Eugene A. Lim

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King's College London,
The Strand, London, WC2R 2LS,
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Education

University of Chicago, Chicago, IL.
Ph.D. in Astronomy and Astrophysics, Autumn 2004.
Thesis : *Can We See Lorentz-Violating Vector Fields in the CMB?*
Advisor : *Sean M. Carroll*
M.S. in Astronomy and Astrophysics, Spring 2001.

Universiti Sains Malaysia, Malaysia.
B.Eng. in Mechanical Engineering, First Class Honors, August 1996.

Appointments

Professor of Theoretical Physics, Department of Physics, King's College London, Oct 2021 – Present

Reader, Department of Physics, King's College London, Sept 2018 – Sept 2021

Senior Lecturer, Department of Physics, King's College London, Sept 2015 – 2018

University Lecturer, Department of Physics, King's College London, Sept 2012 – Sept 2015

University Lecturer, Department of Applied Mathematics and Theoretical Physics, Cambridge University, Nov 2010 – Sept 2012

Ordinary Fellow, King's College, Cambridge University, Oct 2011 – Oct 2012

Visiting Professor, University of Fondwa, Haiti, Summer 2010.

Research Positions

Postdoctoral Associate, Institute for Strings, Cosmology and Astroparticle Physics, and Physics Department, Columbia University, Autumn 2007 - Autumn 2010

Postdoctoral Associate, Physics Department, Yale University, Autumn 2004 - Autumn 2007

Research Assistant, Department of Astronomy and Astrophysics, Kavli Institute for Cosmological Physics, University of Chicago, Spring 2001 - Autumn 2004 *Advisor*: Sean Carroll

Current Grants

PI, Leverhulme Trust Major Research Grant, 2022-2026.

PI, DiRAC Computational Grant ACTP238, 50M CPU/hrs Computational Grant, 2021-2024.

PI, Perrens Fund Education Grant, 2019-present.

Past Grants

Co-I, PRACE Tier-0 No. 2018194669, 30M CPU/hrs, Computational Grant, 2019-2020.

PI, PRACE Tier-0 No. 2020225359, 30M CPU/hrs, Computational Grant, 2020-2021.

Co-I, *Extreme Universe* DiRAC Computational Grant, 20M CPU/hrs, 2018-present.

PI, STFC Astronomy Grant ST/P000606/1 Consolidator Grant 2017-2020.

Co-I, RES/BSC High Performance Computing grant *Black holes in dark matter environment*, 1.4M CPU/Hrs, 2016-2017.

Co-I, Foundational Questions Institute (FQXi) Large Grant, 2016-2018.

Co-I, PRACE Tier-0 PPFPWG Computation Grant, 2018.

PI, STFC Astronomy Grant ST/L000717/1 Consolidator Grant 2014-2017.

DIRAC/RAC Computation Grant "Extreme Universe" Work Package.

Co-I, STFC Rolling Grant, 2010-2012

Collaborator, DE-PS02-09ER09-02 Infrastructure Grant, 2009.

Collaborator, NASA Astrophysics (09-ATP09-0049), 2009-2012.

Co-I, Foundational Questions Institute (FQXi) Large Grant, 2006-2007.

Present PhD Students

Eloy de Jong (King's College London, 2019-Present)

Bo Guan Xe (King's College London, 2019-Present)

Matthew Elley (King's College London, 2018-Present)

Liina Jukko (with Dr David J.E. Marsh) (King's College London, 2021-Present)

Past PhD Students

Josu Aurrekoetxea (King's College London, 2017-2021), Beecroft Fellow and Extraordinary Fellow at Queen College, Oxford

Oliver Denton-Turner (King's College London, 2013-2021)

Thomas Helfer (King's College London, 2015-2019, Postdoctoral Researcher at John Hopkins University)

James Widdicoombe *née* Cook (King's College London, 2015-2019, Working in Data Science)

Katherine Clough (King's College London, 2013-2017, Rutherford Fellow, Proleptic Lecturer at Queen Mary University College).

