



# Pat Scott

## Research Interests

Broad Interests **Astroparticle physics, theory and detection of dark matter, theoretical cosmology, evolution and chemical composition of the Sun and other stars, numerical methods in physics and astronomy**

## Employment History

- 2017 onwards **Lecturer in Fundamental Physics (permanent faculty)**, *Department of Physics*, Imperial College London.
- 2014–2019 **Ernest Rutherford Fellow**, *Department of Physics*, Imperial College London.
- 2012–2014 **Banting Fellow**, *Department of Physics*, McGill University, Canada.
- 2010–2012 **Trottier Astrophysics Fellow & Institute for Particle Physics Theory Fellow**, *Department of Physics*, McGill University, Canada.

## Education

- 2006–2010 **PhD**, *Stockholm University*, Theoretical Physics.  
Title: Searches for Particle Dark Matter (Supervisors: Joakim Edsjö, Lars Bergström, Jan Conrad)
- 2006–2008 **Fil. Lic.**, *Stockholm University*, Theoretical Physics.
- 2001–2005 **BSc (Hons)**, *Australian National University*, Astrophysics, Neuroscience, Theoretical Physics.  
Double First Class Honours, Dual University Medals (Astrophysics & Neuroscience)

## Research Prizes

- 2014 **International Research Collaboration Award**, *University of Sydney*, joint with A. Saavedra.
- 2010 **The Sigrid Arrhenius Prize**, *Stockholm University*, best PhD thesis in Natural Sciences.
- 2005, 2006 **The University Medal (twice)**, *Australian National University (ANU)*.
- 2006 **The Sir Grafton Elliot Smith Prize**, *Australian Neuroscience Society*, best student manuscript.
- 2005 **The Bok Prize**, *Astronomical Society of Australia*, best Hons/MSc thesis in astrophysics.

## Competitively-Awarded Grants and Personal Fellowships

All values converted to approximate GBP

### As Lead Investigator (£1.4M total)

- 2018–2020 **International Exchange Grant**, *The Royal Society*, £12k.
- 2018–2020 **Collaboration Award**, *European Partners Fund*, Imperial College, £5k.
- 2017–2020 **Particle Physics Theory Consolidated Grant, Imperial College**, *Science and Technology Facilities Council (STFC)*, Project component: £290k.  
Lead Investigator on GAMBIT project activities funded by the grant, Co-I on full grant. 150% increase in cosmology / QFT / phenomenology support relative to previous Particle Physics Theory Grant (i.e. before my arrival at Imperial).
- 2016 **Twining Grant**, *ERA-CAN+*, *Cosmoparticle statistics and the search for dark matter*, £4.6k.

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- 2016–2019 **Astrophysics Consolidated Grant, Imperial College, Science and Technology Facilities Council (STFC)**, Project component: £380k.  
Lead Investigator of funded project *Gamma Rays from the Galactic Centre and Small-Scale Cosmological Probes*, Co-I of full grant.
- 2014–2019 **Ernest Rutherford Fellowship, STFC**, £473k.
- 2012–2014 **Banting Fellowship, Tri-Agency Research Council/NSERC, Government of Canada**, £81k.
- 2010–2012 **Theory Fellowship, Canadian Institute for Particle Physics**, £23k.
- 2010–2012 **Trottier Fellowship in Astrophysics, McGill University**, £41k.
- 2009 **G & E Kobbs Foundation Grant**, £5k.
- 2009 **Helge Axelsson Johnsons Foundation Grant**, £1k.
- 2009 **CF Liljevalchs Foundation Travel Grant**, £0.6k.
- 2008 **G & E Kobbs Foundation Grant**, £2k.
- 2008 **European Network for Theoretical Astroparticle Physics ILIAS/N6 Travel Grant**, £0.6k.
- 2008 **Helge Axelsson Johnsons Foundation Grant**, £2k.
- 2007 **IAU Exchange of Astronomers Grant, International Astronom. Union Commission 46**, £2k.
- 2006–2010 **HEAC (High Energy Astrophysics and Cosmology Centre) Doctoral Fellowship, AlbaNova University Centre, Stockholm**, £86k.
- 2001–2005 **National Undergraduate Scholarship and Distinguished Scholar Program, ANU**, £35k.

