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Current Positions

September 2019 - Present: Professor of Theoretical Physics
Imperial College London, Department of Physics, UK

January 2017 - Present: Adjunct Professor
Case Western Reserve University, Department of Physics, USA

January 2018 - December 2020: Visiting Fellow
Perimeter Institute for Theoretical Physics, Canada

Previous Positions

October 2016 - August 2019 Reader (Associate Professor) in Theoretical Physics
Imperial College London, Department of Physics, UK

July 2015 - September 2016: Associate Professor (Tenured)
Case Western Reserve University, Department of Physics, USA

2010 - June 2015: Assistant Professor
Case Western Reserve University, Department of Physics, USA

2006 - 2010: Distinguished Research Fellow
Perimeter Institute for Theoretical Physics, Canada

2003 - 2006: Postdoctoral Research Associate
Princeton University, Department of Physics, USA,
Postdoctoral Advisor: Prof. Paul Steinhardt.

Education

1999 - 2003: Cambridge University, Gonville and Caius College.
PhD. in Theoretical Cosmology, Department of Applied Mathematics and Theoretical Physics.
Advisor: Prof. Neil Turok. Thesis title ‘From big-crunch to big-bang’.

1995 - 1999: Oxford University, Jesus College. MPhys (Hons) Physics.
Degree result: 1st class Honours. Highest mark in University.
Final year specialization: Theoretical Physics, Condensed Matter Physics, Fluid dynamics.

Grants

- **PI** for Leverhulme Trust Visiting Professorship 2019-2020, £12,000, (Co-Pi Prof. Ana Achucarro, Leiden University).
- **PI** for Royal Society International Exchange Award 2019-2020, £5,950, (Co-Pi Prof. Ana Achucarro, Leiden University).
- **Co-PI** for STFC Consolidated Grant “M-Theory, Cosmology and Quantum Field Theory”, £1.9 million, FY17-20.

- **PI** for Royal Society Wolfson Research Merit Award 2016-2021, £100,000, FY16-21.
- **PI** for Office of Science of the Department of Energy “**Early Career Research Program Award**”, “Exploring the Fundamental Origin of Cosmic Acceleration”, \$750,000, FY13-17.
- **Co-PI** for Department of Energy Department grant: “Theoretical Particle Physics at the Frontiers”, \$863,000, FY13-15, Withdrew due to receiving DOE Early Career Award.
- **PI** for individual Department of Energy grant: “New Cosmologies on the Horizon”, DE-FG02-12ER41810, \$75,000, FY12-13.

Awards, Prizes and Fellowships

- **Visiting Fellow**, Perimeter Institute for Theoretical Physics (2018-2020).
- Nominee for **New Horizons in Physics Prize 2019** (together with Prof. Claudia de Rham), nominated by office of Prof. Alice Gast, President of Imperial College London.
- Nominee for Imperial **Student Academic Choice Awards 2019** for Best Teaching for Undergraduates.
- Nominee for Imperial **Student Academic Choice Awards 2017** for Best Tutoring.
- **Royal Society Wolfson Research Merit Award** (2016-2021).
- **Early Career Research Program Award**, Office of Science of the Department of Energy (2013).
- 2nd Prize in **Gravity Research Foundation essay competition** (2013); “What Is the Shape of the Initial State?” by Nishant Agarwal, R. Holman, and Andrew J. Tolley.
- ‘**Honorable Mention**’ at the Gravity Research Foundation essay competition (2014); “How General Relativity and Lorentz Covariance Arise from the Spatially Covariant Effective Field Theory of the Transverse, Traceless Graviton” by J. Khoury, G. E. J. Miller and Andrew J. Tolley.
- **Distinguished Research Fellow**, Perimeter Institute for Theoretical Physics (2007).
- **Smith-Knight Prize**, for Essay on Current Research, Oxford University (2000).
- **Scott Prize**, for Highest Mark Awarded in Final Examination at Oxford University (1999).
- **Scholar**, Jesus College, Oxford University (1996 - 1999).

