Prof. Anne M. Green

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http://anne-green.net/physics/Home.html

Career history

School of Physics & Astronomy, University of Nottingham (UoN), UK, Professor since 2015	Oct 2005 –
School of Physics & Astronomy, University of Sheffield, UK, PPARC Advanced Fellow & Lecturer	Apr 2004 – Sep 2005
Astronomy Centre, University of Sussex, UK, PPARC Advanced Fellow	Oct 2003 – Mar 2004
Physics, Stockholm University, Sweden, Postdoctoral Research Assistant	Oct 2001 – Sep 2003
Astronomy Unit, Queen Mary, University of London, PPARC Postdoctoral Fellow	Oct 1998 – Sep 2001

Education

Astronomy Centre, University of Sussex, UK, DPhil Astronomy	Oct 1995 – Sep 1998
University of Oxford, UK, BA Physics, ranked 3rd in year of ~ 175 students	Oct 1992 – Sep 1995

Research

World expert on dark matter and primordial black holes, with broad expertise spanning the production of dark matter in the early Universe, its present day distribution, and experimental and observational signatures.

- 72 publications (26 as sole or main author) in high-quality refereed journals. Excluding CTA collaboration publications: > 7000 total citations, h-index $= 45$, 1 publication with > 500 citations and another 4 with > 250.

  Representative highlights [citations from iNSPIRE database May 26]:
  - 'The History of Primordial Black Holes', Bernard J. Carr and Anne M. Green, opening chapter of 'Primordial Black Holes', Springer (2025) [36]
  - 'Primordial black holes as a dark matter candidate', Anne M. Green and Bradley J. Kavanagh, J. Phys. G48 043001 (2021) (24 pages) [872]
  - 'Microlensing and dynamical constraints on primordial black hole dark matter with an extended mass function', Anne M. Green, Phys. Rev. D94, 063530 (6 pages) (2016) [221]
  - 'A review of the discovery reach of directional dark matter detection', Frederic Mayet, Anne M. Green et al., Physics Reports 627 1-49 (2016) [282]
  - 'Astrophysical uncertainties on direct detection experiments', Anne M. Green, Mod. Phys. Lett. A27 1230004 (2012) (20 pages) [171]
  - 'The first WIMPy halos', Anne M. Green, Stefan Hofmann and Dominik J, Schwarz, JCAP 0508:003 (2005) (33 pages) [315]
- Supervisor of 9 PhD students, all submitted on time and passed their viva with minor corrections, 2 (Bradley Kavanagh and Ciaran O'Hare) have long-term academic positions.
- PI Leverhulme Trust Research Fellowship (2025-27) and Research Project Grant (2011-14), CoI STFC Particle Theory consolidated grant (total value of last 3 awards £2.6M), host for Royal Astronomical Society Sir Norman Lockyer Fellowship.
- In past 5 years, delivered 14 invited talks at international conferences (and declined 25 invitations).
- Invited lectures at nine international research schools, including the opening 'flagship' lectures at the 2021 Les Houches Summer School on Dark Matter.

Leadership and service highlights:

- Member of STFC Science Board (PPAN), 2024-.
- Director of Research for School of Physics & Astronomy, UoN, 2023-. Responsible for School research strategy, chair of Research Committee and Research Operations Group.
- Wrote UoN Physics REF2020 Environment Statement, which scored 75% world leading (3rd highest score for Physics) and was sent to other UoN Schools pre-submission as an exemplar.
- Editorial board of Progress in Particle and Nuclear Physics (impact factor 17.9).
- Co-organised 2021 Heraeus workshop on 'Astrophysical windows on dark matter'.
- Member of International Advisory Committee of 2023 Nobel Symposium on Dark Matter.
- Member of funding panels in Finland, Netherlands, Portugal, US and UK (including STFC Fellowships, Particle Theory Grants, and EPSRC Mathematical Science Infrastructure).
- Member of the 2019/20 UK and 2020/21 European strategic reviews of dark matter detection.
- Chair of STFC Particle Astrophysics and Cosmology Fellowship sift sub-panel, 2011/12.
- Founding member and treasurer of Institute of Physics Astroparticle Physics Group.

Teaching

Extensive experience of designing, covening and delivering modules, including a 2nd year core Mathematical Methods module, a 3rd year Cosmology option module, and a 4th year synoptic module on Image Processing. Proficient in a wide range of delivery methods and technologies: 'chalk and talk', slides/handouts with empty boxes for equations, 'bite-sized' videos, and audience response tools (slido, and padlet).

- Excellent student feedback, most recent Student Evaluation of Teaching score: 93.2%. Example comments:
  - "Easily one of the best lecturers! She takes difficult topics and explains them in a way that is easily understandable with great ease."
  - "Brilliant lecturer. Very good at explaining difficult concepts and I love how she brings current and past work into her lectures. She's the best."
  - "Able to balance quantitative and qualitative explanations of the subject rather than making it too hand-wavy or getting us lost in the maths."
- 1st year leader, responsible for induction, attendance, assessments, new peer mentoring scheme, 2014-19.
- Member of School Teaching Committee, Teaching Operations Group, and Learning Community Forum (staff-student feedback committee), 2015-18.
- External examiner for undergraduate and postgraduate taught degrees, Kings College London, 2018-22.
- Invited to present at School training sessions on online (2020) and hybrid (2022) teaching.
- Personal tutor to > 100 undergraduate students, sample feedback from 2019/20: "You are the one who made physics bearable for me, so I can't thank you enough for getting me through this year."
- 3rd year projects on dark matter, usually in the top 5 most oversubscribed projects.
- Member of the marking team for the 4th year project module 2022-25. Previously offered 1 or 2 new research projects each year, 1 of which led to a publication in Phys. Rev. D

Public engagement

Regularly participate in and organise a wide range of public engagement activities, including talks, radio, videos and podcasts.
Selected highlights:

- Guest on Radio 4 In Our Time episode on Dark Matter.
- Guest on Physics World podcast.
- Talk on Dark Matter at New Scientist Instant Expert, London.
- Organised > 20 masterclasses for 16-18 year olds.
- Public talks in Finland, Poland, Sweden and the UK.
- Regularly quoted in the press e.g. BBC, New Scientist, Sky And Telescope (cover story).
- Member of School Outreach Committee, 2006-16.