#### Computing Time Awarded (As Chief Investigator)

- 2018–2021 **Tier 0 Project Access (multi-year allocation), Marconi@CINECA, PRACE (EU)**, 126M hr.
- 2017 **Tier 0 Pilot Grant, Marconi@CINECA, PRACE (EU)**, 150k hr.
- 2017 **Tier 1 Regular Access Grant, MareNostrum, Red Española de Supercomputación**, 5M hr.
- 2017 **Prometheus Supercomputing Grant, PL-Grid (Poland)**, 10M hr.
- 2016 **Prometheus Supercomputing Grant, PL-Grid (Poland)**, 9M hr.
- 2016 **Tier 1 Pilot Grant, MareNostrum, Red Española de Supercomputación**, 500k hr.
- 2015 **Tier 1 Pilot Grant, Cartesius, SURFsara (Netherlands)**, 100k hr.

#### As Official Sponsor (£0.5M total)

- 2017 **Marie Curie-Skłodowska Individual Fellowship (Ben Farmer), Horizon2020 (EU)**, £160k.
- 2016 **Junior Research Fellowship (Aaron Vincent), Imperial College**, £120k.
- 2014, 2015 **President's PhD Scholarships (James McKay & Sebastian Hoof), Imperial College**, 2×£90k.

#### As Co-Investigator

- 2015–2018 **Marie Curie-Skłodowska Research and Innovation Staff Exchange (RISE) Grant, Horizon2020 (EU)**, Imperial component: £60k (28%).
- 2014–2017 **Team Research Project Grant, FRQNT, Quebec, Canada**, £130k.

## Supervision

### Principle supervision

- Postdocs José Eliel Camargo-Molina, STFC Particle Theory postdoc, Imperial 2018–present  
Ben Farmer, Marie Curie-Skłodowska Individual Fellow, Imperial 2018–present  
Anders Kvillestad, joint postdoc with Oslo University, Imperial 2017–present  
Alex Geringer-Sameth, STFC Astrophysics postdoc, Imperial 2016–present  
Aaron Vincent, Imperial Junior Research Fellow 2016–2017 → tenure-track Assistant Professor, Queen's University, Canada

PhD Sanjay Bloor, Imperial 2020

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- Sebastian Hoof, Imperial 2019  
 James McKay, Imperial 2018 → Data Scientist, Verizon Connect
- Masters Hannah Banks, Imperial 2018 → Maths Tripos Part III, Cambridge University. Abdus Salam Prize, ranked 1st of 226 graduating MSci students.  
 Siyam Ansari, Imperial 2018 → Data Scientist, Schroders Investment Management  
 Puwen Sun, Imperial 2018 → PhD, Glasgow University  
 Philippe Giguere, McGill, 2013 → Medical School, McGill.  
 Hamish Silverwood, Canterbury, 2012 → PhD, GRAPPA Amsterdam → postdoc, ICCUB Barcelona.
- Honours Madeleine Anthonisen, McGill 2013 → PhD, McGill.

### Co-supervision (official)

- PhD Janina Renk, Stockholm University 2019  
 Hamish Clark, University of Sydney 2018 → Computer Vision Researcher, black.ai
- Masters Iza Veliscek, Imperial 2019  
 Nicholas Reed, Imperial 2019
- Honours Ben Geytenbeek, University of Adelaide 2015 → PhD, Cambridge.

### Co-supervision (unofficial)

- PhD Selim Hotinli, Imperial 2020  
 Arianna Renzini, Imperial 2020  
 Elinore Roebber, McGill, 2017 → postdoc, University of Birmingham.  
 Grace Dupuis, McGill, 2017  
 Aaron Vincent, McGill, 2012 → postdoc, IFIC Valencia → postdoc, IPPP Durham → Junior Research Fellow, Imperial College.
- Masters Elinore Roebber, McGill, 2012 → PhD, McGill → postdoc, University of Birmingham.  
 Grace Dupuis, McGill, 2012 → PhD, McGill.

## National & international networks

- 2018 onwards **Partner Investigator**, *Australian Research Council Centre of Excellence in Computational Theoretical Physics*. Final stage proposal (result expected mid-2019).
- 2017 onwards **Fellow** of the Royal Astronomical Society (FRAS)
- 2016 **Core contributor**, ESA M5 mission proposal: *Theia* astrometric observatory. Co-ordinated ultracompact minihalo science case.
- 2015–present **Participating Faculty**, MSCA H2020 RISE network ASTROSTAT.
- 2014–2017 **Leader, Imperial Node**, FRQNT-funded network STRINGDMC. Imperial-McGill collaboration and exchange program on connections between cosmic strings and dark matter.
- 2012–present **Collaboration Leader**, GAMBIT Collaboration.
- 2012–2017 **Core/Theory Working Group Convenor**, GAMBIT Collaboration.
- 2011–present **Associate Member**, IceCube Collaboration.
- 2008–present **Affiliated Member**, *Fermi* Large Area Telescope (LAT) Collaboration.

