

MPS Research Update

May, June, July 2018

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Staff mentions in the press, Public Engagement

Kate Shaw was interviewed in the *The Observer* on 20 May 2018 about her work on quarks and the training of a new generation of physicists through *Physics without Frontiers*. <https://bit.ly/2rPiB6L>

Mark Hindmarsh gave an introductory talk to a showing of *Interstellar* at Sci-screen, Lewes, 31 July

Max Jensen organised, with help of Darren Baskill and Mick Taylor, three events with the Sussex Mathshub, the body for continued professional development of mathematics teachers in East and West Sussex. All three events presented recent research from the Department of Mathematics. 28 June 2018, Mathshub STEM for girls; 06 July 2018, Mathshub STEM for girls; 13 July 2018, Statistics CPD day.

Antonella De Santo, with Mark Sutton, collaborated with internationally-renowned artist duo *Semiconductor* for the centrepiece art work HALO at Art Basel (<http://semiconductorfilms.com/art/halo/>), June 2018.

Barry Garraway many years ago proposed an experiment to explore how Bose Einstein Concentrates would behave in the absence of gravity – this experiment is now on the International Space Station. (Philip Harris) <http://www.sussex.ac.uk/news/research?id=45233>

A popular article about Planck appeared in Nature, quoting Sussex Postdoc researcher, Julien Carron (Antony Lewis) <https://www.nature.com/articles/d41586-018-05788-5>

Awards and Recognitions

The Planck team won the Gruber Cosmology prize (Antony Lewis and Julien Carron): <https://gruber.yale.edu/prize/2018-gruber-cosmology-prize>

The John Ockenden prize 2018 (European Journal of Applied Mathematics) was awarded to Vanessa Styles for co-authored paper. <http://blog.journals.cambridge.org/2018/06/08/john-ockendon-prize-2018-winner-announced/>

Alessia Pasquazi has won an EPSRC UKRI Innovation Fellowship. “This is a tremendous achievement, and follows a lot of hard work, thanks to Colin, Gisela and all others who supported her” (Philip Harris).

Anotida Madzvamuse will be on the Royal Society’s FLAIR panel (assessment of grant applications to the Future Leaders. African Independent Researchers), from July 2018

Areas of Knowledge Exchange

Soapbox Science Brighton, Sat 02 June 11.00 – 14.00 Brighton seafront.

<http://www.sussex.ac.uk/staff/newsandevents/?page=6&id=44770?ref=email>

Science without Frontiers, (Kate Shaw, Wakil Sarfaraz)

<http://www.sussex.ac.uk/staff/newsandevents/?id=45050?ref=email>

Sussex Impact day was held Tuesday 19 June 2018.

<https://www.sutori.com/story/sussex-impact-day-2018>

Search for inhabitable planets comes to Royal Society Summer Science exhibition (Stephen Wilkins).

<http://www.sussex.ac.uk/staff/newsandevents/?id=45276>

Sussex quantum physicist gives evidence to MPs on future of technology (Winni Hensinger)

<http://www.sussex.ac.uk/staff/newsandevents/?id=45420?ref=email>

University national award for recruitment and public engagement work (Winni Hensinger)

<http://www.sussex.ac.uk/staff/newsandevents/?id=45425?ref=email>

Talks delivered (outside own research groups)

"Pushing the Boundaries of the Energy and Intensity Frontiers -- the HL-LHC and Beyond"

Opening talk delivered by Antonella De Santo, 2-4 July 2018, at IPPP, Durham (<https://conference.ippp.dur.ac.uk/event/718/overview>).

Antony Lewis gave two talks:

17 July 2018, Planck 2018 cosmology and parameters - Sesto workshop, Italy.

18 July 2018, Planck Lensing 2018 - The Nonlinear Universe, Smartno, Slovenia.

Mark Hindmarsh delivered Invited talks and related events:

Invited talks:

"Observing the early Universe with gravitational waves", University of Helsinki gravitational wave symposium in honour of Rainer Weiss, 31 May 2018.

"Gravitational waves from phase transitions in the early Universe", PACTS conference, Tallinn, 21 June 2018.

"Gravitational waves from phase transitions in the early Universe", SUSY 2018 conference, Barcelona, 27 July 2018 [cancelled due to family illness]

"Gravitational waves from phase transitions in the early Universe", University of Bielefeld Kosmologietag, 03 May 2018.

Colloquium:

"Higgs Fizz from the Big Bang", University of Helsinki Department of Physics, 18 May 2018.

Lectures:

"Gravitational waves", Helsinki-Jyväskylä undergraduate cosmology summer school, 30 May 2018.

"Fairness: what weapons do we have?"

A talk at King's College (London) Conference on Fairness in Sport, by John Haigh, on Tuesday 5 June 2018.

"Dynamic Programming for Finite Ensembles of Nanomagnetic Particles"

A presentation by Max Jensen at *Geometry, Analysis, and Approximation of Variational Problems*, University of Freiburg, 14 – 16 May 2018.

<http://home.mathematik.uni-freiburg.de/gaav/>

"Convergent semi-Lagrangian methods for the Monge-Ampère equation"

A talk delivered by Max Jensen at *BAIL 2018 International Conference on Boundary and interior Layers*, 18 – 22 June 2018, Glasgow, UK.

<https://bail.org.uk/>

Max Jensen gave a seminar at Nottingham University on 6 June 2018, *Convergent semi-Lagrangian methods for the Monge-Ampère equation on unstructured grids*.

Antonella De Santo chaired the plenary session on *Beyond the Standard Model Physics* at the LHCP 2018 Sixth Annual Conference, in Bologna, 4-9 June 2018 (<http://lhcp2018.bo.infn.it/>).

Iacopo Vivarelli chaired the *Beyond the Standard Model* session for the Sixth Annual Conference on Large Hadron Collider Physics (LHCP 2018), Bologna 4-9 June 2018.

Luiz Vale Silva gave two presentations:

A review on B-meson rare decay anomalies, *Status and expected progress of global fits*, 17 April 2018, University of Warwick

A talk on the contributions of scalar lepto-quarks (LQs) to rare kaon semi-leptonic decays into neutrinos, *Footprints of LQs: from B to K rare decays*. 18 April 2018, Lyon, France.

Impact

Colin Hayhurst reports two spin-out companies have just been launched:

Advanced Material Development (Alan Dalton), which has now secured funding of around £750,000.