Simon Su (with Paul Shellard, Cambridge University, 2011-2015, working in Finance)

Tai Jun Chen (Cambridge University, 2010-2014, Senior Lecturer at Liverpool-Xiantong University)

Scientific Leadership

Founder, `GRCHOMBO` Code Collaboration (www.grchombo.org), 2012 – Present

Executive Board, COSMOS High Performance Computing Consortium, 2012 – Present.

Member, LISA Waveform Working Group, 2019 – Present.

Teaching

Lecturing

- Cambridge Math Tripos Part III Advanced Cosmology (Masters level, 2011 and 2012)
- Cambridge Math Tripos Part IB Quantum Mechanics (2nd year, 2012 and 2013)
- Symmetry in Physics (2nd year, 2013-2017, 2021-2022)
- General Relativity (3rd year, 2016-2018)
- Statistical Mechanics (3rd year, 2018-2020)

Education Development

- Developed *Concepts in Theoretical Physics* for first year students, 2020-2022
- Syllabus Development and Programme Lead for *Bsc in Physics, Astrophysics and Cosmology*, 2016 – Present
- Virtual Reality Astro-Lab (funded by Perren Fund), 2019 – Present

Awards

- King's College London Faculty Teaching Excellence Award (2015)
- Nominated for the Faculty Teaching Excellence Award (2012-2020)

Admin and Service

Tutorships

- TPPC Postgraduate Research Tutor (2017 - present)
- Undergraduate Admissions Tutor (2015 - 2017)

Committees

- Faculty Infrastructure Committee, 2021 - Present)

Scientific Publications

Eloy de Jong, Josu C. Aurrekoetxea, **Eugene A. Lim**.
Primordial black hole formation with full numerical relativity
arXiv:2109.04896 (2021)

Oliver Denton-Turner, **Eugene A. Lim**.
Weak lensing "post-Born" effects are equivalent to pure lens-lens couplings
arXiv:2109.04774 (2021)

Thomas Helfer, Ulrich Sperhake, Robin Croft, Miren Radia, Bo-Xuan Ge, **Eugene A. Lim**.
Malaise and remedy of binary boson-star initial data
arXiv:2108.11995 (2021)

Peter Adshead, Niayesh Afshordi, Emanuela Dimastrogiovanni, Matteo Fasiello,**Eugene A. Lim**.
Multimessenger Cosmology: correlating CMB and SGWB measurements Phys.Rev.D 103 (2021) 2, 023532 , arXiv:2004.06619 (2020)

Josu C. Aurrekoetxea, Thomas Helfer, **Eugene A. Lim**.
Coherent Gravitational Waveforms and Memory from Cosmic String Loops Class.Quant.Grav. 37 (2020) 20, 204001 arXiv:2002.05177 (2020)

Josu C. Aurrekoetxea, Katy Clough, Raphael Flauger, **Eugene A. Lim**.
The Effects of Potential Shape on Inhomogenous Inflation JCAP 05 (2020) 030 arXiv:1910.12547 (2019)

James Y. Widdicombe, Thomas Helfer, **Eugene A. Lim**.
Black hole formation in relativistic Oscillaton collisions JCAP 01 (2020) 027 arXiv:1910.01950 (2019)

Sebastian Golat, **Eugene A. Lim**, Francisco J. Rodriguez-Fortuno.
Evanescent Gravitational Waves Phys.Rev.D 101 (2020) 8, 084046 arXiv:1903.09690 (2019)

Thomas Helfer, Josu C. Aurrekoetxea, **Eugene A. Lim**
Cosmic String Loop Collapse in Full General Relativity Phys.Rev. D99 (2019) no.10, 104028
arXiv:1808.06678 (2019)

James Y. Widdicombe, Thomas Helfer, David J.E. Marsh , **Eugene A. Lim** *Formation of Relativistic Axion Stars JCAP 1810 (2018) no.10, 005* arXiv:1806.09367 (2018)

Thomas Helfer, **Eugene A. Lim**, Marcos A.G. Garcia, Mustafa A. Amin
Gravitational Wave Emission from Collisions of Compact Scalar Solitons Phys.Rev. D99 (2019) no.4, 044046 arXiv:1802.06733 (2018)