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## Organisation of Scientific Meetings

- Summer 2020 **Program Co-ordinator**, *Towards a holistic approach to dark matter searches*, Munich Institute for Astroparticle Physics (proposed).
- Aug 2019 **Scientific Advisory Committee**, *PHYSTAT-DM*, Stockholm
- May 2018 **Chair of organising committee**, *(Re)interpreting the results of new physics searches at the LHC IV*, CERN
- Dec 2016 **Scientific Programme Committee**, *(Re)interpreting the results of new physics searches at the LHC II*, CERN
- June 2016 **Scientific Programme Committee**, *(Re)interpreting the results of new physics searches at the LHC I*, CERN
- 2015/16 **Local Organising Committee**, *Neutrino 2016*
- 2016 **Lead organiser**, *Sixth GAMBIT Collaboration Meeting*, Craobh Haven, Scotland
- 2015 **Lead organiser**, *GAMBIT: Towards a Global And Modular Beyond-the-Standard-Model Inference Tool*, Banff International Research Station South (CMO Oaxaca)
- 2012 **Lead organiser**, *First GAMBIT Collaboration Meeting*, CERN
- 2011 **Chair of organising committee**, *Dark Matter From Every Direction*, Montréal, 27 attendees
- 2010 **Chair of organising committee**, *PROSPECTS Conference*, Stockholm, 42 attendees

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## External Service

- 2016–present **Steering Committee**, LHC Beyond-the-Standard Model (BSM) Reinterpretation Forum. A CERN LPCC forum for pushing forward the development of statistical methods, tools and data releases needed for reinterpretation of LHC data in terms of BSM theories.
- 2014 **Guest editor**, *Physics of the Dark Universe*, issue “Hunt for Dark Matter”
- 2012 **PhD defense opponent**, Jordi Casanellas, IST Lisbon
- 2012 **Convenor**, *Particle Astrophysics and Cosmology Track*, International Conference on High Energy Physics (ICHEP), Melbourne
- Grant reviewer** STFC (UK; Astronomy Grants Panel), *The Royal Society* (UK), *Austrian Science Fund*, *Swiss National Science Foundation*, *National Science Centre Poland*, *Kazakhstan National Centre for Science and Technology Evaluation* (panels: space, math/physics)
- Referee** *Phys. Rev. Lett.*, *Phys. Rev. D*, *J. Cosmology & Astroparticle Physics (JCAP)*, *J. High Energy Physics (JHEP)*, *European Phys. J. C (EPJC)*, *Phys. Lett. B*, *Europhys Lett.*, *Rept. Prog. Phys.*, *Nuclear Phys. B*, *J. Phys. G*, *The Astrophysical Journal (ApJ)*, *ApJ Letters*, *ApJ Supplement*, *Monthly Notices of the Royal Astronomical Society (MNRAS) Letters*, *Astronomy & Astrophysics*, *Physics of the Dark Universe*, *Statistical Analysis & Data Mining*, *PLoS Computational Biology*.

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## Institutional Service

- 2018 **PhD examiner**, 9-month review, Wahidur Rahman, Physics, Imperial College London
- 2017 **MSc thesis examiner**, Adelié Gorse, Physics, Imperial College London
- 2017 **Head of interview panel**, STFC postdoc (José Eliel Camargo-Molina; Theory, Imperial)
- 2016 **Interview panellist**, STFC postdoc (Teruca Belmonte; Laboratory Astrophysics, Imperial)
- 2016 **Interview panellist**, STFC postdoc (Alex Geringer-Sameth; Astrophysics, Imperial)
- 2016 **MSc thesis examiner**, Robert Stein, Physics, Imperial College London
- 2016 **MSc thesis examiner**, Faye Havelock, Physics, Imperial College London
- 2015 **PhD examiner**, 9-month review, Sara Algeri, Mathematics, Imperial College London
- 2015 **PhD examiner**, 9-month review, Charlotte Norris, Physics, Imperial College London

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- 2015–2017 **Interview panellist**, STFC & external PhD studentships (Astrophysics, Imperial)
- 2014– present **Founder & head organiser**, *Imperial Particle Phenomenology, Particle Astrophysics and Cosmology (3-PAC) Seminar Series*
- 2013, 2014 **Member**, McPherson Lectureship Committee, Physics, McGill University
- 2012–2014 **Founder & committee chair**, *McGill Astroparticle Seminar Series*
- 2009–2010 **Member**, Departmental Computing Committee, Physics, Stockholm University