Involvement in Strategic Planning and Long Term Vision

- Member of MSc review committee for ‘Quantum Fields and Fundamental Forces’ at Imperial. (2018)
- Member of strategic planning team at CWRU. (2010–2016)
- Chair of Particle & Astrophysics Theory faculty hire committee, CWRU, 2016. This search led to the appointment of two tenure-track faculty, and one non-tenured visiting Professor.
- Member of Particle & Astrophysics Theory and Experimental faculty hire committee, CWRU (2014–2016), leading in particular to the hire of the Pytte Chair.
- Panel Member for FY2014 **Department of Energy** Early Career Research Awards.
- Contributor to SnowMass CF-5 (Dark Energy and CMB) vision panel, “Dark Energy: Why go further?”, leading to white paper “Novel Probes of Gravity and Dark Energy” arXiv:1309.5389. Contributed presentations, panel discussions at SnowMass @ Slac (2013) and Snowmass on the Mississippi (2013). Opening speaker at Fermilab vision workshop ‘Laboratory Tests of Dark Energy’ (2011).
- Contributed to Ohio Board of Regents (OBR) review of the CWRU Department of Physics PhD Program. (2016)
- Member of the Cosmology Postdoc Recruitment at Perimeter Institute. (2007-2009)

- Member of Long Term Visitor Committee at Perimeter Institute. (2008-2009)
- Member of *John Brodie Memorial Prize* committee. (2009-2010)

Advisory Board & Grant Reviewer

- External reviewer for FY2020 **Programma per Giovani Ricercatori - Rita Levi Montalcini**.
- External reviewer for FY2019 **ERC Advanced Grant 2019**.
- Editorial Board Member, **Proceedings of the Royal Society A** (2018 to present).
- Editorial Board Member, **Universe** (MDPI) (2018 to present).
- External reviewer for FY2020 **Marsden Fund Council, Royal Society, New Zealand**.
- External reviewer for FY2018, FY2020, FY2020 **Royal Society University Research Fellowships**.
- External reviewer for FY2018 **UK India Education and Research Initiative programme**.
- External reviewer for FY2017 **Science and Technology Facilities Council astronomy grants panel** proposals.
- External reviewer for FY2017 FONDECYT **Chilean National Science and Technology Commission** proposals.
- Scientific reviewer for FY2014, FY2015, FY2016 **National Science Foundation** ‘High Energy Physics and Cosmology’ proposals.
- Panel Member for FY2014 **Department of Energy** Early Career Research Awards.
- External reviewer for FY2014 **Department of Energy** Early Career Research Awards.
- External evaluator for FY2014 International Fellowship Mobility Programme for Experienced Researchers in Croatia **NEWFELPRO**
- Member of Advisory Board for ‘Workshop on Cosmic Acceleration’, August 24, 2012 - August 26, 2012. Held at Carnegie Mellon University.

Professional Service

- Associate Member, **LISA consortium**: Fundamental Physics Working Group. (2018-present)
- Associate Member, **LISA consortium**: Cosmology Working Group. (2019-present)
- Regular referee for Physical Review Letters, Nuclear Physics **B**, Physics Letters **B**, Physical Review **D**, Journal of Cosmology and Astroparticle Physics, Journal of High Energy Physics, Classical and Quantum Gravity, Astroparticle Physics, International Journal of Modern Physics **D**, Foundations of Physics, General Relativity and Gravitation, Europhysics Letters, Galaxies, Journal of Physics Communications, European Physics Journal C, Russian Gravitational Society.
- Selected as one of *most valued reviewers of 2018*, Physics Letters **B**.
- Chair of Library Committee at Perimeter Institute. (2007-2008)
Oversaw expansion and restructuring of library.
- Organizer of ‘String Cosmology Seminar’ series in Princeton/IAS. (2003-2005) and ‘Gravity Group’ talks (Princeton physics department). (2004-2005)
- Organizer of Student Seminars (Cambridge University). (2000-2001)

University Service

Imperial College

- **Physics Graduate Student Committee representative** for Imperial, Theoretical Physics October 2018-present.
- **Chair of PhD admissions committee**, Imperial Theoretical Physics group October 2018-present.
- Contributed to *Stakeholder engagement session*, lead by Vice Provost Research Nick Jennings, charged with advising the stakeholders on the College's future research estates needs and priorities (Jan 2017).
- MSc Dissertation and MSci Project Marking 2016-2018.
- Member of **PhD admissions committee**, Imperial Theoretical Physics group 2016-2018.
- Completed LDC Recruitment and Selection training course - 10th January, 2017.