<https://www.advmat.co.uk/latest-news/nanomaterials-specialist-secures-750000-of-funding/>

DataJavelin (Seb Oliver), a consulting business which has already a number of new clients.

<https://www.datajavelin.com/>

Significant Research outcomes – results

Jeff Hartnell

“With NOvA we made the first ever measurement of electron antineutrino appearance”.

Robert Smith

“I completed a piece of work with a collaborator that provides an upgrade of the well-known halofit code for predicting the statistical properties of the dark matter and baryon distribution in our Universe. The original version of this work has acquired more than 1300 citations”. *Precision modelling of the matter power spectrum in a Planck-like Universe.* <https://arxiv.org/abs/1807.00040>

The ATLAS collaboration has released a new search for stops decaying to charm quarks. Two members of the Sussex ATLAS group, Dr Kerim Suruliz and Sam Jones contributed to the analysis. Details: <http://atlas.cern/updates/physics-briefing/charming-susy-running-out-places-hide>

Philip Harris

“For 19 years, Sussex has held the world record in sensitivity with its measurement of the electric dipole moment of the neutron, carried out at the Institut Laue-Langevin in Grenoble. Now the Museum of Grenoble wishes to mount an exhibit about the origins of the Universe, and some of the hardware from our experiment is to be included.”

Other news

Antonella De Santo reports that ATLAS begins recording data for the final year of Run 2, in May 2018

<http://www.sussex.ac.uk/staff/newsandevents/?id=44709?ref=email>

Antonella De Santo organised a physics workshop, *Pushing the Boundaries of the Energy and Intensity Frontiers -- the HL-LHC and Beyond*, 2-4 July 2018, at IPPP, Durham (<https://conference.ippp.dur.ac.uk/event/718/overview>). The workshop was funded from Antonella's 2017 IPPP Associateship (£3k).

Mark Hindmarsh reports that Sussex has been accepted as a member of the LISA Consortium (Laser Interferometer Space Antenna). Team members include Mark Hindmarsh, Stephan Huber and Antony Lewis.

Max Jensen was external examiner for a DPhil at Oxford University, 11 June 2018.

Department of Mathematics. Publications deposited in SRO in May, June & July 2018.

To view the paper enter the SRO ID as <http://sro.sussex.ac.uk/nnnnn>

First Sussex Author	SRO ID	Status	Author(s)	Output Title	Volume Title
Ashton, Stephen	75862	Accepted	Ashton, Stephen; Scalas, Enrico; Georgiou, Nicos; Kiss, István Zoltán	The mathematics of human contact: developing a model for social interaction in school children	Acta Physica Polonica A
Birmpa, Panagiota	76622	Published	Birmpa, Panagiota	Quantification of mesoscopic and macroscopic fluctuations in interacting particle systems	
Fatehi Chenar, Farzad	75970	Published	Fatehi Chenar, Farzad; Kyrychko, Yuliya; Blyuss, Konstantin	Effects of Viral and cytokine delays on dynamics of autoimmunity	Mathematics
Kyrychko, Yuliya	76386	Published	Kyrychko, Y N; Schwartz, I B	Enhancing noise-induced switching times in systems with distributed delays	Chaos
Madzvamuse, Anotida	75852	Published	Frittelli, Massimo; Madzvamuse, Anotida; Sgura, Ivonne; Venkataraman, Chandrasekhar	Numerical preservation of velocity induced invariant regions for reaction-diffusion systems on evolving surfaces	Journal of Scientific Computing
Madzvamuse, Anotida	75868	Accepted	Madzvamuse, Anotida; Barreira, Raquel	Domain-growth-induced patterning for reaction-diffusion systems with linear cross-diffusion	Discrete and Continuous Dynamical Systems - Series B
Merino Aceituno, Sara	76285	Accepted	Briant, Marc; Merino Aceituno, Sara; Mouhot, Clement	From Boltzmann to incompressible Navier-Stokes in Sobolev spaces with polynomial weight.	Analysis and Applications
Murphy, Laura R	75568	Accepted	Murphy, Laura; Venkataraman, Chandrasekhar; Madzvamuse, Anotida	Parameter identification through mode isolation for reaction-diffusion systems on arbitrary geometries	International Journal of Biomathematics
Sarfaraz, Wakil	76010	Accepted	Sarfaraz, Wakil; Madzvamuse, Anotida	Domain-dependent Stability Analysis of a Reaction-Diffusion Model on Compact Circular Geometries	International Journal of Bifurcation and Chaos
Scalas, Enrico	75861	Accepted	Eom, Cheoljun; Kaizoji, Taisei; Park, Jong Won; Scalas, Enrico	Realized FX volatility: statistical properties and applications	Future Research Korean Journal of Futures and Options
Sherborne, Neil J	75022	Published	Sherborne, Neil; Blyuss, Konstantin; Kiss, Istvan	Bursting endemic bubbles in an adaptive network	Physical Review E (PRE)
Simm, Nicholas J	75903	Published	Mezzadri, F; Simm, N	Moments of the transmission eigenvalues, proper delay times and random matrix theory II	Journal of Mathematical Physics

