

Prof. Simeon Bird (sbird@ucr.edu)

Research Interests

Cosmology and galaxy formation. Numerical simulations, massive neutrinos, Lyman- α absorbers, machine learning, primordial black holes, galaxy clusters.

Employment and Education

- 2018- *Assistant Professor at UC Riverside*
- 2015-2017 *Einstein Fellow at Johns Hopkins University*
- 2014-2015 *McWilliams Fellow, Carnegie Mellon University*
- 2011-2014 *Member, Institute for Advanced Study (IAS), Princeton*
- 2011 *Ph.D. in Astronomy, University of Cambridge*
Thesis: “Constraining Fundamental Physics From Cosmology”
Advisors: Prof. Hiranya Peiris and Prof. Martin Haehnelt
- 2010 *M.A., University of Cambridge*
- 2007 *M. Math with Distinction, University of Cambridge*
Part III Essay: “Non-Gaussianity from Inflation”
Advisor: Dr. Paul Shellard
- 2006 *B.A. in Mathematics with Honours, University of Cambridge*
First Class Degree from Pembroke College

Press Releases

- 2022 *“Astronomers identify protoclusters with new technique”* (UCR)
- 2021 *“New Application of Artificial Intelligence Just Removed One of the Biggest Roadblocks in Astrophysics”* (Simons Foundation).
- 2020 *“Evolving the Early Universe in 24 Hours on Frontera”*
(Texas Advanced Computing Center)
- 2016 *“Did Gravitational Wave Detector Find Dark Matter?”*
(Johns Hopkins) featured in New Scientist, Reddit, National Geographic, Washington Post, La Repubblica, Ciel et Espace, Vice.com, Forbes.com, the Mail Online, Symmetry and Nature.
- 2014 *“Illuminating illumination: what lights up the universe?”*
(University College London).

UCR Graduate Students

- 2018- Martin Fernandez NSFGRFP.
- 2019-2022 Bryan Scott. Now postdoc at Northwestern/LSST.
- 2019- Mahdi Qezlou. UCR/Carnegie Research Fellow.
- 2019- Ming-Feng Ho. NASA FINESST Fellow.
- 2018- Reza Monadi.

2018 Jacob Fauber (joint with Prof. Shelton).

Other Advising Experience

2018-2021 Postdoc, Phoebe Upton-Sanderbeck Now Los Alamos National Lab.
2016 Max Gronke, PhD student at Johns Hopkins. Now leading Max Planck Research Group at MPA.
2016 Cyril Creque-Sarbinowski, REU student, now PhD at Johns Hopkins.
2015 Alex Gurvich, REU student, Harvard. Now PhD Northwestern, NSF GRFP.
2014 Joshua Suresh, PhD student at Harvard CfA. Now Intellectual Ventures.
UCR Undergraduates Thomas Waddleton (2018, now JHU PhD student). Hugo Chica (2018, now CalBridge PhD student). Chris Valenzuela (2020, now Ohio State PhD student). Miriam Gonzalez (2019-2020). Stanton Zeng (2021) Thinh Nguyen Luong (2021). Kevin Hong (2022).

Awards

2022 *Outstanding Referee of the Physical Review journals*
One of 146/82,000 active referees. Lifetime award.
2007 *Tyson Medal, University of Cambridge*
Awarded only at the discretion of the examiners to the best-performing undergraduate student in Part III for subjects related to astronomy.
2007 *Atiyah Prize, Pembroke College Cambridge*
2006 *Foundation Scholarship and College Prize, Pembroke College Cambridge*
2003-2007 *Isaac Newton Trust Bursary, University of Cambridge*

Invited Talks

2022 University of Oxford, Oxford, UK.
Hong Kong UST IAS Jockey Club, Hong Kong, China.

2020-2021 (during COVID)
Royal Observatory Edinburgh, UK
University of Wisconsin, Madison, WI.
Institute for Fundamental Physics of the Universe / SISSA, Trieste, Italy.
University of Southern California, Los Angeles, CA.
RWTH Aachen University, Aachen, Germany.

2019 Stanford University, Stanford, CA.
University of Washington, Seattle, WA.
4 week program at MIAPP, Garching bei Munich, Germany.
PACIFIC 2019, Moorea, French Polynesia.
UC San Diego, San Diego, CA.

2018 Colloquium, Yale University, New Haven.
Seminar, Jet Propulsion Laboratory, Pasadena, CA.
Seminar, Lawrence Berkeley National Lab, Berkeley, CA.
UCLA Dark Matter conference, Los Angeles, CA.
TEVPA 2018 (declined).
CIPANP 2018, Indian Wells, CA.
Rencontres du Vietnam, Vietnam.
Carnegie Observatories, Pasadena, CA.
McGill University, Montreal, Canada.
IAS, Princeton, NJ.

Invited talks on Primordial Black Hole Dark Matter (2016-2017) :

Harvard University.
Perimeter Institute.
Syracuse University.
Special session at APS April 2017.
Cambridge, UK.
Theory Frontiers meeting at University of Texas, Austin.
Rencontres du Moriond (declined).
Gordon Research Conference, Hong Kong.
Origins of Mass conference, Odense, Denmark.
Flatiron Institute New York.

Invited talks on Damped Lyman- α Systems: UC Berkeley.
Conferences in Heidelberg, Germany and Notre Dame, IN.

Invited talks on Neutrinos: U. Chicago.
U. Pennsylvania.
Ohio State University.
Valencia, Spain.

Other invited talks: Leicester University and UKCosmo meeting, Manchester.
Cosmology with Neutral Hydrogen 2017, UC Berkeley.

Outreach talks: Allegheny Observatory, Pittsburgh, PA, Cambridge University, UK.
Riverside Astronomical Society, Orange County Astronomers, University of California, Riverside, Moreno Valley Community College.

Contributed Seminars: Numerous.

Professional Service

2022 Convened SNOWMASS group on Primordial Black Holes.
2019, 2022 NSF Proposal Reviewer
2017-2020 NASA Proposal Reviewer.
2018-2022 STFC Dirac reviewer.
2015-2022 Reviewer for several European national research councils and foundations.

2011-present Referee for Physical Review Letters, Physical Review D, Astrophysical Journal, MNRAS, JCAP, Journal of Machine Learning Research