Case Western Reserve

- Member of **Graduate Recruiting and Admissions Committee** at CWRU. (2010-2015)
- Member of **Graduate Program Committee** at CWRU. (2015)
- Member of **Pytte Chair (Particle Astrophysics Experimental Faculty) search** at CWRU. (2015)
- Chair of **Particle Astrophysics Theory Faculty search** at CWRU. (2015)
- Member of **Undergraduate Recruitment Committee** at CWRU. (2015)
- Co-Organizer of **Particle Astrophysics Seminars** at CWRU. (2010-2015)

Workshops/Summer Schools organized

- Organizer of **Gravity Workshop** held at Case Western Reserve University (May 2011).
- Lead organizer of five-week 'Holographic Cosmology' workshop and four day 'Holographic Cosmology' conference held at Perimeter Institute (June-July 2009).
- Organizer of Perimeter Institute Summer School: 'Exploring the Cosmological Frontiers', held at Perimeter Institute (June-July 2009). With Prof. R. Myers and Prof. J. Khoury.
- Lead organizer of 'Effective Field Theory and Inflation' workshop held at Perimeter Institute (May 2009). With Prof. R. Holman and Prof. C. Burgess.
- Organizer of 'Effective Field Theory and Cosmology' workshop held at University of Michigan (March 7-11 2010). With Prof. Scott Watson, Prof. C. Burgess and Prof. Finn Larsen.
- Organizer of PI-CITA workshop (May 2009).
- Organizer of 'Cosmological Frontiers' workshop to be held at Perimeter Institute (June 14-17 2010).

Articles about Research in Popular Press

- <https://www.imperial.ac.uk/stories/turning-gravity-upside-down/>
- <https://www.theguardian.com/science/2020/jan/25/has-physicists-gravity-theory-solved-imposs>
- www.popularastronomi.se/wp-content/uploads/2013/03/2013_1_tyngdkraft.pdf
- bowlerhatscience.org/2016/02/01/could-gravity-have-mass/
- science.sciencemag.org/content/282/5386/25
- cggplus.com/2018/05/30/low-energy-think-positive/
- <https://www.insidescience.org/news/biggravity-hidden-gear-gravity>

Outreach

- Research Frontiers Talk for Imperial College Undergraduates, November 9th 2017.
- Outreach talk for Department of Physics, A-level Project Open Days, Imperial College Science and Engineering Open Days - June 2017.
- Public Talk at Origins Science Scholars, Cleveland, October 2015 - 'From Newtonian gravity to Einsteins theory of General Relativity'.
- Public Talk at Akron Physics Club, November 2014 - 'Cosmic Acceleration and Gravity'.
- Public Talk at Happy Dog, Cleveland USA - December 2012 - 'Why do we need the Higgs?'.
- Popular talk 'Black Holes and Holographic World', October 2013, as part of the Origins Science Scholars Program 'Beyond Newton and Einstein' at CWRU.
- Popular Talk 'Black Holes and Holography', Case Western Physics and Astronomy Club, October 2013.

Memberships

- MInstP, Member of the Institute of Physics (UK).
- Member of the American Physics Society.

Teaching & Mentoring

Mentoring

PhD students

- Current PhD advisor for **Arshia Momeni** Imperial 2018- present.
- Current PhD advisor for **Justinas Rumbutis** Imperial 2018- present.
- **Dr. Tate Deskins** CWRU 2014-2018, thesis title ‘Constraints on Massive Gravity: A numerical study of Galileons’.
- **Dr. Nicholas Ondo** Imperial College London 2012-2017, thesis title ‘Exotic Gauge Theories of Spin 2 Fields’.
- **Dr. Lucas Keltner** CWRU 2011-2015, thesis title ‘UV Properties of Galileons’.
- Unofficial co-mentoring of Dr. David Jacobs (2012-2014), PhD student of Prof. Glenn Starkmann (CWRU), Dr. Godfrey Miller (2009-2014), PhD student of Prof. Justin Khoury (UPenn), Dr. Andrew Matas (2012-2016), PhD student of Prof. Claudia de Rham (CWRU), Scott Melville (2016 to present), PhD student of Dr. Claudia de Rham (Imperial).

Postdoctoral

- Participant of the **Royal Society mentoring scheme**. Current mentor to **Dr. Adam Ingram**, Royal Society University Research Fellow, University of Oxford (2018 to present).
- Postdoctoral Mentor to **Dr. Shuang-Yong Zhou** CWRU and Imperial 2014-2017 during which time Zhou has received a 1000 Young Talent Award for position as full professor at University of Science and Technology of China.
- Postdoctoral Mentor to **Dr. Matteo Fasiello** CWRU 2011-2014. Followed by postdocs at Stanford University and University of Portsmouth.