Simm, Nicholas J	75904	Published	Mezzadri, F; Simm, N J	Tau-function theory of chaotic quantum transport with $\beta = 1$, Communications in Mathematical Physics 2, 4	
Simm, Nicholas J	75905	Published	Fyodorov, Y V; Khoruzhenko, B A; Simm, N J	Fractional Brownian motion with Hurst index $H=0$ and the Gaussian Unitary Ensemble	Annals of Probability
Simm, Nicholas J	75906	Published	Deelan Cunden, Fabio; Mezzadri, Francesco; Simm, Nick; Vivo, Pierpaolo	Large-N expansion for the time-delay matrix of ballistic chaotic cavities	Journal of Mathematical Physics
Simm, Nicholas J	75908	Published	Deano, Alfredo; Simm, Nicholas	On the probability of positive-definiteness in the gGUE via semi-classical Laguerre polynomials	Journal of Approximation Theory
Simm, Nicholas J	75920	Published	Simm, Nick	On the real spectrum of a product of Gaussian matrices	Electronic Communications in Probability
Simm, Nicholas J	76460	Published	Simm, N J	Central limit theorems for the real eigenvalues of large Gaussian random matrices	Random Matrices: Theory and Applications
Simm, Nicholas J	76461	Published	Fyodorov, Y V; Simm, N J	On the distribution of maximum value of the characteristic polynomial of GUE random matrices	Nonlinearity
Simm, Nicholas J	76462	Published	Cunden, Fabio Deelan; Mezzadri, Francesco; Simm, Nick; Vivo, Pierpaolo	Correlators for the Wigner–Smith time-delay matrix of chaotic cavities	Journal of Physics A: Mathematical and Theoretical
Simm, Nicholas J	76464	Published	Mehta, Dhagash; Hauenstein, Jonathan D; Niemerg, Matthew; Simm, Nicholas J; Stariolo, Daniel A	Energy landscape of the finite-size mean-field 2-spin spherical model and topology trivialization	Physical Review E (PRE)
Taheri, Ali	75591	Accepted	Day, Stuart; Taheri, Ali	Semigroup asymptotics, Funk-Hecke identity and the Gegenbauer coefficients associated with the spherical Laplacian	Rocky Mountain Journal of Mathematics
Taheri, Ali	75608	Published	Morrison, George; Taheri, Ali	An infinite scale of incompressible twisting solutions to the nonlinear elliptic system $L[u; A, B] = \mathcal{P}$ and the discriminant $\mathcal{D}(h, g)$	Nonlinear Analysis Theory Methods & Applications
Taheri, Ali	75682	Published	Morris, Charles; Taheri, Ali	Whirl mappings on generalised annuli and the incompressible symmetric equilibria of the dirichlet energy	Journal of Elasticity
Venkataraman, Chandrasekhar	76459	Published	Venkataraman, C; Hutridurga, H	Heterogeneity and strong competition in ecology	European Journal of Applied Mathematics

Department of Physics & Astronomy. Publications deposited in SRO in May, June & July 2018

To view the paper enter the SRO ID as <http://sro.sussex.ac.uk/nnnnn>

First Sussex Author	SRO ID	Author(s)	Output Title	Volume Title
Allbrooke, Benedict MM	75990	Cerri, Alessandro; DeSanto, Antonella; Allbrooke, Benedict; Asquith, Lily; Shaw, Kate; Suruliz, Kerim; Sutton, Mark; Safarzadeh Samani, Batool; Salvatore, Fabrizio; Vivarelli, Iacopo; and 0 other(s)	Search for electroweak production of supersymmetric states in scenarios with compressed mass spectra at $\sqrt{s}=13\text{ TeV}$ with the ATLAS detector	Physical Review D (PRD)
Allbrooke, Benedict MM	76079	Allbrooke, B M M; Asquith, L; Cerri, A; Chavez Barajas, C A; De Santo, A; Salvatore, F; Santoyo Castillo, I; Suruliz, K; Sutton, M R; Vivarelli, I; and 0 other(s)	Measurement of the Higgs boson coupling properties in the $H \rightarrow ZZ^* \gamma$ decay channel at $\sqrt{s} = 13 \text{ TeV}$ with the ATLAS detector	Journal of High Energy Physics
Allbrooke, Benedict MM	76083	Allbrooke, B M M; Asquith, L; Cerri, A; Chavez Barajas, C A; De Santo, A; Salvatore, F; Santoyo Castillo, I; Suruliz, K; Sutton, M R; Vivarelli, I; and 0 other(s)	Measurement of the cross section for Isolated-Photon plus jet production in pp collisions at $\sqrt{s}=13\text{TeV}$ using the ATLAS detector	Physics Letters B
Allbrooke, Benedict MM	76086	Allbrooke, B M M; Asquith, L; Cerri, A; Chavez Barajas, C A; De Santo, A; Salvatore, F; Santoyo Castillo, I; Suruliz, K; Sutton, M R; Vivarelli, I; and 0 other(s)	$ZZ\ell^+\ell^-$ cross-section measurements and search for anomalous triple gauge couplings in 13 TeV pp collisions with the ATLAS detector	Physical Review D
Allbrooke, Benedict MM	76087	Allbrooke, B M M; Asquith, L; Cerri, A; Chavez Barajas, C A; De Santo, A; Salvatore, F; Santoyo Castillo, I; Suruliz, K; Sutton, M R; Vivarelli, I; and 0 other(s)	Search for new phenomena in high-mass final states with a photon and a jet from pp collisions at $\sqrt{s}=13 \text{ TeV}$ with the ATLAS detector	European Physical Journal C: Particles and Fields
Allbrooke, Benedict MM	76091	Allbrooke, B M M; Asquith, L; Cerri, A; Chavez Barajas, C A; De Santo, A; Salvatore, F; Santoyo Castillo, I; Suruliz, K; Sutton, M; Vivarelli, I; and 0 other(s)	Evidence for $H \rightarrow b\bar{b}$ with the ATLAS detector	Journal of High Energy Physics
Allbrooke, Benedict MM	76092	Allbrooke, B M M; Asquith, L; Cerri, A; Chavez Barajas, C A; De Santo, A; Salvatore, F; Santoyo Castillo, I; Suruliz, K; Sutton, M; Vivarelli, I; and 0 other(s)	Search for the direct production of charginos and neutralinos in final states with tau leptons in $\sqrt{s}=13 \text{ TeV}$ collisions with the ATLAS detector	European Physical Journal C: Particles and Fields
Allbrooke, Benedict MM	76094	Allbrooke, B M M; Asquith, L; Cerri, A; Chavez Barajas, C A; De Santo, A; Salvatore, F; Santoyo Castillo, I; Suruliz, K; Sutton, M R; Vivarelli, I; and 0 other(s)	Measurement of the production cross section of three isolated photons in pp collisions at $\sqrt{s}=8 \text{ TeV}$ using the ATLAS detector	Physics Letters B
Allbrooke, Benedict MM	76100	Allbrooke, B M M; Asquith, L; Cerri, A; Chavez Barajas, C A; De Santo, A; Salvatore, F; Santoyo Castillo, I; Suruliz, K; Sutton, M R; Vivarelli, I; and 0 other(s)	Search for a Structure in the $B_0 \text{sp} \pm$ Invariant Mass Spectrum with the ATLAS Experiment	Physical Review Letters
Allbrooke, Benedict MM	76101	Allbrooke, B M M; Asquith, L; Cerri, A; Chavez Barajas, C A; De Santo, A; Salvatore, F; Santoyo Castillo, I; Suruliz, K; Sutton, M R; Vivarelli, I; and 0 other(s)	Searches for heavy ZZ and ZW resonances in the $l\bar{l}q\bar{q}$ and $l\bar{l}q\bar{q}$ final states in pp collisions at $\sqrt{s}=13 \text{ TeV}$ with the ATLAS detector	Journal of High Energy Physics
Allbrooke, Benedict MM	76102	Allbrooke, B M M; Asquith, L; Cerri, A; Chavez Barajas, C A; De Santo, A; Salvatore, F; Santoyo Castillo, I; Suruliz, K; Sutton, M R; Vivarelli, I; and 0 other(s)	Search for dark matter and other new phenomena in events with an energetic jet and large missing transverse momentum using the ATLAS detector	Journal of High Energy Physics
Allbrooke, Benedict MM	76104	Allbrooke, B M M; Asquith, L; Cerri, A; Chavez Barajas, C A; De Santo, A; Salvatore, F; Santoyo Castillo, I; Suruliz, K; Sutton, M R; Vivarelli, I; and 0 other(s)	Evidence for the associated production of the Higgs boson and a top quark pair with the ATLAS detector	Physical Review D

