

# NICHOLAS L. RODD

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POSITIONS	<b>Lawrence Berkeley National Laboratory</b> Divisional Fellow <b>CERN</b> LD Staff Member <b>University of California, Berkeley</b> Miller Research Fellow	2024-present  2021-2023  2018-2021
EDUCATION	<b>Massachusetts Institute of Technology</b> Ph.D. Physics Advisor: Tracy Slatyer Thesis: <i>Listening to the Universe through Indirect Detection</i>  <b>Melbourne University</b> M.Sc. (Distinction) Physics Advisor: Raymond Volkas and Elisabetta Barberio Thesis: <i>Analysis of neutrino mass effective operators and testing their signatures at the Large Hadron Collider</i>  <b>Melbourne University</b> B.Sc. & LL.B. (Hons)	2013-2018  2011-2012  2006-2010
SELECT AWARDS	APS DAP Cecilia Payne-Gaposchkin Thesis Award  J. J. and Noriko Sakurai Dissertation Award in Theoretical Particle Physics  Price Prize in Cosmology and AstroParticle Physics  Andrew M. Lockett III Memorial Fund Award, MIT  Fulbright Postgraduate Scholarship (declined)  Australian Students Prize 	2020 2019 2017 2016 2013 2005
SELECT PRESENTATIONS <sup>†</sup>	<i>A Quantum Description of Wave Dark Matter</i> , KITP <i>Lectures on Dark Matter</i> , TRISEP Summer School <i>Searching for the heaviest and lightest particles in the Universe</i> , Public Talk for Dark Matter Day <i>Looking Beyond the Dark Matter in Axion Haloscopes</i> , Aspen Center for Physics Colloquium	February 2025 June 2023 October 2022  August 2022
SELECT PUBLICATIONS	<ul style="list-style-type: none"><li>○ D. Y. Cheong, N. L. Rodd, L. Wang <i>A Quantum Description of Wave Dark Matter</i></li><li>○ V. Domcke, S. A. R. Ellis, N. L. Rodd <i>Magnets are Weber Bar Gravitational Wave Detectors</i></li><li>○ K. Langhoff, N. J. Outmezguine, N. L. Rodd <i>The Irreducible Axion Background</i></li><li>○ C. W. Bauer, N. L. Rodd, B. R. Webber <i>Dark Matter Spectra from the Electroweak to the Planck Scale</i></li><li>○ F. List, N. L. Rodd, G. F. Lewis, I. Bhat <i>The GCE in a New Light: Disentangling the <math>\gamma</math>-ray Sky with Bayesian Graph Convolutional Neural Networks</i></li><li>○ G. N. Remmen, N. L. Rodd <i>Flavor Constraints from Unitarity and Analyticity</i></li></ul>	<a href="#">Phys.Rev. <b>D111</b> (2024) 015028</a> <a href="#">arXiv:2408.04696</a> <a href="#">Phys.Rev.Lett. <b>134</b> (2025) 231401</a> <a href="#">arXiv:2408.01483</a> <a href="#">Phys.Rev.Lett. <b>129</b> (2022) 241101</a> <a href="#">arXiv:2209.06216</a> <a href="#">JHEP <b>06</b> (2021) 121</a> <a href="#">arXiv:2007.15001</a> <a href="#">Phys.Rev.Lett. <b>125</b> (2020) 241102</a> <a href="#">arXiv:2006.12504</a> <a href="#">Phys.Rev.Lett. <b>125</b> (2020) 081601</a> <a href="#">arXiv:2004.02885</a>

<sup>†</sup> Talks listed in blue contain a link to a recording

66. Y. Bao, D. Y. Cheong, N. L. Rodd, J. Takach, L. Wang, K. Zhou [arXiv:2510.05198](#)  
*Intrinsically Quantum Effects of Axion Dark Matter are Undetectable*
65. F. List, Y. Park, N. L. Rodd, E. Schoen, F. Wolf [arXiv:2507.17804](#)  
*On the Energy Distribution of the Galactic Center Excess' Sources*
64. M. Baumgart, S. Bottaro, D. Redigolo, N. L. Rodd, T. R. Slatyer [arXiv:2507.15937](#)  
*Testing Real WIMPs with CTAO*
63. S. Abe, T. Inada, E. Moulin, N. L. Rodd, B. R. Safdi, W. L. Xu [arXiv:2506.08084](#)  