Undergraduate/Masters

- BSc project advisor to **Callum Hunter** and **Josef Willsher** (Imperial) - ‘S-matrix Positivity’, Term 2 2019. BSc essay advisor to **Alexander Belcik** (Imperial) - ‘S-matrix Positivity’.
- MSc dissertation advisor for Imperial ‘Quantum Fields and Fundamental Forces’ MSc student, **Arshia Momeni**, Summer 2018.
- MSc dissertation advisor for Imperial ‘Quantum Fields and Fundamental Forces’ MSc student, **Nikoo Najafian**, Summer 2018.
- Masters project advisor to **Jonathan Crabbé** (Imperial occasional student, ENS Paris student), Spring 2018: ‘Well-posedness versus analytic UV completion’ (co-advisor Dr. C. de Rham).
- MSc Short Project advisor to **Oliver Bradley** (Imperial) - ‘S-matrix Bootstrap’ - 2017/2018.
- Personal Tutor to 11 Imperial College undergraduates 2016-2021.
- Personal Tutor to 4 Imperial College Masters students 2017-2018.
- Personal Tutor to 2 Imperial College Masters students 2016-2017.
- Academic Advisor for 8 CWRU undergraduates 2015-2016.
- Independent Study P329 - ‘Intro to Quantum Field Theory’ - **Robert Taylor** (CWRU undergraduate) - Fall 2013

- Special Topics Course P539- ‘Topology and Gauge Fields’ - **Nicholas Ondo** (PhD student) - Spring 2013
- Senior project advisor for **Jason Tabachnik** CWRU 2012/2013, “On the duality between fluid dynamics and gravity”, Jason received the Gates Cambridge Scholarship to study Part III in Cambridge. Jason also received SOURCE funding to conduct research with me during the summer 2012 on the same topic.
- Senior project co-advisor with Prof. de Rham (during maternity leave) for **Dane Pittock** CWRU 2012/2013.
- Undergraduate research project advisor to visiting foreign student **Israel Martinez** CWRU 2012, “Non-perturbative Calculation of the Propagator for an Effective Field Theory of a Goldstone Boson using the Schwinger-Dyson equation”.
- Senior project advisor for **Nicholas Ondo** CWRU 2011/2013, “Living on a Monopole”.
- Advisor for PI undergraduate summer student project to **Jennifer Lin** (May to August 2009), one published paper. Now postdoc at IAS, Princeton.

PhD examiner

- PhD Thesis committee chair, Dr. Tate Deskins. Thesis title: “Constraints on Massive Gravity: A numerical study of Galileons,” CWRU, (2018).
- PhD Thesis committee member, Dr. Andrew Matas. Thesis title: “Foundations of Massive Gravity,” CWRU, (2016).
- PhD Thesis examiner for Dr. James Scargill, University of Oxford (2016).
- PhD Thesis examiner for Dr. Ross Diener. Thesis title: “Standard Model Naturalness from Dark Vortices and Codimension 2 Braneworlds,” McMaster University (2015).
- PhD Thesis committee member, Dr. David Jacobs. Thesis title: “Casimir Localization,” CWRU, (2014).
- PhD Thesis committee chair, Dr. Lucas Keltner. Thesis title: “UV Properties of Galileons,” CWRU, (2015)
- PhD Thesis committee member, Dr. Scott Beck, CWRU (2014).
- PhD Thesis examiner for George Zahariade. Thesis Title: “Massive gravity and scalar fields with derivative self-interactions,” Laboratoire AstroParticule et Cosmologie graduate (2013).
- PhD Thesis examiner for Lorenzo Seri. Thesis Title: “Resolution of Singularities in Matrix Big-Bang models,” SISSA Italy, (2011).

Undergraduate examiner

- Honors thesis oral examiner for Evan Pease, Department of Physics, Kenyon College, (2011).

Teaching: Courses

2018-2019

- Lecturing undergraduate Year 3 Elective ‘Foundations of Quantum Mechanics’ - Spring 2019, at Imperial.
- Lecturing Quantum Fields and Fundamental Forces MSc course ‘Advanced Field Theory’ - Spring 2019, at Imperial.