## Teaching experience

- 2017–2019 **Lecturer**, *Computational Physics*, Imperial College London. 120 students, 3rd year undergraduate. Lectures, computational laboratories and personal consultations.
- 2018 **Instructor**, *NExT Phd Workshop: New Physics at Colliders and Beyond*, Queen Mary University London. 20 students, PhD level. Lectures and computational laboratories.
- 2017–2018 **Lecturer**, Cosmoparticle component of *High Energy Physics* Imperial College London HEP Group. 13 students, 1st year PhD. Lectures.
- 2014–2017 **Lecturer**, *Numerical Methods in Physics*, Imperial College London. 20 students, Mostly MSc, some PhD. Lectures, tutorials and personal consultations. Taught 3 times.
- 2015 **Lecturer**, Dark matter component of *Astrophysics*, Imperial College London & University College London Astrophysics Groups. 15 students, 1st & 2nd year PhD. Lectures.
- 2015 **Lecturer**, *Ninth TRR33 Winter School on Cosmology*, Passo del Tonale, Italy. 30 students, PhD level. Lectures.
- 2014 **Lecturer**, *Invited Lecture Series on Astroparticle Physics*, University of Sydney. 20 students, MSc and PhD. Lectures.
- 2011, 2013 **Lecturer**, *Practical Numerical Methods in Physics*, McGill University. 11 and 13 students, mixed graduate/undergraduate. Lectures, tutorials and personal consultations. Taught 2 times.
- 2013 **Guest Lecturer**, *The Very Early Universe*, McGill University. 10 students, MSc and PhD. Lecture.
- 2011 **Guest Lecturer**, *Stellar Evolution*, University of San Francisco. 20 students, 3rd year undergraduate. Lecture.
- 2008–2009 **Tutor**, *Advanced Relativistic Quantum Field Theory*, Stockholm University. 6 students, mixed MSc and PhD. Tutorials.
- 2003 **Residential Tutor** in Physics and Mathematics, Burgmann College, Australian National University. 20 students, 1st and 2nd year undergraduate. Group and personal tutorials.

## Teaching distinctions and awards

- 2018 **Nominee, Student Academic Choice Awards (Category: Excellence in Supervision)**, *Imperial College London*.
- 2017–present **Fellow** of the Higher Education Academy (FHEA)

## Pedagogical leadership

### Course co-ordination

- 2017–2019 *Computational Physics*, Imperial College London. Co-lead.
- 2014–2017 *Numerical Methods in Physics*, Imperial College London. Sole lead.
- 2011, 2013 *Practical Numerical Methods in Physics*, McGill University. Sole lead.

### Pedagogical mentorship

Lecturers Mentoring and feedback on lecturing, *Computational Physics* 2018/19 junior guest lecturers Anders Kvellestad and José Eliel Camargo-Molina

Mentoring and feedback on lecturing, *Computational Physics* 2017/18 junior guest lecturers James Owen and Diego Alonso Alvarez

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Mentoring and feedback on course design and lecturing, *Introduction to C++* 2016/17 lecturer Éamonn Murray, Imperial College

Tutors Mentoring and feedback on computational laboratory management, *Computational Physics* 2018/19 Head Lab Demonstrator Vito Palladino

Mentoring and feedback on computational laboratory management, *Computational Physics* 2017/18 Head Lab Demonstrator Diego Alonso Alvarez

Managing, mentoring and feedback on assignment grading and computational laboratory demonstrating, *Computational Physics* 2018/19 lab demonstrators (14 demonstrators)

Managing, mentoring and feedback on assignment grading and computational laboratory demonstrating, *Computational Physics* 2017/18 lab demonstrators (12 demonstrators)

Mentoring and feedback on assignment grading, *Numerical Methods in Physics* 2016/17, graduate teaching assistants Alise Virbule, Eduardo Ramos Fernandez and Jonas Verschueren

Mentoring and feedback on assignment grading, *Numerical Methods in Physics* 2015/16, graduate teaching assistants Alise Virbule and Eduardo Ramos Fernandez

Mentoring and feedback on assignment grading, *Numerical Methods in Physics* 2014/15, graduate teaching assistants Farnaz Ostovari and Beth Rice

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## University pedagogical education

2017–2018 Learning and Teaching Development Programme, Faculty of Natural Sciences, Imperial College London. 20 weeks. Courses completed:

- STAR (Supporting Teaching Accreditation and Recognition) Introductory Workshop
- Introduction to Teaching for Learning
- Introduction to Supervising PhD Students
- Introduction to Personal Tutoring
- STAR Pre-Submission Workshop
- Departmental Teaching Practices
- Lecturing Skills
- Learning Technologies for Teaching
- Designing for Learning
- Introduction to Blackboard Learn
- A Practical Guide to Interactive Teaching
- A Practical Guide to Communicating Knowledge

