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Education:

- 2001: Ph.D. (Physics) [University of California, Riverside](#);
Dissertation: “[Study of the Shadow of the Moon in Very High Energy Cosmic Rays with the Milagrito Water Cherenkov Detector](#)”
- 1996: M.S. (Physics) [University of California, Riverside](#)
- 1993: B.A. (Physics) [University of Chicago](#)

Current Positions:

- Rokos-Clarendon Professor of Neutrino Physics, University of Oxford, UK.
- Rokos Tutor and Fellow in Physics, Pembroke College, Oxford.

Awards:

- 2016: [Breakthrough Prize for Fundamental Physics](#) (Laureate, as T2K member).
- 2007: [DOE P2 Star Award](#) (SciBooNE, Fermilab).
- 1998: [American Physical Society Prize, APS Four Corners Sectional Meeting](#).
- 1989: Elda Washer Scholarship (Oregon, USA).

Employment History:

- 2023–present: Rokos-Clarendon Professor of Neutrino Physics, University of Oxford, UK.
- 2019–2023: Professor of Physics, Imperial College London, UK.
- 2016–2019: Reader in High Energy Physics, Imperial College London, UK.
- 2016: Long Term Invited Fellow, High Energy Accelerator Research Lab (KEK), Japan.
- 2014–2016: Senior Lecturer in High Energy Physics, Imperial College London, UK.
- 2011–2014: Lecturer in Physics, Imperial College London, UK.
- 2008–2013: STFC Advanced Fellow, Imperial College London, UK.
- 2006–2008: Fixed Term Research Lecturer, Imperial College London, UK.
- 2001–2006: Postdoctoral Research Associate, Louisiana State University, USA.
- 1996–2001: Graduate research assistant, University of California, Riverside, USA.
- 1990–1993: Undergraduate research technician, University of Chicago, USA.

External Funding:

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|---|---|
| 2022: STFC (Consolidated Grant, co-I). | 2012: STFC (Consolidated Grant, co-I). |
| 2020: ERC AIDAInnova gas TPC R&D. | 2010: Royal Society (Travel Grant, PI). |
| 2019: STFC (DUNE-UK, PI). | 2009: STFC (Consolidated Grant, co-I). |
| 2017: STFC (Special Grant, PI) | 2008: STFC Advanced Fellowship (PI). |
| 2015: STFC (Project R&D (HPgTPC), PI). | 2007: Daiwa Foundation (Small Grant, PI). |
| 2015: STFC (Special Grant, PI) | 2006: Department of Energy, USA (FNAL:
SciBooNE construction, co-I). |
| 2015: STFC (Consolidated Grant, co-I). | |
| 2014: STFC (Hyper-K, Institutional PI). | |

Research interests:

Neutrino Oscillation Physics

- Measurements of $\nu_{\mu} \rightarrow \nu_e$ and $\bar{\nu}_{\mu} \rightarrow \bar{\nu}_e$ neutrino oscillation and search for CP violation with DUNE, and T2K. World-leading ν_{μ} and $\bar{\nu}_{\mu}$ disappearance searches in ~ 1 eV² region (sterile neutrino searches) with SciBooNE and MiniBooNE.
- Global oscillation analysis techniques; effects of neutrino-nucleus interactions on neutrino oscillation measurements, optimisation of neutrino detection technology for neutrino oscillation measurements.

Neutrino Detector R&D, Design, Construction, Calibration

- Development of high-pressure gas time-projection-chamber technology for near detector and neutrino interactions measurements, with application to DUNE (NDGAR).
- Data acquisition development for DUNE.
- Cosmic muon calibration system for MiniBooNE detector.

Neutrino-Nucleus Interaction Physics

- Measurements of ν and $\bar{\nu}$ interaction cross sections on various target nuclei with DUNE, T2K, MINERvA, SciBooNE, MiniBooNE.
- Development of novel data analysis techniques, especially model-independent measurements.

Search for Antimatter in Cosmic Rays Using the Shadow of the Moon

- Analysis of the moon and sun shadows in cosmic rays with Milagro. First model-independent energy calibration of air showers using the geomagnetic field as a spectrometer. Search for antimatter in TeV cosmic rays.

Leadership positions held

- *DUNE*: PI of DUNE-UK Collaboration [2021–2023]; Code of Conduct Committee [2019–2023].
- *T2K*: International Co-Spokesperson of T2K Collaboration [2015–2019]; Executive Committee [2019–2021]; Neutrino Interactions Working Group (NIWG) Convener [2009–2014]; Near Detector Convener (ND280 G4) [2010–2014]; Publication Board Chair [2012–2014].
- *SciBooNE*: Founder and Co-Spokesperson of SciBooNE Collaboration [2005–2014].
- *MiniBooNE*: Co-Convener of Detector Calibration Working Group; Deputy Detector and Operations Coordinator.

External Committees:

2019–2022: [IPPP Steering Committee](#).

2019–2020: [AIDAInnova Committee \(ERC\)](#).

2018–2019: [STFC Particle Astrophysics Priority Evaluation Panel](#).

2014–2017: [STFC Particle Physics Advisory Panel \(PPAP\)](#).

2013–2017: [ICFA Neutrino Panel](#).

International Advisory Committee, [Neutrino 2022](#) and [Neutrino 2020](#).

Local Organising Committee, [Neutrino 2016](#).

International Nulnt Commission Member; Chair and host: [Nulnt14](#); Scientific Program Committee: [Nulnt15](#), [Nulnt14](#), [Nulnt12](#), [Nulnt11](#), [Nulnt09](#), [Nulnt07](#).