Allbrooke, Benedict MM	76105	Allbrooke, B M M; Asquith, L; Cerri, A; Chavez Barajas, C A; De Santo, A; Salvatore, F; Santoyo Castillo, I; Suruliz, K; Sutton, M R; Vivarelli, I; and 0 other(s)	Measurement of longitudinal flow decorrelations in Pb+Pb collisions at $\sqrt{s_{NN}} = 2.76$ and 5.02 TeV with the ATLAS detector	European Physical Journal C
Allbrooke, Benedict MM	76106	Allbrooke, B M M; Asquith, L; Cerri, A; Chavez Barajas, C A; De Santo, A; Salvatore, F; Santoyo Castillo, I; Suruliz, K; Sutton, M R; Vivarelli, I; and 0 other(s)	Search for $W^{*}tb$ decays in the hadronic final state using pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector	Physics Letters B
Allbrooke, Benedict MM	76107	Allbrooke, B M M; Asquith, L; Cerri, A; Chavez Barajas, C A; De Santo, A; Salvatore, F; Santoyo Castillo, I; Suruliz, K; Sutton, M R; Vivarelli, I; and 0 other(s)	Measurement of long-range multiparticle azimuthal correlations with the subevent cumulant method in pp and p+Pb collisions with the ATLAS detector at the CERN Large Hadron Collider	Physical Review C
Allbrooke, Benedict MM	76110	Allbrooke, B M M; Asquith, L; Cerri, A; Chavez Barajas, C A; De Santo, A; Salvatore, F; Santoyo Castillo, I; Suruliz, K; Sutton, M R; Vivarelli, I; and 0 other(s)	Measurement of t polarisation in $Z/\gamma \rightarrow t\bar{t}$ decays in proton-proton collisions at $\sqrt{s} = 8$ TeV with the ATLAS detector	European Physical Journal C
Allbrooke, Benedict MM	76111	Allbrooke, B M M; Asquith, L; Cerri, A; Chavez Barajas, C A; De Santo, A; Salvatore, F; Santoyo Castillo, I; Suruliz, K; Sutton, M R; Vivarelli, I; and 0 other(s)	Search for $W W/W Z$ resonance production in $l\bar{q}q$ final states in pp collisions at $\sqrt{s} = 13$ TeV with the ATLAS detector	Journal of High Energy Physics
Allbrooke, Benedict MM	76112	Allbrooke, B M M; Asquith, L; Cerri, A; Chavez Barajas, C A; De Santo, A; Salvatore, F; Santoyo Castillo, I; Suruliz, K; Sutton, M R; Vivarelli, I; and 0 other(s)	Measurement of differential cross-sections of a top quark produced in association with a W boson at $\sqrt{s} = 13$ TeV with ATLAS	European Physical Journal C: Particles and Fields
Allbrooke, Benedict MM	76130	Allbrooke, B M M; Asquith, L; Cerri, A; Chavez Barajas, C A; De Santo, A; Salvatore, F; Santoyo Castillo, I; Suruliz, K; Sutton, M R; Vivarelli, I; and 0 other(s)	Search for long-lived, massive particles in events with displaced vertices and missing transverse momentum in $\sqrt{s} = 13$ TeV pp collisions with the ATLAS detector	Physical Review D
Allbrooke, Benedict MM	76131	Allbrooke, B M M; Asquith, L; Cerri, A; Chavez Barajas, C A; De Santo, A; Salvatore, F; Santoyo Castillo, I; Suruliz, K; Sutton, M R; Vivarelli, I; and 0 other(s)	Direct top-quark decay width measurement in the $t \rightarrow \tau \nu$ lepton+jets channel at $\sqrt{s} = 8$ TeV with the ATLAS experiment	European Physical Journal C
Allbrooke, Benedict MM	76133	Allbrooke, B M M; Asquith, L; Cerri, A; Chavez Barajas, C A; De Santo, A; Salvatore, F; Santoyo Castillo, I; Suruliz, K; Sutton, M R; Vivarelli, I; and 0 other(s)	Femtoscopy with identified charged pions in proton-lead collisions at $\sqrt{s_{NN}} = 5.02$ TeV with ATLAS	Physical Review C
Allbrooke, Benedict MM	76135	Allbrooke, B M M; Asquith, L; Cerri, A; Chavez Barajas, C A; De Santo, A; Salvatore, F; Santoyo Castillo, I; Suruliz, K; Sutton, M R; Vivarelli, I; and 0 other(s)	Search for doubly charged Higgs boson production in multi-lepton final states with the ATLAS detector using proton-proton collisions at $\sqrt{s} = 13$ TeV	European Physical Journal C: Particles and Fields
Allbrooke, Benedict MM	76140	Allbrooke, B M M; Asquith, L; Cerri, A; Chavez Barajas, C A; De Santo, A; Salvatore, F; Santoyo Castillo, I; Suruliz, K; Sutton, M R; Vivarelli, I; and 0 other(s)	Measurement of the production cross-section of a single top quark in association with a Z boson in proton-proton collisions at 13 TeV with the ATLAS detector	Physics Letters B
Allbrooke, Benedict MM	76141	Allbrooke, B M M; Asquith, L; Cerri, A; Chavez Barajas, C A; De Santo, A; Salvatore, F; Santoyo Castillo, I; Suruliz, K; Sutton, M R; Vivarelli, I; and 0 other(s)	Search for heavy resonances decaying into a W or Z boson and a Higgs boson in final states with leptons and b-jets in 36fb^{-1} of $\sqrt{s} = 13$ TeV pp collisions with the ATLAS detector	Journal of High Energy Physics
Allbrooke, Benedict MM	76194	Allbrooke, B M M; Asquith, L; Cerri, A; Chavez Barajas, C A; De Santo, A; Salvatore, F; Santoyo Castillo, I; Suruliz, K; Sutton, M R; Vivarelli, I; and 0 other(s)	A search for resonances decaying into a Higgs boson and a new particle X in the $XH \rightarrow q\bar{q}bb$ final state with the ATLAS detector	Physics Letters B