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## Scientific software (all codes listed are open source)

- GAMBIT** (lead author) supporting software framework for GAMBIT Collaboration science program
- Diver** (lead author) a differential evolution package for applications in physics and astronomy
- nulike** (lead author) a package for calculating event-level neutrino telescope likelihoods for arbitrary source spectra
- pippi** (sole author) a package for parsing, post-processing and plotting samples from MCMCs and related sampling algorithms
- FLATLib** (sole author) a package for fast convolution with the *Fermi*-LAT instrumental response
- DarkStars** (sole author) a package for computing the effects of dark matter on the evolution of stars
- DDCalc** (contributing author) a package for calculating rates and likelihoods for direct dark matter search experiments
- DarkSUSY** (development contributor) a package for performing dark matter calculations
- SuperBayeS** (development contributor) a first-generation package for SUSY global fits
- Proficient in C/C++, Fortran, Python, Perl, Ruby, IDL, Basic, Visual Basic, Matlab, Mathematica, others.

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## Outreach

- Print When supercomputers go over to the dark side (with M. White), *Physics World*, pp. 42–46, March 2017
- Med mörk materia som drivmedel (Fuelled by dark matter; in Swedish), *Populär Astronomi* No. 3, 2008
- Expert comment [Space.com, Does Dark Matter Exist? Bold New Study Offers Alternative Model](#), 2017
- Logistics Leader of outreach sub-committee, *Neutrino 2016* Local Organising Committee
- Arranged 2-day neutrino outreach sessions for high schoolers (2016, Wohl Lab, Imperial College)
- Arranged public lectures by Brian Cox (2016, Royal Geographical Society), Andrea Ghez (2014, McGill), Brian Schmidt (2013, McGill) and John Ellis (2010, Stockholm)
- In person Public Lecturer, *Imperial Astronomical Society*, Imperial College (scheduled Jan 2019)
- Public Lecturer, *Cambridge Astronomical Society*, Cambridge University (2018)
- Public Lecturer, *Science for Fiction*, Imperial College London (2018)
- Chair, *The big picture*, Sean Carroll, The Royal Institution, London (2016)
- Lecturer, *Pint of Science: Atoms to Galaxies*, London (2016)
- Volunteer communicator at World Science Fiction Convention, London ('LONCON', 2014), John Curtin School of Medical Research Open Day (2005), Mount Stromlo Post-Bushfire Reopening Day (2004), and the Australian Science Festival (2001, 2004).

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## Media coverage of my work

- [European Physical Journal C Highlight, Combining experimental data to test models of new physics that explain dark matter](#). 2017
- [Phys.org, GAMBIT project suggests theoretical particles are too massive for LHC detection](#). 2017
- [American Association for the Advancement of Science \(AAAS\) EurekAlert!, GAMBIT narrows the hiding places for 'new physics'](#). 2017
- [Science NewsLine, GAMBIT Narrows the Hiding Places for 'New Physics'](#). 2017
- [NRK \(Norwegian Broadcasting Corporation\), Mørk materie kan kaste lys på det tidlige universet](#) (Dark matter can shed light on the early Universe; in Norwegian). 2016
- [Physics magazine, Viewpoint: Cosmic Clues from Mini Clumps of Dark Matter](#). 2016
- [Cosmos magazine, Mini blobs of ancient dark matter may throw light on Big Bang](#). 2016
- [SpaceTime with Stuart Gary, A new test for cosmic inflation](#). 2016
- [Space.com, The Hunt for Dark Matter Minihalos Offers Glimpse into Early Universe Inflation](#). 2016
- [IceCube Press Release, Improving dark matter searches with neutrino telescopes](#). 2016
- [Clapway, Is Dark Matter The Answer To Our Sun Mystery?](#) 2015
- [The Space Reporter Dark matter may be lurking in the Sun](#). 2015
- [The Daily Mail Is dark matter lurking inside the SUN?](#) 2015
- [Popular Mechanics, Can Dark Matter Explain Why the Sun Acts So Weird?](#) 2015
- [Phys.org, Physicists suggest theory versus observational differences in the sun could be due to dark matter](#). 2015
- [Physics World magazine, Could the Sun be trapping asymmetric dark matter?](#) 2015
- [Physics magazine Synopsis: Heat-Carrying Dark Matter in Sun](#). 2015
- [New Scientist, Dark matter makes galaxy's stars live long and prosper](#), 2008
- [Infoniac, Dark Matter Prolongs the Life of Stars in the Milky Way?](#), 2008