Katy Clough, Raphael Flauger, **Eugene A. Lim**
Robustness of Inflation to Large Tensor Perturbations JCAP 1805 (2018) no.05, 065 arXiv:1712.07352 (2017)

Thomas Helfer, David J. E. Marsh, Katy Clough, Malcolm Fairbairn, **Eugene A. Lim** , Ricardo Becerril
Black hole formation from axion stars JCAP 1703 (2017) no.03, 055 arXiv: 1609.04724 (gr-qc) (2016)

Katy Clough, **Eugene A. Lim**, Brandon S. DiNunno, Willy Fischler, Raphael Flauger, Sonia Paban
Robustness of Inflation to Inhomogeneous Initial Conditions JCAP 1709 (2017) no.09, 025
arXiv:1608.04408

Katy Clough and **Eugene A. Lim**
Critical Phenomena in Non-spherically Symmetric Scalar Bubble Collapse arXiv:1602.02568 (gr-qc) (2016)

Katy Clough, Pau Figueras, Hal Finkel, Markus Kunesch, **Eugene A. Lim**, Saran Tunyasuvunakoola
GRChombo : Numerical Relativity with Adaptive Mesh Refinement Class.Quant.Grav. 32 (2015) 24, 245011 arXiv:1503.03436 (gr-qc) (2015)

Diego Blas, **Eugene A. Lim**
Phenomenology of theories of gravity without Lorentz invariance: the preferred frame case
Int.J.Mod.Phys. D23 (2015) 13, 1443009 arXiv:1412.4828 (gr-qc) (2015)

Eugene A. Lim
The Quantum Information of Cosmological Correlations
Phys.Rev. D91 (2015) 8, 083522 arXiv:1410.5508 (hep-th) (2014)

S.-C. Su, **Eugene A. Lim**
Formulating Weak Lensing from the Boltzmann Equation and Application to Lens-lens Couplings
Phys.Rev. D89 (2014) 123006 arXiv:1401.5737 (astro-ph.CO) (2014)

Tai-jun Chen, **Eugene A. Lim**
Stabilization of Linear Higher Derivative Gravity with Constraints
JCAP 1405 (2014) 010 arXiv:1311.3189 (hep-th) (2014)

Mustafa Amin, **Eugene A. Lim**, I-Sheng Yang
A Clash of Kinks: Phase shifts in colliding non-integrable solitons
Phys.Rev.Lett. 111 (2013) 22, 224101 arXiv:1308.0605 (astro-ph.CO) (2013)

Mustafa Amin, **Eugene A. Lim**, I-Sheng Yang
A scattering theory of ultra-relativistic solitons
Phys.Rev. D88 (2013) 10, 105024 arXiv:1308.0606 (astro-ph.CO) (2013)

Wenjuan Fang, Adam Becker, Dragan Huterer, **Eugene A. Lim**
Joint Minkowski Functionals and Bispectrum Constraints on Non-Gaussianity in the CMB.
Phys.Rev. D88 (2013) 4, 041302 arXiv:1303.4381 (astro-ph.CO) (2013)

S.-C. Su, **Eugene A. Lim** , E.P.S. Shellard
CMB Bispectrum from Non-linear Effects during Recombination.
Phys. Rev. D90 (2014) 023004 arXiv:1212.6968 (astro-ph.CO) (2012)

Tai-jun Chen, Matteo Fasiello, **Eugene A. Lim**, Andrew J. Tolley
Higher derivative theories with constraints: Exorcising Ostrogradski's Ghost.
JCAP 1302 (2013) 042 arXiv:1209.0583 (hep-th) (2012)

Peter Adshead, Cora Dvorkin, Wayne Hu, **Eugene A. Lim**
Non-Gaussianity from Step Features in the Inflationary Potential.
Phys.Rev. D85 (2012) 023531 arXiv:1110.3050 (astro-ph.CO) (2011)

