16; £0.74m in 2014-15; £0.8m in 2013-14).

Isaac Newton Trust / College MPhil bursaries accounted for approximately £444k in 2016-17 (£402k in 2015-16). We expect the cost of this programme in 2017-18 to be similar, and at this rate of expenditure, the fund will be exhausted in two more years.

Careers Internship bursaries continued for a further year at a cost of **£10k**.

Payments - administrative costs

	2016-17	2015-16	2014-15	2013-14
Staff salaries, pensions, NI	£80,960	£148,550	£122,591	£153,694
Rent, services and miscellaneous	£14,538	£30,041	£19,302	£17,728
Governance (audit, accounting)	£12,120	£11,880	£6,000	£2,304
Total support costs	£107,618	£190,471	£147,921	£173,726

The lower staff costs reflect a change in the structure of the Trust's office from 2.1 FTE to 1.7FTE and a seven-month hiatus in appointing a new Senior Administrator, as well as a number of exceptional costs in 2015-16.



The Trust's new Senior Administrator, Dr Nichola Tooke, meets Isaac Newton. The cartoon of Newton is part of a mural created by Sir Quentin Blake at Addenbrooke's hospital to celebrate the University of Cambridge's 800th anniversary. Photo by Simon Nicol.



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