Allbrooke, Benedict MM	76195	Allbrooke, B M M; Asquith, L; Cerri, A; Chavez Barajas, C A; De Santo, A; Salvatore, F; Santoyo Castillo, I; Suruliz, K; Sutton, M R; Vivarelli, I; and 0 other(s)	Measurement of the W-boson mass in pp collisions at $\sqrt{s}=7$ TeV with the ATLAS detector	European Physical Journal C: Particles and Fields
Allbrooke, Benedict MM	76196	Allbrooke, B M M; Asquith, L; Cerri, A; Chavez Barajas, C A; De Santo, A; Salvatore, F; Santoyo Castillo, I; Suruliz, K; Sutton, M R; Vivarelli, I; and 0 other(s)	Analysis of the Wtb vertex from the measurement of triple-differential angular decay rates of single top quarks produced in the t-channel at $\sqrt{s}=8$ TeV with the ATLAS detector	Journal of High Energy Physics
Allbrooke, Benedict MM	76197	Allbrooke, B M M; Asquith, L; Cerri, A; Chavez Barajas, C A; De Santo, A; Salvatore, F; Santoyo Castillo, I; Suruliz, K; Sutton, M R; Vivarelli, I; and 0 other(s)	Search for High-Mass Resonances Decaying to $t\bar{t}$ in pp Collisions at $\sqrt{s}=13$ TeV with the ATLAS Detector	Physical Review Letters
Allbrooke, Benedict MM	76198	Allbrooke, B M M; Asquith, L; Cerri, A; Chavez Barajas, C A; De Santo, A; Salvatore, F; Santoyo Castillo, I; Suruliz, K; Sutton, M R; Vivarelli, I; and 0 other(s)	Measurement of quarkonium production in proton-lead and proton-proton collisions at 5.02 TeV with the ATLAS detector	European Physical Journal C
Allbrooke, Benedict MM	76199	Allbrooke, B M M; Asquith, L; Cerri, A; Chavez Barajas, C A; De Santo, A; Salvatore, F; Santoyo Castillo, I; Suruliz, K; Sutton, M R; Vivarelli, I; and 0 other(s)	A search for pair-produced resonances in four-jet final states at $\sqrt{s}=13$ TeV with the ATLAS detector	The European Physical Journal C - Particles and Fields
Allbrooke, Benedict MM	76201	Allbrooke, B M M; Asquith, L; Cerri, A; Chavez Barajas, C A; De Santo, A; Salvatore, F; Santoyo Castillo, I; Suruliz, K; Sutton, M R; Vivarelli, I; and 0 other(s)	Search for heavy ZZ resonances in the $l+l+l+l$ and $l+l+l+l$ final states using proton-proton collisions at $\sqrt{s}=13$ TeV with the ATLAS detector	The European Physical Journal C: Particles and Fields
Allbrooke, Benedict MM	76202	Allbrooke, B M M; Asquith, L; Cerri, A; Chavez Barajas, C A; De Santo, A; Salvatore, F; Santoyo Castillo, I; Suruliz, K; Sutton, M R; Vivarelli, I; and 0 other(s)	Combination of inclusive and differential $t\bar{t}$ charge asymmetry measurements using ATLAS and CMS data at $\sqrt{s}=7$ and 8 TeV	Journal of High Energy Physics
Allbrooke, Benedict MM	76203	Allbrooke, B M M; Asquith, L; Cerri, A; Chavez Barajas, C A; De Santo, A; Salvatore, F; Santoyo Castillo, I; Suruliz, K; Sutton, M R; Vivarelli, I; and 0 other(s)	Measurement of the Drell-Yan triple-differential cross section in pp collisions at $\sqrt{s}=8$ TeV	Journal of High Energy Physics
Bason, Mark G	76097	Jammi, Sindhu; Pyragius, Tadas; Bason, Mark G; Florez, Hans Marin; Fernholz, Thomas	Dispersive detection of radio-frequency-dressed states	Physical Review A
Calmet, Xavier	76380	Calmet, Xavier; Casadio, Roberto	What is the final state of a black hole merger?	Modern Physics Letters A
Calmet, Xavier	76669	Calmet, Xavier; Latosh, Boris	Dark matter in quantum gravity	European Physical Journal C: Particles and Fields
Christoforou, Costas Marios	76859	Kassa, Ezra; Takahashi, Hiroki; Christoforou, Costas Marios	Precise positioning of an ion in an integrated Paul trap-cavity system using radiofrequency signals	Journal of Modern Optics
Duivenvoorden, Steven	77363	Duivenvoorden, Steven	Unravelling the influence of environment, redshift and confusion on the star formation in dusty galaxies	