2010-2018

- 4 Special Topics lectures ‘Effective Field Theories for Cosmology’, Quantum Fields and Fundamental Forces MSc course - Spring 2018, at Imperial.
- LECTURED Quantum Fields and Fundamental Forces MSc course ‘Advanced Field Theory’ - Spring 2018, at Imperial.
- 4 Special Topics lectures ‘Effective Field Theories for Cosmology’, Quantum Fields and Fundamental Forces MSc course - Spring 2017, at Imperial.
- Tutor, Year 1 ‘Mechanics’, ‘Matrices’, ‘Electricity and Magnetism’, ‘Relativity’ - 2016-2017, at Imperial.
- LECTURED P482, ‘Quantum Mechanics 2’ - Spring 2016, at CWRU.
- LECTURED P481, ‘Quantum Mechanics 1’ - Fall 2015, at CWRU.
- LECTURED P381/481, ‘Quantum Mechanics 1’ - Fall 2014, at CWRU.
- LECTURED P381/481, ‘Quantum Mechanics 1’ - Fall 2013, at CWRU.
- ‘Introduction to Quantum Field theory’ reading course - Fall 2013, at CWRU.
- LECTURED undergraduate class P332, ‘Introduction to Quantum Mechanics II’ - Spring 2013, at CWRU.
- Guest Lecturer for Phys 123 Introduction to Modern Physics, Fall 2012 at CWRU - LECTURED on the topic of ‘Einstein’s theory of General Relativity’
- LECTURED graduate class P591, ‘Gauge Field Theory’ - Fall 2012, at CWRU.
- LECTURED undergraduate class P332, ‘Introduction to Quantum Mechanics II’ - Spring 2012, at CWRU.
- Voluntarily LECTURED informal graduate class on ‘Quantum Field Theory’ - Spring 2012, at CWRU.
- LECTURED (under)graduate class P365/465, ‘General Relativity’ - Spring 2011, at CWRU.
- LECTURED graduate class P381/481, ‘Quantum Mechanics’ - Fall 2010, at CWRU.

Teaching: Summer Schools and external teaching

- Invited to give a 2 week course on ‘Topics in Massive Gravity’ as part of the Global Initiative of Academic Networks (GIAN), held at the Centre for Theoretical Physics, Jamia Millia University, New Delhi (2019).
- Invited Lecturer at ‘Dark Energy and Modified-Gravity cosmologies: DARKMOD (September 2017)’, Institut de Physique Thorique, CEA Saclay.
- Invited Lecturer at ‘Gravity and Beyond: 100 years after Einstein’s theory’, National Taiwan University (July 6-10 2015).
- Invited Lecturer for ‘X Mexican School on Gravitation’ (December 2014): “Modified gravity and its Predictions”.
- Invited Lecturer for **7th Aegean Summer School** in Paros island (Greece), “Beyond Einstein’s Theory of Gravity”, September 2013.
- Invited Lecturer for **Troisième Cycle de la Physique en Suisse Romande** - *Dark energy and Dark gravity*. (Fall 2011) <http://www.cuso.ch/3e-cycle/physique.html>
- Invited Lecturer for **ICTP Summer School in Cosmology**- *Dark energy and Dark gravity*. (July 2010)
- Lecturer for **Perimeter Scholars International (PSI)** Masters course - *Explorations in Cosmology*. (March - April 2011) www.perimeterscholars.org/psi-info.html

- Lecturer for **Perimeter Scholars International (PSI)** Masters course - *Explorations in Cosmology*. (March - April 2010) www.perimeterscholars.org/psi-info.html
- Invited Lecturer for **CMB/LSS school, Pune India**. Lectured on non-minimal models of inflation. (August 2008)
- Invited Lecturer for **Nordita, Stockholm**. Focused summer school on de Sitter cosmology. Contributed over 15 hours of lectures on the topic of dark energy and the cosmological constant. (August 2008)
- **Perimeter Institute**. Lectured the cosmology component of a credit course 'New Horizons in Fundamental Physics' for University of Waterloo and Guelph final year physics undergraduates, introducing them to current research topics in cosmology. (2008)
- **Princeton University**. Preceptor for Phys 102. Involved lecturing, setting quizzes/examinations. (2005)
- **Cambridge University**. Supervisor for undergraduate mathematics courses, Part IA, IB and II. (1999-2002)
- Private tutor for A-level Mathematics and Chemistry (1996-1998) via *Jacari* scheme, and US Princeton High School Mathematics. (2003)