Jan M. Kratochvil, **Eugene A. Lim**, Sheng Wang, Zoltan Haiman, Morgan May, Kevin Huffenberger
Probing Cosmology with Weak Lensing Minkowski Functionals.
Accepted for publication by PRD arXiv:1109.6334 (astro-ph.CO) (2011)

Xinyuan Yang, Jan M. Kratochvil, Sheng Wang, **Eugene A. Lim**, Zoltan Haiman and Morgan May
Cosmological information in weak lensing peaks
Phys.Rev.D84, 043529, 2011 arXiv:1109.6333 (astro-ph.CO) (2011)

Eugene A. Lim and Dennis Simon
Can we detect Hot or Cold spots in the CMB with Minkowski Functionals?
JCAP 1201 (2012) 048 arxiv: 1103.4300 (astro-ph.CO) (2011)

Anne-Christine Davis, **Eugene A. Lim**, Jeremy Sakstein, and Douglas Shaw
Modified Gravity Makes Galaxies Brighter.
Accepted for publication by PRD arxiv: 1102.5278 (astro-ph.CO) (2011)

Pontus Ahlqvist, Brian R. Greene, David Kagan, **Eugene A. Lim**, Saswat Sarangi, I-Sheng Yang
Conifolds and Tunneling in the String Landscape
JHEP 1103:119,2011. arXiv:1011.6588 (hep-th) (2010)

John T. Giblin, Jr, Lam Hui, **Eugene A. Lim**, and I-Sheng Yang
How to Run Through Walls: Dynamics of Bubble and Soliton Collisions
Phys.Rev.D82, 045019, 2010 arXiv: 1005.3493 (hep-th) (2010)

Eugene A. Lim, Ignacy Sawicki and Alexander Vikman
Dust of Dark Energy
JCAP 1005:012 (2010) arXiv:1003.5751 (astro-ph.CO) (2010)

Peter Adshead and **Eugene A. Lim**
3-pt Statistics of Cosmological Stochastic Gravitational Waves
Phys.Rev.D82, 024023, 2010 arXiv: 0912.1615 (astro-ph.CO) (2009)

Richard Easther, John T. Giblin, Lam Hui, and **Eugene A. Lim**
A New Mechanism for Bubble Nucleation: Classical Transitions
Phys.Rev.D80:123519,2009 arXiv: 0907.3234 (hep-th) (2009)

Peter Adshead, Richard Easther and **Eugene A. Lim**
The 'in-in' Formalism and Cosmological Perturbations
Phys.Rev.D80:083521,2009; 0904.4207 (hep-th) (2009)

Peter Adshead, Richard Easther and **Eugene A. Lim**
Cosmology With Many Light Scalar Fields: Stochastic Inflation and Loop Corrections
Phys.Rev.D79:063504,2009; 0809.4008 (hep-th) (2008)

Richard Easther, John T. Giblin, **Eugene A. Lim**, Wan-Il Park and Ewan D. Stewart
Thermal Inflation and the Gravitational Wave Background
JCAP 0805:013 (2008); 0801.4197 (astro-ph) (2008)

Xingang Chen, Richard Easther and **Eugene A. Lim**
Generation and Characterization of Large Non-Gaussianities in Single Field Inflation
JCAP 0805:013 (2008); 0801.3295 (astro-ph) (2008)

Richard Easther, John T. Giblin and **Eugene A. Lim**
Gravitational Waves From the End of Inflation: Computational Strategies
Phys. Rev. D77 (2008) 103519; 0712.2991 (astro-ph) (2008)

Richard Easther and **Eugene A. Lim**
The Eternal Sunshine of the Spotless Mind
JCAP 0801:012 (2008); 0707.2583 (hep-th) (2007)

Richard Easther, John T. Giblin and **Eugene A. Lim**
Gravitational Wave Production At The End of Inflation
Phys. Rev. Lett. 99 (2007) 221301; astro-ph/0612294 (2006)

Xingang Chen, Richard Easther and **Eugene A. Lim**
Large Non-Gaussianities in Single Field Inflation
JCAP 0706:023 (2007); astro-ph/0611645 (2006)