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## Invited Talks (available from [www.imperial.ac.uk/people/p.scott](http://www.imperial.ac.uk/people/p.scott))

### Plenaries

- [1] *International Workshop on Dark Matter and Stars*, Lisbon, Portugal, Dec., 2018.
- [2] *DarkGhosts*, Brussels, Belgium, Nov., 2018.
- [3] *Preparing for Dark Matter Particle Discovery*, Chalmers University of Technology, Göteborg, June, 2018.
- [4] *Recontres de Moriond (QCD)*, La Thuile, Italy, Mar., 2018.
- [5] *7th International Fermi Symposium*, Garmisch-Partenkirchen, Germany, Oct., 2017.
- [6] *7th Amsterdam-Paris-Stockholm Meeting*, Kasteel Woerden, Netherlands, Oct., 2017.
- [7] *Tools for the SM and the New Physics*, Corfu, Greece, Sept., 2017.
- [8] *Rencontres du Vietnam: Exploring the Dark Universe*, Quy Nhon, Vietnam, July, 2017.
- [9] *13th International Symposium on Cosmology and Particle Astrophysics (CosPA)*, Sydney, Nov., 2016.
- [10] *Dark matter from aeV to ZeV*, Lumley Castle, County Durham, Nov., 2016.
- [11] *Beyond the Standard Model with Neutrino Detectors*, Seoul, July, 2016.
- [12] *(Re)interpreting the results of new physics searches at the LHC*, CERN, June, 2016.
- [13] *Dark Matter and Stars*, Paris, June, 2016.
- [14] *DM@LHC*, University of Amsterdam, Apr., 2016.
- [15] *UK HEP Forum*, The Cosener's House, Oxford, Nov., 2015.
- [16] *Identification of Dark Matter with a Cross-Disciplinary Approach*, IFT Madrid, May, 2015.
- [17] *Identifying and Characterizing Dark Matter via Multiple Probes*, Kavli Institute for Theoretical Physics, University of California Santa Barbara, May, 2013.
- [18] *CosmoStats13*, Banff International Research Centre, Mar., 2013.
- [19] *Imperial Centre for Inference and Cosmology Inaugural Workshop*, Imperial College London, Aug., 2012.
- [20] *The LHC, Particle Physics and The Cosmos*, Auckland University, July, 2012.
- [21] *Cosmic Radiation Fields 2010: Sources in the Early Universe*, DESY Hamburg, Nov., 2010.
- [22] *Searching for Dark Matter – A Multi-Disciplinary Approach*, University of Leicester, Jan., 2010.

### Invited Lecture Series

- [23] *Lectures on Global Fitting*, NExT Phd Workshop: New Physics at Colliders and Beyond, Queen Mary University of London, June, 2018.
- [24] *Lectures on Dark Matter*, Ninth TRR33 Winter School on Cosmology, Passo del Tonale, Italy, Dec., 2015.
- [25] *Lectures in Astroparticle Phenomenology*, University of Sydney, Feb., 2014.

### Invited Conference Presentations

- [26] *DMStat: Statistical Challenges in the Search for Dark Matter*, Banff International Research Station, Banff, Canada, Feb., 2018.

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- [27] *The next generation of simplified Dark Matter models (IPPP dark matter brainstorming workshop)*, Imperial College, May, 2016.
- [28] *Australian National Institute of Theoretical Astrophysics (ANITA) Annual Meeting*, University of Sydney, Feb., 2014.
- [29] *Beyond the LHC Workshop*, NORDITA, Stockholm, Sweden, July, 2013.
- [30] *Cosmic Rays and Photons from Dark Matter Annihilations: Theoretical Issues*, Schloss Waldthausen, Mainz, Germany, June, 2013.
- [31] *SnowDOG Dark Matter Meeting*, Snowbird, Utah, Mar., 2012.
- [32] *Topics in Astroparticle and Underground Physics (TAUP) 2011*, Munich, Sept., 2011.
- [33] *TeV Particle Astrophysics VII*, Stockholm, Aug., 2011.
- [34] *Nordic Astrophysics 2010*, Visby, Sweden, May, 2010.
- [35] *Mini Symposium on Dark Matter*, University of Hamburg, Dec., 2009.
- [36] *Dark Stars Workshop*, Michigan Centre for Theoretical Physics, Ann Arbor, Nov., 2009.
- [37] *Extreme Astrophysics for All II*, Lund, Feb., 2009.