Invited Talks

- Rencontres théoriciennes, Institut Henri Poincaré, Paris (January 2020): ‘ $T\bar{T}$ deformations, Massive Gravity and Non-critical Strings’.
- Perimeter Institute, Canada (November 2019): ‘ $T\bar{T}$ deformations, Massive Gravity and Non-critical Strings’. (String Group Seminar)
- Perimeter Institute, Canada (November 2019): ‘*SpeedofGravity*’. (Cosmology Group Seminar)
- University of Pennsylvania, Philadelphia (November 2019): ‘ $T\bar{T}$ deformations, Massive Gravity and Non-critical Strings’.
- University of Science and Technology of China, Hefei (December 2018): ‘Massive Gravity’. (**Colloquium**)
- University of Science and Technology of China, Hefei (December 2018): ‘Effective Fields Theories of Spin 2’. (Seminar)
- Nottingham University (October 2018): ‘Positivity Bounds in Effective Field Theories of Gravity’.
- Queen Mary, London (May 2018): ‘Positivity Bounds in Effective Field Theories of Gravity’.
- Niels Bohr Institute, Copenhagen (March 2018): ‘Positivity Bounds in Effective Field Theories of Gravity’.
- **Keynote Speaker** at Dutch theoretical cosmology meeting, held at University of Groningen, (Jan 2018): ‘Positivity Bounds in Effective Field Theories of Gravity’.
- Imperial College theory group seminar (Oct 2017): ‘Positivity Bounds in Effective Field Theories of Gravity’.
- Dark Energy and Modified-Gravity cosmologies conference: DARKMOD (September 2017), Institut de Physique Thorique, CEA Saclay: ‘Positivity Bounds in Effective Field Theories of Gravity’.
- PCTS workshop ”Bangs, bounces, black holes, and bubbles” (May 2017): ‘Positivity Bounds in Effective Field Theories of Gravity’.
- **Keynote Talk** ‘Origin of Mass 2017 conference on Cosmology and Dark Matter’ (May 2017): ‘Positivity Bounds in Effective Field Theories of Gravity’.
- University of Sheffield (April 2017): ‘Positivity Bounds in Effective Field Theories of Gravity’.
- Oxford University (Feb 2017): ‘Constraints on Effective Field Theories for Cosmology’.
- Case Western Reserve University (January 2016): ‘The 2015 Science Nobel Prizes - What were they given for?’. (**Colloquium**)
- Stanford Institute for Theoretical Physics, Stanford (December 2015): ‘Progress in Massive Gravity’.
- Ludwig Maximilians University, Munich (March 2015): ‘UV Properties of Galileons’.
- Imperial College London (March 2015): ‘UV Properties of Galileons’.
- Cosmology Group Meeting, Perimeter Institute for Theoretical Physics (Feb 2015): ‘UV Properties of Galileons’.
- Invited Lecturer for ‘X Mexican School on Gravitation’ (December 2014).
- Invited participant at ‘The quest for Dark Energy II: theory and simulations confront observations’, Munich, Germany (December 14-19, 2014).
- Invited Seminar speaker at Cleveland State University Physics Department (October 2014)
- **Keynote Talk**, ‘Non-Linear Structure in the Modified Universe’, Lorenz Center, Leiden (July 2014): ‘Modified Gravity: the Future’.

- ‘Rencontres de Moriond’ conference, La Thuile Italy (March 2013): ‘Theories of Modified Gravity’.
- Particle Physics Group Meeting, Perimeter Institute for Theoretical Physics (March 2014): ‘Massive Gravity and Galileon Duality’.
- String Theory Group Meeting, Perimeter Institute for Theoretical Physics (March 2014): ‘Massive Gravity and Galileon Duality’.
- Snowmass on the Mississippi (July 2013). Panel Presentation: ‘Dark Energy Why Go Further?’.
- Snowmass on the Mississippi (July 2013): ‘Cosmic Acceleration Theoretical Challenges’.
- OSAPS meeting, University of Cincinnati (September 2013): ‘Cosmic Acceleration and Gravity’.
- Contributed 7 hours of lectures on Massive Gravity at the Yukawa Institute summer school and workshop, Kyoto (July/August 2012): Nonlinear massive gravity theory and its observational test
- Yukawa Institute, Kyoto (August 2012): ‘Progress in Massive Gravity’.
- Columbia (May 2012): ‘A first class formulation of Massive Gravity’.
- Carnegie Mellon (March 2012): ‘Cosmological Solutions in Massive Gravity’.
- Penn State (February 2012): ‘Connections between models of Massive Gravity’.
- McMaster University (February 2012): ‘New Cosmologies on the Horizon’ (**Colloquium**).
- University of Geneva (November 2011): ‘Cosmic Inflation’.
- University of Minnesota (March 2011): ‘Galileon Inflation’.
- Vanderbilt University (February 2011): ‘Galileon Inflation’.
- NYU (November 2010): ‘Resumming Massive Gravity’.
- Fermilab (October 2010): ‘Galileon Inflation’.
- CERN (May 2010): ‘DBI/Galileon Inflation’.
- University of Leiden (March 2010): ‘Non-Gaussianities and the Inflationary Initial State’.
- University of Cincinnati (March 2010): ‘Dynamics in the Dark’ (**Colloquium**).
- University of Cincinnati (March 2010): ‘Non-Gaussianities and the Inflationary Initial State’.
- Syracuse University (February 2010): ‘Non-Gaussianities and the Inflationary Initial State’.
- IPMU, Tokyo (February 2010): ‘Non-Gaussianities and the Inflationary Initial State’.
- Case Western Reserve University (February 2010): ‘Non-Gaussianities and the Inflationary Initial State’.
- CCPP, New York University (February 2010): ‘Non-Gaussianities and the Inflationary Initial State’.
- Ludwig Maximilians Universität, Munich (December 2009): ‘Effective Field Theory and the Inflationary Initial State’.
- Carnegie Mellon University (November 2009): ‘Dynamics in the Dark’ (**Colloquium**).
- University of Geneva (April 2009): ‘Dynamics in the Dark’.
- Perimeter Institute (March 2009): ‘Dynamics in the Dark’.
- Case Western Reserve University (March 2009): ‘Dynamics in the Dark’ (**Colloquium**).
- Mitchell Institute, Texas A + M (November 2008): ‘Cascading gravity’.
- PI/CITA day, Perimeter Institute (October 2008): ‘Cascading Perturbations’ .
- CMB/LSS workshop, Pune (August 2008): ‘Cascading Gravity’.