Richard Easther and **Eugene A. Lim**
Stochastic Gravitational Wave Production after Inflation,
JCAP 0604:010 (2006); astro-ph/0601617 (2006)

Richard Easther, Matthew R. Martin and **Eugene A. Lim**
Counting Pockets with World Lines in Eternal Inflation,
JCAP 0603:016 (2006); astro-ph/0511233 (2005)

Cristian Armendariz-Picon and **Eugene A. Lim**
Haloes of k-essence,
JCAP 0508:007 (2005); astro-ph/0505207 (2005)

Eugene A. Lim
Can We See Lorentz-Violating Vector Fields In the CMB?,
Phys.Rev. D71 (2004) 063504; astro-ph/0407437 (2004)

Sean M. Carroll and **Eugene A. Lim**
Lorentz-Violating Vector Fields Slow the Universe Down,
Phys.Rev. D70 (2004) 123525; hep-th/0407149 (2004).

Takemi Okamoto and **Eugene A. Lim**
Constraining Cut-off Physics in the Cosmic Microwave Background,
Phys.Rev. D69 (2004) 083519; astro-ph/0312284 (2003)

Cristian Armendariz-Picon and **Eugene A. Lim**
Scale Invariance Without Inflation?,
JCAP 0312:002 (2003); astro-ph/0307101 (2003)

Cristian Armendariz-Picon and **Eugene A. Lim**
Vacuum Choices and the Predictions of Inflation,
JCAP 0312:006 (2003); hep-th/0303103 (2003)

Popular Science Publications

Why is it so hard to unify Quantum Mechanics and General Relativity?
New Scientist, 100 Years of General Relativity Special Issue, 2016.

Pieces of Gravity
Contribution to *Why the Universe Exists?*, *ed.* Stephen Battersby, 2017.

Colloquia and Plenary talks

HEP Colloquium, Institute for Mathematics, Astrophysics and Particle Physics, Radboud University, 2020.

DAMTP HEP-GR Colloquium, University of Cambridge, 2019.

GRAPPA Colloquium, University of Amsterdam, 2019.

Astronomy Colloquium, University of Durham, 2019.

Physics Colloquium, Portsmouth, 2019.

Computational Methods Workshop, Institute Henri Poincare, 2018.

BENASQUE Numerical Relativity beyond General Relativity, Benasque 2018.

Connections between Cosmology, Strong Gravity and Quantum Theory, Germany 2017.

Frontiers in Cosmology 2016, Perimeter Institute, Canada 2016.

Faculty of Natural and Mathematical Sciences Colloquim, King's College London, London 2016.

Physics of the Early Universe, Tainan University, Taiwan 2015.

DiRAC Day, Cambridge, 2015.

COSPA2014, University of Auckland, New Zealand 2014.

Status of Inflation 2014, Kavli Institute of Cosmology, Chicago 2014.

Unsolved Problems in Astrophysics, Budapest 2014.

Itykzon 17 : Heart of Darkness, Saclay, Paris 2012.

String Theory and Precision Cosmology, Cornell, 2011.

Physics Colloquium, Leiden University, 2010.

Physics Colloquium, University of Oregon, 2010.

Physics Colloquium, Kenyon College, 2009.

Fingerprints of Early Universe Workshop, Overview Talk on non-Gaussianities "$\langle\zeta\zeta\zeta\rangle \neq 0$", Aspen, 2009

Physics Colloquium, Syracuse, 2009

Origins and Observations of Primordial Non-Gaussianity Workshop, Perimeter Institute, 2008

Conference on non-Gaussianities, University of Chicago, 2007

Colloquium, National Astronomical Observatories, Chinese Academy of Sciences, Beijing, 2007

Physics Colloquium, University of North Carolina (Chapel Hill), 2007

Talks and Seminars

2021

- Theory Seminar, Sheffield
- UKQCD Kick-off Meeting

2020

- Theory Seminar, CEICO (Prague)
- LCDM Meeting, London.
- Theory Seminar, Imperial College London.

2019

- London Strong Gravity Meeting, London.
- GRAPPA Seminar, University of Amsterdam.
- Particle Physics Seminar, University of Sussex.