### Invited Colloquia & Institutional Seminars

- [38] *Particle Cosmology and Quantum Gravity Seminar*, Nottingham University, Oct., 2018.
- [39] *Colloquium*, School of Mathematics and Physics, University of Queensland, July, 2018.
- [40] *Colloquium*, School of Physics, University of New South Wales, Sydney, July, 2018.
- [41] *Colloquium*, School of Physics, University of Sydney, July, 2018.
- [42] *Theoretical Physics Seminar*, Department of Physics, University of Oslo, June, 2017.
- [43] *Theory Group Seminar*, University of Liverpool, May, 2017.
- [44] *Laboratoire Univers et Particules de Montpellier Seminar*, University of Montpellier, Apr., 2017.
- [45] *Centre for Cosmology, Particle Physics and Phenomenology (CP3) Seminar*, Université Catholique de Louvain, Apr., 2017.
- [46] *S-HEP Seminar*, University of Southampton, Feb., 2017.
- [47] *Colloquium*, Anglo-Australian Observatory, Sydney, Nov., 2016.
- [48] *SIFA Seminar*, Sydney Institute for Astronomy, Nov., 2016.
- [49] *Colloquium*, Institute of Cosmology and Gravitation, University of Portsmouth, Oct., 2016.
- [50] *Theoretical Particle Physics Seminar*, Technical University of Munich, Apr., 2016.
- [51] *Astronomy Seminar*, University of Sussex, Apr., 2016.
- [52] *Particle Physics Seminar*, Institute for Theoretical Particle Physics and Cosmology, RWTH-Aachen, Feb., 2016.
- [53] *Astronomy Seminar*, Queen Mary University of London, Nov., 2015.
- [54] *IPPP Seminar*, Institute for Particle Physics Phenomenology, Durham, June, 2015.
- [55] *Particles & Fields Seminar*, Department of Physics, Oxford University, May, 2015.
- [56] *HEP Seminar*, Department of Physics, University of Zurich, May, 2015.
- [57] *Theoretical Particle Physics Seminar*, King's College London, Nov., 2014.

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- [58] *HEP Divisional Seminar*, Department of Physics and Astronomy, Uppsala University, Oct., 2014.
- [59] *Theoretical Physics Seminar*, Department of Physics, University of Oslo, Oct., 2014.
- [60] *INVISIBLES Seminar*, IFIC Valencia, Sept., 2014.
- [61] *Feast of Facts*, Mt Stromlo Observatory, Canberra, Apr., 2014.
- [62] *Colloquium*, School of Chemistry and Physics, University of Adelaide, Mar., 2014.
- [63] *School Seminar*, School of Physics, University of New South Wales, Sydney, Mar., 2014.
- [64] *Colloquium*, School of Physics, Monash University, Melbourne, Mar., 2014.
- [65] *Cosmology Seminar*, Perimeter Institute for Theoretical Physics, Waterloo, Canada, Oct., 2013.
- [66] *Particle Physics Seminar*, Perimeter Institute, Waterloo, Canada, Oct., 2013.
- [67] *KITP Program "Hunting for Dark Matter: Building a cross-disciplinary, multi-pronged approach"*, Kavli Institute for Theoretical Physics, University of California Santa Barbara, June, 2013.
- [68] *Joint Particle Seminar Series*, University of California Irvine, Feb., 2013.
- [69] *Astroparticle Seminar*, CENTRA, Instituto Superior Técnico, Lisbon, Dec., 2012.
- [70] *School of Physics Colloquium*, Monash University, Melbourne, July, 2012.
- [71] *Departmental Seminar*, Physics, University of Canterbury, Christchurch, Nov., 2011.
- [72] *Theoretical Astrophysics Seminar Series*, Fermilab, Batavia, Sept., 2011.
- [73] *Weinberg Theory Group Seminar Series*, University of Texas, Austin, Apr., 2011.
- [74] *Astroparticle Seminar Series*, University of Hamburg, May, 2010.
- [75] *Astronomy & Theoretical Physics Colloquium*, Lund, Mar., 2010.
- [76] *Astronomy Colloquium*, Imperial College London, Jan., 2010.
- [77] *SEAS Colloquium*, Max Planck Institute for Astrophysics, Garching, Germany, Dec., 2008.

### Prize Lectures

- [78] *Bok Prize Lecture*, *Astronomical Society of Australia Annual Scientific Meeting*, University of Sydney, July, 2005.