*Discovering the Higgsino at CTAO-North within the Decade*
62. C. Beadle, S. A. R. Ellis, J. M. Leedom, N. L. Rodd [Phys.Rev. \*\*D113\*\* \(2026\) L031702](#)  
*Dark Matter Nuclear Magnetic Resonance is Sensitive to Dark Photons and the Axion-Photon Coupling* [arXiv:2505.15897](#)
61. The ABRACADABRA Collaboration [arXiv:2505.02821](#)  
*High-Frequency Gravitational Wave Search with ABRACADABRA-10 cm*
60. G. N. Remmen, N. L. Rodd [arXiv:2412.07827](#)  
*Positively Identifying HEFT or SMEFT*
59. G. Durieux, G. N. Remmen, N. L. Rodd, O. J. P. Éboli, M. C. Gonzalez-Garcia, D. Kondo, H. Murayama, R. Okabe [SciPost Phys. Comm. Rep. \*\*6\*\* \(2025\)](#)  
*LHC EFT WG Note: Basis for Anomalous Quartic Gauge Couplings* [arXiv:2411.02483](#)
58. D. Y. Cheong, N. L. Rodd, L. Wang [Phys.Rev. \*\*D111\*\* \(2024\) 015028](#)  
*A Quantum Description of Wave Dark Matter* [arXiv:2408.04696](#)
57. V. Domcke, S. A. R. Ellis, N. L. Rodd [Phys.Rev.Lett. \*\*134\*\* \(2025\) 231401](#)  
*Magnets are Weber Bar Gravitational Wave Detectors* [arXiv:2408.01483](#)
56. N. L. Rodd, B. R. Safdi, W. L. Xu [Phys.Rev. \*\*D110\*\* \(2024\) 043003](#)  
*CTA and SWGO can Discover Higgsino Dark Matter Annihilation* [arXiv:2405.13104](#)
55. M. Baumgart, N. L. Rodd, T. R. Slatyer, V. Vaidya [JHEP \*\*01\*\* \(2024\) 158](#)  
*The Quintuplet Annihilation Spectrum* [arXiv:2309.11562](#)
54. D. Carney, V. Domcke, N. L. Rodd [Phys.Rev. \*\*D109\*\* \(2024\) 044009](#)  
*Graviton detection and the quantization of gravity* [arXiv:2308.12988](#)
53. V. Domcke, C. Garcia-Cely, S. M. Lee, N. L. Rodd [JHEP \*\*03\*\* \(2024\) 128](#)  
*Symmetries and Selection Rules: Optimising Axion Haloscopes for Gravitational Wave Searches* [arXiv:2306.03125](#)
52. C. Dessert, O. Ning, N. L. Rodd, B. R. Safdi [Phys.Rev.Lett. \*\*132\*\* \(2024\) 211002](#)  
*Limits from the grave: resurrecting Hitomi for decaying dark matter and forecasting leading sensitivity for XRISM* [arXiv:2305.17160](#)
51. The ADMX Collaboration [Phys.Rev.Lett. \*\*131\*\* \(2023\) 101002](#)  
*Search for the Cosmic Axion Background with ADMX* [arXiv:2303.06282](#)
50. The VERITAS Collaboration [Astrophys.J. \*\*945\*\* \(2023\) 101](#)  
*Search for Ultraheavy Dark Matter from Observations of Dwarf Spheroidal Galaxies with VERITAS* [arXiv:2302.08784](#)
49. M. Freytsis, S. Kumar, G. N. Remmen, N. L. Rodd [JHEP \*\*09\*\* \(2023\) 041](#)  
*Multifield Positivity Bounds for Inflation* [arXiv:2210.10791](#)
48. J. A. Dror, S. Gori, J. M. Leedom, N. L. Rodd [Phys.Rev.Lett. \*\*130\*\* \(2023\) 181801](#)  
*On the Sensitivity of Spin-Precession Axion Experiments* [arXiv:2210.06481](#)
47. A. Montanari, E. Moulin, N. L. Rodd [Phys.Rev. \*\*D107\*\* \(2023\) 043028](#)  
*Towards the ultimate reach of current Imaging Atmospheric Cherenkov Telescopes to TeV Dark Matter* [arXiv:2210.03140](#)
46. K. Langhoff, N. J. Outmezguine, N. L. Rodd [Phys.Rev.Lett. \*\*129\*\* \(2022\) 241101](#)  
*The Irreducible Axion Background* [arXiv:2209.06216](#)
45. D. Tak, M. Baumgart, N. L. Rodd, E. Pueschel [Astrophys.J. \*\*938\*\* \(2022\) L4](#)  
*Current and future  $\gamma$ -ray searches for dark-matter annihilation beyond the unitarity limit* [arXiv:2208.11740](#)

44. G. N. Remmen, N. L. Rodd JHEP **09** (2022) 030  