2018

- SLAP Meeting, London.
- Cosmic Topological Defects Workshop, Leiden.
- Peyresque 23.

2017

- DiRAC Shared Memory Processor Discussion Meeting, Cambridge.
- London Cosmology Dark Matter Meeting, Royal Astronomical Society.
- Cosmology Seminar, DAMTP, Cambridge University.
- Albert Einstein Institute Gravity Seminar, 2017

2016

- Physics Seminar, Utrecht University.
- Cosmology Seminar, Amsterdam University
- DiRAC Day Computational Physics Workshop, Edinburgh
- Cambridge Computational Physics Workshop, Cambridge

2015

- IAP Cosmology Seminar, Paris
- Southampton Gravity Seminar, University of Southampton
- EPFL Theory Seminar, Lausanne, Switzerland
- Cosmology Seminar, University of Nottingham
- Cosmoloy Seminar, Oxford University
- Peyresq 20, Peyresq, France

2014

- Columbia University Theory Seminar, New York City
- Cosmology Seminar, Perimeter Institute
- Theoretical Physics Seminar, Queen Mary University London
- London Cosmology Discussion Meeting, London
- Theory Seminar, Columbia University
- LiffTAP Seminar, King's College London

2013

- DAMTP Gravity Seminar, Cambridge
- Physics Department Seminar, University of Sussex
- Theory Seminar, Columbia University
- Maxwell Lecture, King's College London
- London Cosmology Discussion Meeting, London
- Peyresq 18, Peyresq, France

2012

- Portsmouth Cosmology Seminar, Portsmouth
- Cosmology Seminar, CERN

2011

- Astrophysics Seminar, Oxford University
- IR Modifications of Gravity Workshop, Trieste
- Astrophysics Seminar, University of Sussex
- SISSA Astrophysics Seminar, Trieste
- ICTP Theory Seminar, Trieste
- KICP Cosmology Seminar, University of Chicago
- Michigan non-Gaussian Workshop, University of Michigan
- Stockholm University Oskar Klein Center Astrophysics Seminar, Stockholm
- Stockholm University Oskar Klein Center Gravity Seminar, Stockholm
- High Energy Physics Seminar, University of Nottingham

2010

- Theory Seminar, University of Oregon
- ISCAP Seminar, Columbia University
- Theory Seminar, University of Pennsylvania
- Theory Seminar, City College of New York
- Seminar, Arizona State University
- Cosmology Seminar, Cambridge University
- Gravity Seminar, Imperial College London
- String Theory Seminar, University of Amsterdam
- Cosmology Seminar, University of Portsmouth

2009

- Particle Physics Seminar, Syracuse University
- Gravity Seminar, University of Maryland
- Workshop on Observables of Fundamental Physics, KITP(C), Beijing

- Workshop on Effective Field Theory, Perimeter Institute
- Gravity Group Seminar, Princeton
- HEP Seminar, Cornell

2008

- Theory Seminar, University of Texas at Austin
- High Energy Physics Seminar, University of Michigan
- Theory Seminar, New York University

2007

- Theory Seminar, University of North Carolina (Chapel Hill)
- ISCAP Seminar, Columbia University
- Joint MIT/Harvard/Tufts Cosmology Seminar, MIT
- HEP Seminar, Cornell University
- String and Cosmology workshop at KITP(C), Beijing

2006

- High Energy Physics/Cosmology Seminar, Syracuse University
- High Energy Physics Seminar, Caltech
- Cosmo 06, UC Davis
- KICP Friday Seminar, KICP, University of Chicago
- Astrophysics Friday Seminar, University of Pittsburgh
- Theoretical Astrophysics Seminar, Fermilab

2005

- Theoretical Physics Seminar, Los Alamos National Laboratory
- WIDG Group Seminar, Yale University
- Yale Center for Astronomy and Astrophysics seminar, Yale University
- Kavli Inaugural Symposium, University of Chicago