- Carnegie Mellon University (June 2008): ‘Stochastic DBI-inflation’.
- Nordita, Stockholm, (May 2008): ‘Stochastic DBI-Inflation’.
- University of Nottingham, (May 2008): ‘Cascading Gravity’.
- Perimeter Institute, (February 2008): ‘New Era for Cosmic Inflation’ (**Colloquium**).
- UC Davis, (October 2007): ‘Enhanced Non-Gaussianity from Excited Initial States’.
- Oxford University, (June 2007): ‘Extra dimensions and Dark Energy’.
- University of Michigan, Ann Arbor, (April 2007): ‘Transplankian effects and non-gaussianity’.
- University of North Carolina, (March 2007): ‘What branes and extra dimensions can do for cosmology’ (**Colloquium**).
- ISCAP, Columbia (Oct 2005): ‘Dynamics of codimension two branes’.
- Harvard University, (Feb 2005): ‘String propagation in a big-crunch/big-bang spacetime’.
- Institute for Advanced Study, Princeton, (Nov 2003): ‘Cosmological Perturbations in a big-crunch/big-bang spacetime’.

Conference presentations

- Invited Talk at “Integrable effective field theories and their holographic descriptions”, Galilei Institute, Florence (Dec 2019): ‘TTbar, Massive Gravity and Non-critical Strings’.
- Chair of Panel Discussion ‘Cosmology’ for “Gravitational Waves of Fundamental Physics”, European Consortium for Astroparticle Theory (EuCAPT), Amsterdam (Nov 2019).
- Keynote Speaker at “Origins of the Universe Conference”, 26-27 September 2019, Simons Foundation, New York: ‘Positivity Bounds in Effective Field Theories and Gravity’.
- Plenary Speaker at “Amplitudes, 2019”, 1-5 July 2019, Trinity College Dublin: ‘Positivity Bounds in Effective Field Theories’.
- Keynote Speaker at ”The Mysterious Universe: Dark Matter-Dark Energy-Cosmic Magnetic Fields, 20 May-7 June 2019 in Mainz.
- 7th UK QFT Meeting, University of Manchester (Nov 2018): ‘Positivity Bounds for Arbitrary Spin’.
- Invited **Collective** expert at Fundamental physics with LISA Workshop, Galilei Institute, Florence (Nov 2018): ‘Theoretical Physics Foundations: Gravity’.
- **Opening speaker** at Kobayashi-Maskawa institute workshop on modified gravity at Nagoya, Japan (August 2018): ‘Positivity Bounds in Effective Field Theories of Gravity’.
- Keynote talk at Fifteenth Marcel Grossmann Meeting (July 2018): ‘Review of Massive Gravity’.
- **Plenary Speaker**, PASCOS 2018, held at Case Western Reserve University (June 2018).
- Invited Talk, Higgs Effective Field Theory 2018, held at Mainz Institute for Theoretical Physics (April 2018): ‘Positivity Bounds for Arbitrary Spin’.
- Keynote talk at one-day workshop as part of ‘Gravity and Cosmology 2018’, held at Yukawa Institute for Theoretical Physics (Feb 2018): ‘Positivity Bounds and Massive Gravity’.
- Invited talk at ‘Gravity and Cosmology 2018’, held at Yukawa Institute for Theoretical Physics (Feb 2018): ‘Positivity Bounds for Arbitrary Spin’.
- Keynote talk at ‘Rencontres de Moriond’ conference, La Thuile Italy (March 2017): ‘Theories of Modified gravity’.
- ‘Positivity bounds in EFT for cosmology’, Quantum Vacuum and Gravitation: Testing General Relativity in Cosmology, March 2017, Mainz