arXiv:2206.13524  
*Spinning Sum Rules for the Dimension-Six SMEFT*
43. V. Domcke, C. Garcia-Cely, N. L. Rodd Phys.Rev.Lett. **129** (2022) 041101  
arXiv:2202.00695  
*A novel search for high-frequency gravitational waves with low-mass axion haloscopes*
42. F. List, N. L. Rodd, G. F. Lewis Phys.Rev. **D104** (2021) 123022  
arXiv:2107.09070  
*Dim but not entirely dark: Extracting the Galactic Center Excess' source-count distribution with neural nets*
41. G. H. Collin, N. L. Rodd, T. Erjavec, K. Perez Astrophys.J. **260** (2022) 29  
arXiv:2104.04529  
*A Compound Poisson Generator approach to Point-Source Inference in Astrophysics*
40. The ABRACADABRA Collaboration Phys.Rev.Lett. **127** (2021) 081801  
arXiv:2102.06722  
*The search for low-mass axion dark matter with ABRACADABRA-10cm*
39. J. W. Foster, M. Kongsore, C. Dessert, Y. Park, N. L. Rodd, K. Cranmer, B. R. Safdi Phys.Rev.Lett. **127** (2021) 051101  
arXiv:2102.02207  
*A deep search for decaying dark matter with XMM-Newton blank-sky observations*
38. J. A. Dror, H. Murayama, N. L. Rodd Phys.Rev. **D103** (2021) 115004<sup>†</sup>  
arXiv:2101.09287  
*The Cosmic Axion Background*
37. G. N. Remmen, N. L. Rodd Phys.Rev. **D105** (2022) 036006  
arXiv:2010.04723  
*Signs, Spin, SMEFT: Sum Rules at Dimension Six*
36. J. W. Foster, Y. Kahn, R. Nguyen, N. L. Rodd, B. R. Safdi Phys.Rev. **D103** (2021) 076018<sup>†</sup>  
arXiv:2009.14201  
*Dark Matter Interferometry*
35. L. Rinchiuso, O. Macias, E. Moulin, N. L. Rodd, T. R. Slatyer Phys.Rev. **D103** (2021) 023011  
arXiv:2008.00692  
*Prospects for Heavy WIMP Dark Matter with CTA: the Wino and Higgsino*
34. C. W. Bauer, N. L. Rodd, B. R. Webber JHEP **06** (2021) 121  
arXiv:2007.15001  
*Dark Matter Spectra from the Electroweak to the Planck Scale*
33. I. Baldes, F. Calore, K. Petraki, V. Poireau, N. L. Rodd SciPost Phys. **9** (2020) 068  
arXiv:2007.13787  
*Indirect searches for dark matter bound state formation and level transitions*
32. F. List, N. L. Rodd, G. F. Lewis, I. Bhat Phys.Rev.Lett. **125** (2020) 241102  
arXiv:2006.12504  
*The GCE in a New Light: Disentangling the  $\gamma$ -ray Sky with Bayesian Graph Convolutional Neural Networks*
31. C. Dessert, N. L. Rodd, B. R. Safdi Phys.Dark Univ. **30** (2020) 100656  
arXiv:2006.03974  
*Response to a comment on Dessert et al. "The dark matter interpretation of the 3.5 keV line is inconsistent with blank-sky observations"*
30. G. N. Remmen, N. L. Rodd Phys.Rev.Lett. **125** (2020) 081601  
arXiv:2004.02885  
*Flavor Constraints from Unitarity and Analyticity*
29. M. Buschmann, N. L. Rodd, B. R. Safdi, L. J. Chang, S. Mishra-Sharma, M. Lisanti, O. Macias Phys.Rev. **D102** (2020) 023023  
arXiv:2002.12373  
*Foreground Mismodeling and the Point Source Explanation of the Fermi Galactic Center Excess*
28. The IceCube Collaboration Astrophys.J. **893** (2020) 102  
arXiv:1909.08623  
*A Search for Neutrino Point-Source Populations in 7 Years of IceCube Data with Neutrino-count Statistics*
27. L. J. Chang, S. Mishra-Sharma, M. Lisanti, M. Buschmann, N. L. Rodd, B. R. Safdi Phys.Rev. **D101** (2020) 023014  
arXiv:1908.10874  
*Characterizing the Nature of the Unresolved Point Sources in the Galactic Center*
26. G. N. Remmen, N. L. Rodd JHEP **12** (2019) 032  
arXiv:1908.09845  