+ ~80 contributed presentations not shown (see [www.imperial.ac.uk/people/p.scott](http://www.imperial.ac.uk/people/p.scott))

## Publications

**Summary: 81 publications, 7000+ citations, h-index: 33.** Data from HEP-inSPIRE, NASA-ADS & Google Scholar, Oct 2018.

As an astroparticle physicist, I collaborate with particle physicists, astrophysicists, cosmologists and pure theorists, so author ordering on my papers does not follow a consistent scheme. On some it is by contribution, on some alphabetical, and on others a mixture of the two.

### Journal articles

- [1] S. Hoof, F. Kahlhoefer, **P. Scott**, C. Weniger, and M. White, *Axion global fits with Peccei-Quinn symmetry breaking before inflation using GAMBIT*, submitted to *JHEP* (2018) [[arXiv:1810.07192](https://arxiv.org/abs/1810.07192)].
- [2] GAMBIT Collaboration: P. Athron, C. Balázs, *et. al.*, *Combined collider constraints on neutralinos and charginos*, submitted to *Eur. Phys. J. C* (2018) [[arXiv:1809.02097](https://arxiv.org/abs/1809.02097)].
- [3] GAMBIT Collaboration: P. Athron, C. Balázs, *et. al.*, *Global analyses of Higgs portal singlet dark matter models using GAMBIT*, submitted to *Eur. Phys. J. C* (2018) [[arXiv:1808.10465](https://arxiv.org/abs/1808.10465)].
- [4] P. Athron, J. M. Cornell, F. Kahlhoefer, J. McKay, **P. Scott**, and S. Wild, *Impact of vacuum stability, perturbativity and XENON1T on global fits of  $\mathbb{Z}_2$  and  $\mathbb{Z}_3$  scalar singlet dark matter*, *Eur. Phys. J. C* **78** (2018) 830, [[arXiv:1806.11281](https://arxiv.org/abs/1806.11281)]. Contact authors: J. McKay & **P. Scott**.
- [5] J. McKay and **P. Scott**, *Two-loop mass splittings in electroweak multiplets: Winos and minimal dark matter*, *Phys. Rev. D* **97** (2018) 055049, [[arXiv:1712.00968](https://arxiv.org/abs/1712.00968)].
- [6] J. McKay, **P. Scott**, and P. Athron, *Pitfalls of iterative pole mass calculation in electroweak multiplets*, *Eur. Phys. J. Plus* **133** (2018) 444, [[arXiv:1710.01511](https://arxiv.org/abs/1710.01511)].
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- [8] GAMBIT Collaboration: P. Athron, C. Balázs, *et. al.*, *GAMBIT: The Global and Modular Beyond-the-Standard-Model Inference Tool*, *Eur. Phys. J. C* **77** (2017) 784, [[arXiv:1705.07908](https://arxiv.org/abs/1705.07908)]. Contact authors: B. Farmer, A. Kvellestad, **P. Scott**, C. Weniger.
- [9] GAMBIT Collaboration: P. Athron, C. Balázs, *et. al.*, *Status of the scalar singlet dark matter model*, *Eur. Phys. J. C* **77** (2017) 568, [[arXiv:1705.07931](https://arxiv.org/abs/1705.07931)]. Contact authors: J. Cornell, J. McKay, **P. Scott**, C. Weniger.
- [10] GAMBIT Collaboration: P. Athron, C. Balázs, *et. al.*, *Global fits of GUT-scale SUSY models with GAMBIT*, *Eur. Phys. J. C* **77** (2017) 824, [[arXiv:1705.07935](https://arxiv.org/abs/1705.07935)]. Contact authors: P. Athron, B. Farmer, A. Kvellestad, **P. Scott**, M. White.
- [11] GAMBIT Collaboration: P. Athron, C. Balázs, *et. al.*, *A global fit of the MSSM with GAMBIT*, *Eur. Phys. J. C* **77** (2017) 879, [[arXiv:1705.07917](https://arxiv.org/abs/1705.07917)]. Contact authors: P. Athron, A. Kvellestad, **P. Scott**, M. White.
- [12] GAMBIT Scanner Workgroup: G. D. Martinez, J. McKay, B. Farmer, **P. Scott**, E. Roebber, A. Putze, and J. Conrad, *Comparison of statistical sampling methods with ScannerBit, the GAMBIT scanning module*, *Eur. Phys. J. C* **77** (2017) 761, [[arXiv:1705.07959](https://arxiv.org/abs/1705.07959)].
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- [14] GAMBIT Collider Workgroup: C. Balázs, A. Buckley, *et. al.*, *ColliderBit: a GAMBIT module for the calculation of high-energy collider observables and likelihoods*, *Eur. Phys. J. C* **77** (2017)

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