2004

- ISCAP Seminar, Columbia University
- Thesis Defense, University of Chicago
- CPT-Lorentz Symmetry 2004, Indiana University
- Particle Physics Seminar, Yale University
- Joint MIT-Harvard-Tufts Cosmology Seminar, Tufts University

2003

- de Sitter Days Workshop, Fermilab
- Carnegie Mellon University Theoretical HEP Seminar
- Case Western Reserve University Particle Astrophysics Seminar

2002

- 12th Midwest Relativity Meeting, University of Chicago

Public and Outreach Talks

- **N**ew Scientist Instant Expert Live! London, 2018
- **P**int of Science, London, 2018
- **W**histon Society Lecture, Clare College, 2017.
- **A**LSO Ideas Festival 2016

- ◇ **N**ew Scientist Instant Expert Live! London, 2016
- ◇ **N**ew Scientist Instant Expert Live! London, 2015
- ◇ **S**tory-Collider Talk, *Calculus in Haiti*, London 2014
- ◇ **G**oodenough College Public Lecture, *Love and Quantum Mechanics*, London 2013.
- ◇ **I**NURED Summer School Haiti, *Our Universe Today*, Port-au-Prince Haiti 2012.

Refereeing and Examining

Journal Referee

- Physical Review Letters
- Journal of Astroparticle Physics
- Astrophysical Journal
- Classical and Quantum Gravity
- Physical Review D
- Journal of Cosmology and Astroparticle Physics
- Physics Letters B

Grant Referee

- NWO Netherlands Organisation for Scientific Research Vici Grants, The Netherlands
- Royal Society University Research Fellowships, United Kingdom
- Science Techology and Facilities Council, United Kingdom
- FONDECYT-Chile Science and Engineering Council, Chile
- National Research Foundation (NRF), South Africa
- Israel Science Foundation BIKURA programme, Israel

Book Referee

- CRC Press
- Oxford University Press

PhD Examining

- Dr. Camilla Schelpe (2011) PhD DAMTP Cambridge, Advisor Prof. Anne Davis
- Dr. Sheng Li (2013) PhD Sussex University, Advisor Prof. Andrew Liddle
- Dr. Jon Emery (2013) PhD Portmouth University, Advisor Prof. David Wands
- Dr. Daniela Saadah (2016) PhD UCL, Advisor Dr. Andrew Pontzen
- Dr. Paul Tognarelli (2017) PhD Nottingham, Advisor Dr. Paul Saffin
- Dr. Zachary Kenton (2017) PhD Queen Mary University London, Advisor Prof. Steve Thomas
- Dr. Elizabeth Gould (2017) PhD Waterloo University, Advisor Prof. Niayesh Ashfordi
- Dr. Constantino Pacilio (2018) PhD SISSA, Advisor Prof. Stefano Liberati
- Dr. Oscar Ramos (2018) PhD Sorbonne University, Advisor Dr Enrico Barausse
- Dr. Daniel Cutting (2020) PhD University of Sussex, Advisor Prof Mark Hindmarsh
- Dr. Amelia Drew (2021) PhD University of Cambridge, Advisor Prof Paul Shellard
- Dr. Ben Thrussel (2021) PhD Nottingham, Advisor Prof. Clare Burrage

Other Activities and Outreach

Organizer

- Organizer, Workshop on Strong Gravity and Fundamental Physics, 2020.
- Organizer, London Strong Gravity Meeting (ongoing)
- Organizer, CLASS/CMB Lectures, King's College London (2014)

- Chair, Numerical Cosmology 2012, Cambridge University (2012)
- Organizer, Workshop on Lorentz Violation, Cambridge University (2011)
- Organizer, PASCOS 2011, Cambridge University (2011)
- Chair, Workshop on "The Measure Problem", Columbia University (2010)
- ISCAP Seminar, Columbia University (2007-2009)
- Chair, Yale-Columbia Joint Workshop on "Bubble Collisions", Columbia University (2009)

Invited Membership

- Foundational Questions Institute FQXi

Humanitarian Activities

- Volunteered to teach in University of Fondwa during the Haitian 2010 Earthquake recovery.
- Taught at INURED Workshop for Haiti Universities, 2011.