*Consistency of the Standard Model Effective Field Theory*

25. The ABRACADABRA Collaboration Phys.Rev. **D99** (2019) 052012  
arXiv:1901.10652  
*Design and Implementation of the ABRACADABRA-10 cm  
Axion Dark Matter Search*
24. C. Dessert, N. L. Rodd, B. R. Safdi Science **367** (2020) 6485  
arXiv:1812.06976  
*The dark matter interpretation of the 3.5-keV line is  
inconsistent with blank-sky observations*
23. The ABRACADABRA Collaboration Phys.Rev.Lett. **122** (2018) 121802  
arXiv:1810.12257  
*First Results from ABRACADABRA-10 cm:  
A Search for Sub- $\mu$ eV Axion Dark Matter*
22. M. Baumgart, T. Cohen, E. Moulin, I. Moul, L. Rinchuso, JHEP **01** (2019) 036  
arXiv:1808.08956  
N. L. Rodd, T. R. Slatyer, I. W. Stewart, V. Vaidya  
*Precision Photon Spectra for Wino Annihilation*
21. L. Rinchuso, N. L. Rodd, I. Moul, E. Moulin, M. Baumgart, Phys.Rev. **D98** (2018) 123014  
arXiv:1808.04388  
T. Cohen, T. R. Slatyer, I. W. Stewart, V. Vaidya  
*Hunting for Heavy Winos in the Galactic Center*
20. M. Baumgart, T. Cohen, I. Moul, N. L. Rodd, JHEP **03** (2018) 117  
arXiv:1712.07656  
T. R. Slatyer, M. P. Solon, I. W. Stewart, V. Vaidya  
*Resummed Photon Spectra for WIMP Annihilation*
19. J. W. Foster, N. L. Rodd, B. R. Safdi Phys.Rev. **D97** (2018) 123006  
arXiv:1711.10489  
*Revealing the Dark Matter Halo with Axion Direct Detection*
18. The HAWC Collaboration JCAP **1802** (2018) 049  
arXiv:1710.10288  
*A Search for Dark Matter in the Galactic Halo with HAWC*
17. R. Bartels, D. Hooper, T. Linden, S. Mishra-Sharma, Phys.Dark Univ. **20** (2016) 88  
arXiv:1710.10266  
N. L. Rodd, B. R. Safdi, T. R. Slatyer  
*Comment on “Characterizing the population of pulsars in the Galactic bulge  
with the Fermi Large Area Telescope” [arXiv:1705.00009v1]*
16. R. E Keeley, S. N. Abazajian, A. Kwa, N. L. Rodd, B. R. Safdi Phys.Rev. **D97** (2018) 103007  
arXiv:1710.03215  
*What the Milky Way’s Dwarfs tell us about  
the Galactic Center extended excess*
15. M. Lisanti, S. Mishra-Sharma, N. L. Rodd, Phys.Rev. **D97** (2018) 063005  
arXiv:1709.00416  
B. R. Safdi, R. H. Wechsler  
*Mapping Extragalactic Dark Matter Annihilation with Galaxy Surveys:  
A Systematic Study of Stacked Group Searches*
14. M. Lisanti, S. Mishra-Sharma, N. L. Rodd, B. R. Safdi Phys.Rev.Lett. **120** (2018) 101101  
arXiv:1708.09385  
*A Search for Dark Matter Annihilation in Galaxy Groups*
13. P. Ilten, N. L. Rodd, J. Thaler, M. Williams Phys.Rev. **D96** (2017) 054019  
arXiv:1702.02947  
*Disentangling Heavy Flavor at Colliders*
12. T. Cohen, K. Murase, N. L. Rodd, B. R. Safdi, Y. Soreq Phys.Rev.Lett. **119** (2017) 021102  
arXiv:1612.05638  
*Gamma-ray Constraints on Decaying Dark Matter  
and Implications for IceCube*
11. G. Ovanessian, N. L. Rodd, T. R. Slatyer, I. W. Stewart Phys.Rev. **D95** (2017) 055001  
arXiv:1612.05638  
*The One-Loop Correction to Heavy Dark Matter Annihilation*
10. S. Mishra-Sharma, N. L. Rodd, B. R. Safdi Astron.J. **153** (2017) 253  
arXiv:1612.03173  
*NPTFit: A code package for Non-Poissonian Template Fitting*
9. T. Linden, N. L. Rodd, B. R. Safdi, T. R. Slatyer Phys.Rev. **D94** (2016) 103013  
arXiv:1604.01026  
*The High-Energy Tail of the Galactic Center Gamma-Ray Excess*
8. G. Elor, N. L. Rodd, T. R. Slatyer, W. Xu JCAP **1606**, 024 (2015)  