Fekete, Julia	76385	Rieländer, Daniel; Kutluer, Kutlu; Ledingham, Patrick M; Gündogan, Mustafa; Fekete, Julia; Mazzera, Margherita; de Riedmatten, Hugues	Quantum storage of heralded single photons in a praseodymium-doped crystal	Physical Review Letters
Fekete, Julia	76408	Fekete, J; Chai, S; Gardiner, S A; Andersen, M F	Resonant transfer of large momenta from finite-duration pulse sequences	Physical Review A
Fekete, Julia	76409	Chai, Shijie; Fekete, Julia; McDowall, Peter; Coop, Simon; Lindballe, Thue; Andersen, Mikkel F	Survival resonances in an atom-optics system driven by temporally and spatially periodic dissipation	Physical Review A
Haine, Simon A	77058	Haine, Simon A	Quantum noise in bright soliton matterwave interferometry	New Journal of Physics
Hayes, Anthony	75851	Hayes, Anthony J; Dooley, Shane; Munro, William J; Nemoto, Kae; Dunningham, Jacob	Making the most of time in quantum metrology: concurrent state preparation and sensing	Quantum Science and Technology
Hile, Samuel J	76391	Gorman, S K; He, Y; House, M G; Keizer, J G; Keith, D; Fricke, L; Hile, S J; Broome, M A; Simmons, M Y	Tunneling statistics for analysis of spin-readout fidelity	Physical Review Applied
Hile, Samuel J	76392	Broome, M A; Gorman, S K; House, M G; Hile, S J; Keizer, J G; Keith, D; Hill, C D; Watson, T F; Baker, W J; Hollenberg, L C L; and 0 other(s)	Two-electron spin correlations in precision placed donors in silicon	Nature Communications
Iliev, Ilian T	76363	Aubert, Dominique; Deparis, Nicolas; Ocvirk, Pierre; Shapiro, Paul R; Iliev, Ilian T; Yepes, Gustavo; Gottlöber, Stefan; Hoffman, Yehuda; Teysier, Romain	The inhomogeneous reionization times of present-day galaxies	The Astrophysical Journal
Iliev, Ilian T	76364	Kakiichi, Koki; Majumdar, Suman; Mellema, Garrelt; Ciardi, Benedetta; Dixon, Keri L; Iliev, Ilian T; Jelic, Vitor; Koopmans, Léon V E; Zaroubi, Saleem; Busch, Philipp	Recovering the H II region size statistics from 21-cm tomography	Monthly Notices of the Royal Astronomical Society
Iliev, Ilian T	76366	Sullivan, David; Iliev, Ilian T; Dixon, Keri L	Using artificial neural networks to constrain the halo baryon fraction during reionization	Monthly Notices of the Royal Astronomical Society
Iliev, Ilian T	76367	Giri, Sambit K; Mellema, Garrelt; Dixon, Keri L; Iliev, Ilian T	Bubble size statistics during reionization from 21-cm tomography	Monthly Notices of the Royal Astronomical Society
Iliev, Ilian T	76369	Dixon, Keri L; Iliev, Ilian T; Gottlöber, Stefan; Yepes, Gustavo; Knebe, Alexander; Libeskind, Noam; Hoffman, Yehuda	Reionization of the Milky Way, M31, and their satellites – I. Reionization history and star formation	Monthly Notices of the Royal Astronomical Society
Keller, Matthias K	76077	Walker, Thomas; Miyanishi, Koichiro; Ikuta, Rikizo; Takahashi, Hiroki; Vartabi Kashanian, Samir; Tsujimoto, Yoshiaki; Hayasaka, Kazuhiro; Yamamoto, Takashi; Imoto, Nobuyuki; Keller, Matthias	Long-distance single photon transmission from a trapped ion via quantum frequency conversion	Physical Review Letters

Keller, Matthias K	76207	Foot, C J; Trypogeorgos, D; Bentine, E; Gardner, A; Keller, M	Two-frequency operation of a Paul trap to optimise confinement of two species of ions	International Journal of Mass Spectrometry
King, Alice AK	75681	King, Alice A K; Davies, Benjamin R; Noorbehesht, Nikan; Newman, Peter; Church, Tamara L; Harris, Andrew T; Razal, Joselito M; Minett, Andrew I	A new Raman metric for the characterisation of graphene oxide and its derivatives	Scientific Reports
King, Alice AK	75960	Newman, P; Lu, Z.; Roohani-Esfahani, S I; Church, T L; Biro, M; Davies, B; King, A; Mackenzie, K; Minett, A I; Zreiqat, H	Porous and strong three-dimensional carbon nanotube coated ceramic scaffolds for tissue engineering	Journal of Materials Chemistry B
King, Alice AK	76680	Matt-Domjan, Brigitta; King, Alice; Totti, Stella; Matta, Csaba; Dover, George; Martinez, Patricia; Zakhidov, Anvar; La Ragione, Roberto; Macedo, Hugo; Jurewicz, Izabela; and 1 other(s)	Biophysical interactions between pancreatic cancer cells and pristine carbon nanotube substrates: potential application for pancreatic cancer tissue engineering	Journal of Biomedical Materials Research Part B: Applied Biomaterials
Large, Matthew J	76296	Nufer, Sebastian; Large, Matthew; King, Alice; Ogilvie, Sean Paul; Brunton, Adam; Dalton, Alan	Edge selective gas detection using Langmuir films of graphene platelets	ACS Applied Materials and Interfaces
Loveday, Jonathan N	76241	Sreejith, Sreevarsha; Pereverzyev Jr, Sergiy; Kelvin, Lee S; Marleau, Francine R; Haltmeier, Markus; Ebner, Judith; Bland-Hawthorn, Joss; Driver, Simon P; Graham, Alister W; Holwerda, Benne W; and 7 other(s)	Galaxy And Mass Assembly: automatic morphological classification of galaxies using statistical learning	Monthly Notices of the Royal Astronomical Society
Loveday, Jonathan N	76242	Velliscig, Marco; Cacciato, Marcello; Hoekstra, Henk; Schaye, Joop; Heymans, Catherine; Hildebrandt, Hendrik; Loveday, Jon; Norberg, Peder; Sifón, Cristóbal; Schneider, Peter; and 6 other(s)	Galaxy–galaxy lensing in EAGLE: comparison with data from 180 deg ² of the KiDS and GAMA surveys	Monthly Notices of the Royal Astronomical Society
Loveday, Jonathan N	76247	Ching, J H Y; Croom, S M; Sadler, E M; Robotham, A S G; Brough, S; Baldry, I K; Bland-Hawthorn, J; Colless, M; Driver, S P; Holwerda, B W; and 10 other(s)	Galaxy And Mass Assembly (GAMA): the environments of high- and low-excitation radio galaxies	Monthly Notices of the Royal Astronomical Society
Loveday, Jonathan N	76249	Bilicki, Maciej; Peacock, John A; Jarrett, Thomas H; Cluver, Michelle E; Maddox, Natasha; Brown, Michael J I; Taylor, Edward N; Hambly, Nigel C; Solarz, Aleksandra; Holwerda, Benne W; and 6 other(s)	WISE× SuperCOSMOS photometric redshift catalog: 20 millions galaxies over 3π steradians	The Astrophysical Journal Supplement Series
Loveday, Jonathan N	76371	Beeston, R. A; Wright, A H; Maddox, S; Gomez, H L; Dunne, L; Driver, S P; Robotham, A.; Clark, C J R; Vinsen, K; Takeuchi, T T; and 17 other(s)	GAMA/H-ATLAS: the local dust mass function and cosmic density as a function of galaxy type - a benchmark for models of galaxy evolution	Monthly Notices Of The Royal Astronomical Society
Loveday, Jonathan N	76689	Gunawardhana, M L P; Norberg, P; Zehavi, I; Farrow, D J; Loveday, J; Hopkins, A M; Davies, L J M; Wang, L; Alpaslan, M; Bland-Hawthorn, J; and 3 other(s)	Galaxy And Mass Assembly (GAMA): the signatures of galaxy interactions as viewed from small scale galaxy clustering	Monthly Notices Of The Royal Astronomical Society
Olivieri, Luana	76906	Olivieri, Luana; Totero Gongora, Juan Sebastian; Pasquazi, Alessia; Peccianti, Marco	Time-resolved nonlinear ghost imaging	ACS Photonics
Peccianti, Marco	76383	Missori, M; Pawcenis, D; Bagniak, J; Mosca Conte, A; Violante, C; Maggio, M S; Peccianti, M; Pulci, O; Lojewskab, J	Quantitative diagnostics of ancient paper using THz time-domain spectroscopy	Microchemical Journal