- ‘Excited Initial States in Inflation’, Rencontres de Vietnam, Cosmology - 50 years after CMB discovery, August 2015.
- ‘On the uniqueness of the Einstein-Hilbert kinetic term in Massive Gravity’, Rencontres de Vietnam, Hot Topics in General Relativity and Gravitation (August 2015).
- Invited Speaker at Workshop ‘Superluminality in Effective Field Theories for Cosmology’ held at Perimeter Institute (April 2015)
- Cook’s Branch Workshop, Mitchell Institute for Fundamental Physics and Astronomy, Texas (April 2013): ‘Supersymmetric Massive Gravity’.
- Cosmo 2013, University of Cambridge (September 2013): ‘Galileon Duality’.
- Hot topics in Modern Cosmology, Cargese (May 2013): ‘Supersymmetric Massive Gravity’.
- Snowmass at SLAC (March 2013): ‘Theoretical Challenges for Modified Gravity Modes’.
- Invited Lecturer for 7th Aegean Summer School in Paros island (Greece), ”Beyond Einstein’s Theory of Gravity” (September 2013): “Cosmological Applications of Massive Gravity”.
- 22nd Midwest Relativity Meeting, Chicago (September 2012): ‘First Class formulation of Massive Gravity’
- Workshop on Cosmic Acceleration, Carnegie Mellon University (August 2012): ‘Higuchi Bound in Massive Gravity’
- Hot topics in Modern Cosmology, Cargese (May 2012): ‘First Class formulation of Massive Gravity’
- **Opening speaker** at Fermilab workshop ‘Laboratory Tests of Dark Energy (October 2011): ‘Review of Theoretical Approaches to Dark Energy’.
- Workshop in Infrared Modifications of Gravity, ICTP (September 2011): ‘Some thoughts on Superluminalities in Massive Gravity’.
- Aspects of Inflation, Mitchell Institute, Texas A+M (April 2011): ‘Galileon Inflation’.
- Workshop on Galileons, UPenn (April 2011): ‘New Massive Gravity and the Galileon’.
- Return of de Sitter, Stockholm University (March 2011)” ‘New Massive Gravity and the Galileon’.
- Miami 2010, Miami (December 2010): ‘Galileon Inflation’.
- Fundamentals of Gravity, Munich (April 2010): ‘DBI/Galileon Inflation’.
- Miami 2009, Miami (December 2009): ‘Effective Field Theory and the Inflationary Initial State’.
- Holographic Cosmology Workshop, McGill University (October 2009): ‘Review talk on holographic cosmology’.
- **Plenary Speaker** at Cosmo 2009, CERN, Geneva (September 2009): ‘Dark Energy’.
- PSI-G workshop on IR modifications of gravity, APC Paris (November 2008): ‘Tensing the ghost in cascading gravity’.
- Cosmological Frontiers in Fundamental Physics, APC Paris (May 2008): ‘Stochastic/Thermal Tunneling in Non-minimal kinetic theories’.
- Perimeter Institute Novel Ideas workshop, (March 2008): ‘Constraining initial state non-gaussianity via backreaction’.
- Cosmo 2007, University of Sussex (August 2007): ‘Stochastic Inflation revisited: Non-slow roll statistics and DBI inflation’.
- Cosmo 2006, California (Sept 2006): ‘Mimicking Lambda with a spin-two ghost condensate’.
- PI/CITA workshop, CITA Toronto (Dec 2005): ‘Bulk singularities and the Effective cosmological constant for Higher co-dimension branes’.

- Cosmo 2005, Bonn (Aug 2005): ‘String pair production in a Time-dependent gravitational field’.
- Workshop in string phenomenology, Perimeter Institute (April 2005): ‘String propagation in a big-crunch/big-bang spacetime’.
- Oxford-Princeton Cosmology Meeting (Jan 2004): ‘Cosmological Perturbations in a big-crunch/big-bang spacetime’.
- UK Cosmology Meeting, Queen Mary (2004): ‘Quantum Field theory in a big-crunch/big-bang spacetime’.