arXiv:1511.08787  
*Model-Independent Indirect Detection Constraints  
on Hidden Sector Dark Matter*
7. G. Elor, N. L. Rodd, T. R. Slatyer Phys.Rev. **D91** (2015) 103531  
arXiv:1503.01773  
*Multi-Step Cascade Annihilations of Dark Matter  
and the Galactic Center Excess*

PUBLICATIONS (CONT.)	6. T. Daylan, D. P. Finkbeiner, D. Hooper, T. Linden, S. K. N. Portillo, N. L. Rodd, T. R. Slatyer <i>The Characterization of the Gamma-Ray Signal from the Central Milky Way: A Case for Annihilating Dark Matter</i>	<a href="#">Phys.Dark Univ. <b>12</b> (2016) 1-23</a> <a href="#">arXiv:1402.6703</a>
	5. P. W. Angel, Y. Cai, N. L. Rodd, M. A. Schmidt, R. R. Volkas <i>Testable two-loop radiative neutrino mass model based on an <math>LLQd^c Qd^c</math> effective operator</i>	<a href="#">JHEP <b>10</b> (2013) 118</a> <a href="#">arXiv:1308.0463</a>
	4. A. Kobakhidze, N. L. Rodd <i>Time-symmetric quantization in spacetimes with event horizons</i>	<a href="#">Int.J.Theor.Phys. <b>52</b> (2013) 2636</a> <a href="#">arXiv:1307.5126</a>
	3. P. W. Angel, N. L. Rodd, R. R. Volkas <i>Origin of neutrino masses at the LHC: <math>\Delta L = 2</math> effective operators and their ultraviolet completions</i>	<a href="#">Phys.Rev. <b>D87</b> (2013) 073007</a> <a href="#">arXiv:1212.6111</a>
	2. The ATLAS Collaboration <i>Search for anomalous production of prompt like-sign lepton pairs at <math>\sqrt{s} = 7</math> TeV with the ATLAS detector</i>	<a href="#">JHEP <b>12</b> (2012) 7</a> <a href="#">arXiv:1210.4538</a>
	1. The ATLAS Collaboration <i>Search for doubly charged Higgs bosons in like-sign dilepton final states with the ATLAS detector</i> (Only listed as internal author on this paper due to ATLAS regulations allowing a maximum of one publication before service work has been completed.)	<a href="#">Eur.Phys.J. <b>C72</b> (2012) 2244</a> <a href="#">arXiv:1210.5070</a>
WHITE PAPERS	8. M. Baumgart, N. L. Rodd, et al. <i>Snowmass Theory Frontier: Effective Field Theory</i>	<a href="#">arXiv:2210.03199</a>
	7. D. Green, N. L. Rodd, et al. <i>Snowmass Theory Frontier: Astrophysics and Cosmology</i>	<a href="#">arXiv:2209.06854</a>
	6. K. K. Boddy, M. Lisanti, S. D. McDermott, N. L. Rodd,* C. Weniger, et al. <i>Astrophysical and Cosmological Probes of Dark Matter</i>	<a href="#">JHEAp <b>35</b> (2022) 112</a> <a href="#">arXiv:2203.06380</a>
	5. D. Carney, N. L. Rodd, et al. <i>Ultraheavy particle dark matter</i>	<a href="#">SciPost Phys.Core <b>6</b> (2023) 075</a> <a href="#">arXiv:2203.06508</a>
	4. S. Ando, N. L. Rodd, et al. <i>Synergies between dark matter searches and multiwavelength/multimessenger astrophysics</i>	<a href="#">arXiv:2203.06781</a>
	3. R. Leane, N. L. Rodd, et al. <i>Puzzling Excesses in Dark Matter Searches and How to Resolve Them</i>	<a href="#">arXiv:2203.06859</a>
	2. K. Engel, N. L. Rodd, et al. <i>The Future of Gamma-Ray Experiments in the MeV-EeV Range</i>	<a href="#">arXiv:2203.07360</a>
	1. M. Baumgart, N. L. Rodd, et al. <i>Effective Field Theories for Dark Matter Phenomenology</i>	<a href="#">arXiv:2203.08204</a>
PLENARIES & COLLOQUIA	University of California, Santa Cruz	November 2024
	San Francisco State University	September 2024
	TeV Particle Astrophysics 2024, Chicago	August 2024
	LNS Colloquium, MIT	May 2024
	<a href="#">University of Toronto</a>	March 2024