Peters, Luke	76771	Peters, Luke	Surface terahertz phenomena	
Romer, Kathy K	75782	Davis, C; Rozo, E; Roodman, A; Alarcon, A; Cawthon, R; Gatti, M; Lin, H; Miquel, R; Rykoff, E S; Troxel, M A; and 2 other(s)	Cross-correlation redshift calibration without spectroscopic calibration samples in DES science verification data	Monthly Notices of the Royal Astronomical Society
Romer, Kathy K	75849	Drlica-Wagner, A; Sevilla-Noarbe, I; Rykoff, E S; Greundl, R A; Yanny, B; Tucker, D L; Hoyle, B; Carnero Rosell, A; Bernstein, G M; Bechtol, K; and 20 other(s)	Dark energy survey year 1 results: the photometric data set for cosmology	Astrophysical Journal Supplement
Romer, Kathy K	76746	Hoyle, B; Gruen, D; Bernstein, G M; Rau, M M; De Vicente, J; Hartley, W G; Gaztanaga, E.; Derose, J; Troxel, M A; Davis, C; and 52 other(s)	Dark Energy Survey year 1 results: redshift distributions of the weak-lensing source galaxies	Monthly Notices Of The Royal Astronomical Society
Romer, Kathy K	76747	Chiu, I; Mohr, J J; McDonald, M; Bocquet, S; Desai, S; Klein, M; Israel, H; Ashby, M L N; Stanford, A; Benson, B A; and 2 other(s)	Baryon content in a sample of 91 galaxy clusters selected by the South Pole Telescope at $0.2 < z < 1.25$	Monthly Notices Of The Royal Astronomical Society
Saint, Reece William	76012	Saint, R; Evans, W; Zhou, Y; Barrett, T; Fromhold, T M; Saleh, E; Maskery, I; Tuck, C; Wildman, R; Orucevic, F; and 0 other(s)	3D-printed components for quantum devices	Scientific Reports
Sargent, Mark	75955	Nyland, K; Harwood, J J; Mukherjee, D D; Jagannathan, P; Rujopakarn, W; Emonts, B; Alatalo, K; Bicknell, G V; Davis, T A; Greene, J E; and 11 other(s)	Revolutionizing our understanding of AGN feedback and its importance to galaxy evolution in the era of the next generation very large array	Astrophysical Journal
Sargent, Mark	75957	Leslie, S K; Schinnerer, E; Groves, B; Sargent, Mark; Zamorani, G; Lang, P; Vardoulaki, E	Probing star formation and ISM properties using galaxy disk inclination II: testing typical FUV attenuation corrections out to $z \sim 0.7$	Astronomy and Astrophysics
Sargent, Mark	76176	Coogan, R T; Daddi, E; Sargent, M T; Stazzullo, V; Valentino, F; Gobat, R; Margdis, G; Bethermin, M; Pannella, M; Onodera, M; and 5 other(s)	Merger driven star-formation activity in Cl J1449+0856 at $z=1.99$ as seen by ALMA and JVLA	Monthly Notices of the Royal Astronomical Society
Seery, David	76914	Butchers, Sean; Seery, David	Numerical evaluation of inflationary 3-point functions on curved field space	Journal of Cosmology and Astroparticle Physics
Setford, Jack	77429	Setford, Jack	Strongly coupled physics beyond the standard model	
Totero Gongora, Juan Sebastian S	69633	Trillo, S; Totero Gongora, J S; Fratalocchi, A	Wave instabilities in the presence of non vanishing background in nonlinear Schrodinger systems	Scientific Reports
Totero Gongora, Juan Sebastian S	69634	Totero Gongora, Juan Sebastian; Fratalocchi, Andrea	Optical force on diseased blood cells: towards the optical sorting of biological matter	Optics and Lasers in Engineering

Totero Gongora, Juan Sebastian S	69640	Totero Gongora, Juan Sebastian; Fratolocchi, Andrea	Harnessing disorder at the nanoscale	Encyclopedia of Nanotechnology
Totero Gongora, Juan Sebastian S	69652	Mazzone, Valerio; Totero Gongora, Juan Sebastian; Fratolocchi, Andrea	Near-field coupling and mode competition in multiple anapole systems	Applied Sciences
Wetzel, Benjamin RL	76749	MacLellan, Benjamin; Roztockj, Piotr; Kues, Michael; Reimer, Christian; Romero Cortés, Luis; Zhang, Yanbing; Sciara, Stefania; Wetzel, Benjamin; Cino, Alfonso; Chu, Sai T; and 4 other(s)	Generation and coherent control of pulsed quantum frequency combs	Journal of Visualized Experiments
Wilkins, Stephen M	76243	Andrews, S K; Driver, S P; Davies, L J M; Kafle, P R; Robotham, A S G; Vinsen, K; Wright, A H; Bland-Hawthorn, J; Bourne, N; Bremer, M; and 7 other(s)	Galaxy And Mass Assembly: the evolution of the cosmic spectral energy distribution from $z = 1$ to $z = 0$	Monthly Notices of the Royal Astronomical Society
Wilkins, Stephen M	76245	Wright, A H; Robotham, A S G; Driver, S P; Alpaslan, M; Andrews, S K; Baldry, I K; Bland-Hawthorn, J; Brought, S; Brown, M J I; Colless, M; and 16 other(s)	Galaxy And Mass Assembly (GAMA): the galaxy stellar mass function to $z = 0.1$ from the r-band selected equatorial regions	Monthly Notices of the Royal Astronomical Society
Wilkins, Stephen M	76250	Reddy, Naveen A; Oesch, Pascal A; Bouwens, Rychard; Montes, Mireia; Illingworth, Garth D; Steidel, Charles C; van Dokkum, Pieter G; Atek, Hakim; Carollo, Marcella C; Cibinel, Anna; and 5 other(s)	The HDUV Survey: A Revised Assessment of the Relationship between UV Slope and Dust Attenuation for High-redshift Galaxies	The Astrophysical Journal
Wilkins, Stephen M	76251	Naidu, R P; Oesch, P A; Reddy, N; Holden, B; Steidel, C C; Montes, M; Atek, H; Bouwens, R J; Carollo, C M; Cibinel, A; and 6 other(s)	The HDUV survey: six Lyman continuum emitter candidates at $z \sim 2$ revealed by HST UV imaging	The Astrophysical Journal