	Max Planck Institute for Physics, Munich	November 2023
	Oskar Klein Center, Stockholm University	October 2023
	Progress on Old and New Themes in cosmology (PONT) 2023, Avignon, France	May 2023
	Novel approaches to characterise the Galactic Centre Excess, Annecy	March 2023
	University of California, Davis	March 2023
	<a href="#">Aspen Center for Physics</a>	August 2022
	University of Amsterdam GRAPPA	June 2022
	Exploring the Dark Universe 33rd Rencontres de Blois, Blois, France	May 2022
	<a href="#">Snowmass Theory Frontier Conference</a> , Santa Barbara, USA	February 2022



PLENARIES & COLLOQUIA (CONT.)	XIX International Workshop on Neutrino Telescopes, Virtual	February 2021
	Melbourne University	December 2019
	Next Frontiers in the Search for Dark Matter, Florence, Italy	September 2019
	In Pursuit of New Particles and Paradigms, Aspen, USA	March 2019
CONFERENCE TALKS	Spec-S5 Dark Matter Meeting 2025, Chicago, USA	October 2025
	SMEFT meets ChEFT, TRIUMF, Canada	September 2025
	Windows into New Physics in the Sky, MITP, Germany	July 2025
	Quantum Sensing meets Ultra-high Frequency Gravitational Waves, MITP, Germany	July 2025
	No Stone Unturned, Salt Lake City, USA	March 2025
	<a href="#">What is Particle Theory?</a> Santa Barbara, USA	February 2025
	8th General Meeting of the LHC EFT Working Group, Geneva, Switzerland	December 2024
	Fundamental physics and gravitational wave detectors, Pollica, Italy	September 2024
	2024 Seoul Particle Theory Workshop, Seoul, South Korea	May 2024
	The Mitchell Conference 2024, College Station, USA	May 2024
	Axions 2024, Gainesville, USA	April 2024
	Dark Wave Lab Workshop, Batavia, USA	April 2024
	Ultra-high frequency gravitational waves: where to next? Geneva, Switzerland	December 2023
	CERN EP Physics Workshop, Crozet, France	October 2023
	LHC EFT Working Group: positivity constraints, Geneva, Switzerland	July 2023
	<a href="#">Axions across boundaries</a> , Florence, Italy	May 2023
	Novel approaches to characterise the Galactic Centre Excess, Annecy, France	March 2023
	17th IAXO Collaboration Meeting, DESY	March 2023
	19 <sup>th</sup> Rencontres du Vietnam, Quy Nhon, Vietnam	January 2023
	Particle Avenues in the Dark Universe Arena (PADUA), Padua, Italy	September 2022
	CERN-CKC workshop, Jeju Island, South Korea	June 2022
	<a href="#">Novel Hidden Sectors: From Colliders to Cosmology</a> , Munich, Germany	May 2022
	Computational Tools for High Energy Physics and Cosmology, Virtual	November 2021
	<a href="#">New Physics from The Sky</a> , Florence, Italy	October 2021
	PANIC 2021 Lisbon Portugal, Virtual	September 2021
	CMB-S4 collaboration meeting, Virtual	August 2021
	Electroweak effects at high energy, Virtual	September 2020
	DM Radio Collaboration Meeting, Virtual	August 2020
	APS April Meeting, Virtual	April 2020
	New Techniques for Dark Matter Discovery, Vancouver, Canada	March 2020
	TeV Particle Astrophysics 2019, Sydney, Australia	December 2019
	NEPLES-2019, Seoul, South Korea	September 2019
	APS April Meeting, Denver, USA	April 2019
	Berkeley week at IPMU, Kashiwa, Japan	January 2019
	TeV Particle Astrophysics 2018, Berlin, Germany	August 2018
	TeV Particle Astrophysics 2017, Columbus, USA	August 2017
	Cosmic Rays, Pulsars & Dark Matter, Santa Fe, USA	March 2017