GRANTS. Submitted, Forecasted, and Awarded

May, June and July 2018

Principal Investigator	Principal Funder	Programme	Title	Value	Notes
SUBMITTED					
Blyuss, Konstantin	Royal Society	International Exchanges Scheme	Protecting crops against parasites using mathematical models and natural biostimulants	222,884	
Alan Dalton/Michael Davies	EPSRC	Capital Award in Support of Early Career Researchers	SussexCapital Award in Support of Early Career Researchers	100,000	
Dalton, Alan	Innovate UK	Open Programme funding competition round 1	Strain Sensor Integration for Wearables	151,252	
Dalton, Alan	Royal Society	GCRF - International Collaboration Awards	Next Generation Rechargeable Batteries Based on 2D Materials	224,904	
Dalton, Alan	Royal Society	International Exchanges Scheme	Flexible Energy Harvesting Systems	11,760	
Garraway, Barry	EPSRC	EPSRC International centre-to-centre research collaborations	International centre-to-centre research collaboration: Advanced Quantum Sensor Applications	53,011	
Kiss, Istvan	Aviva Insurance UK Ltd.	Studentship (Partial Funding)	Machine learning techniques for classification and inference problems in the insurance industry	39,000	
Krueger, Peter	Innovate UK	Commercialising quantum devices: innovation R&D	Ultrasensitive magnetic imaging of EV battery modules	379,641	
Madzvamuse, Anotida	UKRI	UKRI Future Leaders Fellowship	Unravelling the Multiscale nature of Tissue Formation and Cancer Growth: Modelling, Analysis, and Numerical methods (external applicant)	667,334	
Oliver, Seb	ESRC	ESRC Large Grants	Shaping Open Science	1,645,350	10% FTE participation in Joanna Chattaway's (BMEC)
Oliver, Seb	RCUK -Research Councils UK	GCRF - Interdisciplinary Research Hubs	GCRF Sustainable Rainforest Communities Hub	1,287,384	5% FTE participation in Antony Alexander's (SPRU) application
Oliver, Seb	STFC	STFC Innovation Partnership Scheme	Innovation Partnership Fellow at University of Sussex	28,192	
Oliver, Seb	STFC	STFC Opportunities Call 2018	Exploiting Earth Observations to address the Sustainability Development Goals	73,498	
Pasquazi, Alessia	EPSRC	EPSRC UK Quantum Technology Hub for Sensors and Metrology (Birmingham)	Validation of Proof of Concept Micro-Comb Lasers with Fully Commercial Technology	81,260	
Sanz, Veronica	Royal Society	GCRF - International Collaboration Awards	Mining on the Chinese Natural Resources databases using unsupervised Machine Learning Techniques	93,397	
Sanz, Veronica	Huawei Technologies Ltd	Huawei Innovation Research Program (HIRP) 2018	Quantum Machine Learning Algorithms	7,339	
Vivarelli, Iacopo	STFC	EPP Capital Equipment Grant 2019	Sussex Experimental Particle Physics Capital Equipment 2019	18,000	
FORECASTED					
Hensinger, Winfried	EU	H2020 - FET Flagships	Microwave driven ion Trap quantum Computing	443,863	
Iliev, Ilian	Royal Society	University Research Fellowship	Paving a Path to the First Stars	521,134	Fellow: Anastasia Fialkov
Krueger, Peter	Innovate UK	TSB Faraday Battery Challenge: Innovation feasibility studies, round 2	Current Density Imaging in EV battery modules	116,141	
AWARDED					
Dalton, Alan	Advanced Material Development	Industrial Research Grant	Nanomaterial Systems for Applications in Barcoding, Time-Temperature Indicators, Functional Coatings and Medical Sensors	598,943	

Garraway, Barry	US Army	Networking Travel Grant	Adelphi Laboratory Center	3,507	
Hindmarsh, Mark	STFC	Ernest Rutherford Fellowship	Higgs Cosmology	473,132	Fellow: Daniel Figueroa
Keller, Matthias	Innovate UK	Commercialisation of Quantum Technologies 4	IOTA: Compact Ion Clock for Precision Timing Applications	250,855	
Keller, Matthias	EU	H2020 - Marie Curie ITN: European Training Network (ETN)	LIMQUET (Light-Matter Interfaces for Quantum Enhanced Technology)	193,227	
Pasquazi, Alessia	EPSRC via Birmingham Quantum Hub	EPSRC UK Quantum Technology Hub for Sensors and Metrology (Birmingham)	Validation of Proof of Concept Micro-Comb Lasers with Fully Commercial Technology	81,260	
Pasquazi, Alessia	EPSRC via Birmingham Quantum Hub	EPSRC UKRI Innovation Fellowship Call 2017	Industrial Pathway to Micro-Comb Lasers	580,169	
Peeters, Simon	STFC	GCRF - Foundation Award 2017	Materia Oscura: Instrumentation Development to Observe the Invisible	83,712	
Simm, Nicholas	Leverhulme Trust	Early Career Fellowship	Mesoscopic Statistics of Random Matrices and Gaussian Free Field	8,000	
Simm, Nicholas	Royal Society	University Research Fellowship	Random matrix theory and log-correlated Gaussian fields	484,363	
Thomas, Peter	Royal Astronomical Society	RAS Grant	From merger trees to merger graphs: improved descriptions of halo growth	1,200	
Wilkins, Stephen	Royal Astronomical Society	Royal Society (SSE Lunch Grant)		400	