	CosPA 2016, Sydney, Australia	November 2016
	TeV Particle Astrophysics 2016, Geneva, Switzerland	September 2016
	LoopFest XV, Buffalo, USA	August 2016
	Gamma Rays & Dark Matter, Obergurgl, Austria	December 2015
	Intense Electron Beams Workshop, Ithaca, USA	June 2015
	CIPANP 2015, Vail, USA	May 2015
	Astroparticle Physics 2014, Amsterdam, Netherlands	June 2014
	Strings and Super Yang Mills, Melbourne, Australia	April 2013
	Australian-Italian Symposium, Melbourne, Australia	April 2012
	CoEPP Workshop, Lorne, Australia	February 2012

INVITED SEMINARS	UC Davis	2026
	UC Davis, Harvard, Cornell, University of Oregon, Brigham Young University, Perimeter Institute, Fermilab, University of Melbourne, Copernicus Webinar, Arizona State University, <a href="#">University of Chicago</a> , University of Wisconsin–Madison, Wisconsin IceCube Particle Astrophysics Center	2025
	University of Melbourne, ARC Centre of Excellence for Dark Matter, <a href="#">Sydney CPPC</a> , UC San Diego, Caltech, JPL, McGill	2024
	Tel Aviv University, Weizmann, ICTP, EPFL, LAPTh, Boston University, The University of British Columbia, UC Davis, Chung-Ang University, Cambridge University, Sapienza University of Rome, CERN Quantum Technology Initiative, Universitat Autònoma de Barcelona, Copernicus Webinar	2023
	UIUC, Stanford, UC Berkeley, LBNL, University of Victoria and TRIUMF (joint), University of Florida and Florida State University (joint), DESY, University of Geneva (Cosmology department), University of Geneva (Particle Physics department), Technion, Hebrew University <a href="#">Miller Lunch Talk</a> , University of Cambridge, University of Michigan, Rutgers University,	2022 2021
	CERN, <a href="#">University of Sydney</a> , Kavli IPMU, ARC Centre of Excellence for Dark Matter, University of Melbourne, <a href="#">KASI</a> , <a href="#">McGill University</a> , UC Santa Cruz	
	LHC Results Forum, UC Santa Cruz, INPA LBNL, <a href="#">UC Davis</a> , University of Maryland, <a href="#">BSM PANDEMIC</a> , Brown University, KICP, <a href="#">University of Minnesota</a> , Technical University of Munich, Korea Institute for Advanced Study, University of Padua	2020
	UC San Diego, <a href="#">UC Davis</a> , University of Washington, UC Santa Cruz, SLAC	2019
	Stanford, University of Melbourne, UC Berkeley	2018
	Harvard, University of Michigan, Princeton, The Ohio State University (Price Prize Seminar), UC Berkeley, UC Irvine, University of Oregon, Fermilab, New York University, The Ohio State University, Perimeter Institute, Virginia Tech, Pennsylvania State University	2017
	Monash University, University of Melbourne, McGill University	2016
TEACHING	Schools and Lectures	
	* <a href="#">2023 Tri-Institute Summer School on Elementary Particles (TRISEP)</a>	June 2023
	* <a href="#">BCVSPIN-2021: Probing the Mysteries of the Universe</a>	January 2022
	* IPMU Pedagogical Seminar Series	November 2021
	Quantum Field Theory 1 (TA and delivered 4 lectures), MIT (6.3/7)	Spring 2018
	Relativity (TA), MIT (6.0/7)	Fall 2017
	Relativity (TA), MIT	Fall 2014
	Quantum Field Theory (TA), Melbourne University	2013
	Physics for Biomed (Recitation Instructor), Melbourne University	2012
	Introductory physics laboratory (Demonstrator), Melbourne University	2011
	(Student evaluation scores are given in parentheses where available.)	
STUDENTS	Joey Takach	2024-present
	Eve Schoen	2024-present
MENTORING	Dhong Yeon Cheong (graduate)	2023
	Yunha Lee (graduate)	2022-2024
	Sung Mook Lee (graduate)	2022-2023
	Gongjun Choi (postdoc)	2021-2023
	Florian List (graduate)	2020-2021
	Chris Dessert (graduate)	2018-2019
	Josh Foster (graduate)	2017-2018
	Michael Toomey (undergraduate)	2017-2018

SERVICE	<b>Referee:</b> Physical Review Letters, Physical Review D, Journal of High Energy Physics, Physics Letters B, SciPost, Journal of Cosmology and Astroparticle Physics, The Astrophysical Journal, Computer Physics Communication, New Astronomy, The Particle Data Group	
	Organiser of LBNL AI/ML Seminar Series	2025
	Convener for SUSY 2025	August 2025
	Organised the <a href="#">Berkeley Axion Workshop</a>	May 2025
	Organised the <a href="#">Third EuCAPT Annual Symposium</a>	May 2023
	Organised <a href="#">34<sup>th</sup> Rencontres de Blois</a>	May 2023
	Organised <a href="#">19<sup>th</sup> Rencontres du Vietnam</a>	January 2023
	Management Committee, <a href="#">COST Action COSMIC WISPerS in the Dark Universe</a>	2022-2023
	Organised the <a href="#">Second EuCAPT Annual Symposium</a>	May 2022
	Organised <a href="#">New Methods and Ideas at the Frontiers of Particle Physics</a> (Winter Aspen)	March 2022
	Organiser of the <a href="#">HEP/Astro Results Forum</a>	2021-
	Convener for COSMO'21, University of Illinois and Online	August 2021
	Convener for TeVPA 2019, Sydney, Australia	December 2019
	Co-organiser of mini-workshop on the Galactic Center excess, Columbus, OH	August 2017
	Organised a summer school on the NPTF, MIT	June 2017
	LBNL Particle Seminar Organiser, Lawrence Berkeley National Laboratory	2019-2020
	Beyond the Standard Model Journal Club Organiser, MIT	2015-2017
	Ph.D. Thesis Committee	
	<ul style="list-style-type: none"> <li>* Carl Beadle, “Phenomenological Aspects of Feebly Interacting Physics from Axions to Gravity” (Francesco Riva &amp; Sebastian Ellis, University of Geneva)</li> </ul>	July 2025
	<ul style="list-style-type: none"> <li>* Harrison Ploeg, “The Galactic Millisecond Pulsar Population – Implications for the Galactic Center Excess” (Chris Gordon, University of Canterbury)</li> </ul>	August 2021
OUTREACH	Astronomy on Tap - East Bay	2026
	<a href="#">Podcast recorded for Dark Matter Day</a>	2025
	Presentation to the Galesville Astrophysical Society	2025
	<a href="#">KITP Teachers' Conference</a> , presentation to high school teachers	2025
	Quarknet, presentation to visiting high school students, LBNL	2024-
	<a href="#">Aspen Center for Physics - Public Lecture</a>	2024
	Interviewed to outline the work of a theorist for the <a href="#">CERN Science Gateway</a>	2022
	Dark matter presentations to school students visiting CERN from the UK and Israel	2022-2023
	Public talk for <a href="#">Dark Matter Day at CERN</a> – recording available <a href="#">here</a>	2022
	Interview on <a href="#">Radio Physics</a>	2022
	Interview with <a href="#">The Scientist Reach Out Group</a> – recording available <a href="#">here</a>	2022
	Presentation at the Berkeley High School Physics Club – recording available <a href="#">here</a>	2021
	Organised and Presenter at “Meet a Miller Fellow,” El Cerrito High School	2020-2021
	Adopt-a-Physicist	2020
	Presentation to PHYS 153 transfer students, UC Berkeley	2020
GRANTS	<b>Department of Energy:</b> Laboratory Directed Research & Development	2025
	<i>Preparing Axion Haloscopes for Discovery</i>	\$480,000
	<b>Templeton Foundation</b>	2025
	<i>A Window to the Beginning of Time: a staged search for pre-inflationary axions and gravitational waves</i>	\$250,000
AWARDS	APS DAP Cecilia Payne-Gaposchkin Thesis Award	2020
	J. J. and Noriko Sakurai Dissertation Award in Theoretical Particle Physics	2019
	Miller Research Fellowship	2018
	Price Prize in Cosmology and AstroParticle Physics	2017
	Andrew M. Lockett III Memorial Fund Award, MIT	2016
	American Australian Association's ConocoPhillips Fellowship	2015
	Acevedo Fellowship, MIT	2015



AWARDS (CONT.)	Kerman Fellowship, MIT	2013
	Fulbright Postgraduate Scholarship (declined)	2013
	Henry James Williams Scholarship, Melbourne University	2012
	Dean's Honours List in MSc Physics, Melbourne University	2012
	Bryan Scholarship in Natural Science, Melbourne University	2011
	Master of Science National Scholarship, Melbourne University	2011
	Raynes Dickson Memorial Exhibition in Deals, Melbourne University	2010
	Dean's Honours List in BSc/LLB, Melbourne University	2008
	Dean's Honours List in BSc/LLB, Melbourne University	2006
	VCE Premiers All Round High Achiever	2005
	Australian Students Prize	2005
	Dux of Melbourne Grammar School	2005

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