

Nicholas Llewellyn Rodd

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CURRENT ACADEMIC POSITION

2018 – Present **University of California, Berkeley**
MILLER RESEARCH FELLOW

EDUCATION

2013 – 2018 **Massachusetts Institute of Technology**
PH.D. PHYSICS
ADVISOR: Tracy Slatyer
THESIS: Listening to the Universe through Indirect Detection

2011 – 2012 **Melbourne University**
M.SC. (DISTINCTION) PHYSICS
ADVISORS: Raymond Volkas and Elisabetta Barberio
THESIS: Analysis of neutrino mass effective operators
and testing their signatures at the Large Hadron Collider

2006 – 2010 **Melbourne University**
B.SC. AND LL.B. (HONS)

Spring 2009 **University of California, Berkeley**
B.Sc. one semester exchange

SELECTED AWARDS

2020 **APS DAP Cecilia Payne-Gaposchkin Thesis Award**

2019 **J. J. and Noriko Sakurai Dissertation Award in Theoretical Particle Physics**

2018 **Miller Research Fellowship**

2017 **Price Prize in Cosmology and AstroParticle Physics**

2016 **Andrew M. Lockett III Memorial Fund Award, MIT**

2015 **American Australian Association's ConocoPhillips Fellowship**

2015 **Acevedo Fellowship, MIT**

2013 **Kerman Fellowship, MIT**

2013 **Fulbright Postgraduate Scholarship** (declined)

2012 **Henry James Williams Scholarship, Melbourne University**

2012 **Dean's Honours List in MSc Physics, Melbourne University**

2011 **Bryan Scholarship in Natural Science, Melbourne University**

2011 **Master of Science National Scholarship, Melbourne University**

- 2010 **Raynes Dickson Memorial Exhibition in Deals**, Melbourne University
- 2008 **Dean's Honours List in BSc/LLB**, Melbourne University
- 2006 **Dean's Honours List in BSc/LLB**, Melbourne University
- 2005 **VCE Premiers All Round High Achiever**
- 2005 **Australian Students Prize**

PUBLICATIONS

Authors are generally listed alphabetically, following the standard in particle physics.

30. G. N. Remmen, N. L. Rodd ARXIV:2004.02885
Flavor Constraints from Unitarity and Analyticity
29. M. Buschmann, N. L. Rodd, B. R. Safdi, L. J. Chang, ARXIV:2002.12373
S. Mishra-Sharma, M. Lisanti, O. Macias
Foreground Mismodeling and the Point Source Explanation of the Fermi Galactic Center Excess
28. IceCube Collaboration 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, PHYS.REV. **D101** (2020) 023014
M. Buschmann, N. L. Rodd, B. R. Safdi ARXIV:1908.10874
Characterizing the Nature of the Unresolved Point Sources in the Galactic Center
26. G. N. Remmen, N. L. Rodd JHEP **1912** (2019) 032
Consistency of the Standard Model Effective Field Theory ARXIV:1908.09845
25. The ABRACADABRA Collaboration PHYS.REV. **D99** (2019) 052012
Design and Implementation of the ABRACADABRA-10 cm ARXIV:1901.10652
Axion Dark Matter Search
24. C. Dessert, N. L. Rodd, B. R. Safdi SCIENCE 367 (2020) 6485
Evidence against the decaying dark matter interpretation ARXIV:1812.06976
of the 3.5 keV line from blank sky observations
23. The ABRACADABRA Collaboration PHYS. REV. LETT. **122** (2018) 121802
First Results from ABRACADABRA-10 cm: ARXIV:1810.12257
A Search for Sub- μ eV Axion Dark Matter
22. M. Baumgart, T. Cohen, E. Moulin, I. Mout, L. Rinchuso, JHEP **1901** (2019) 036
N. L. Rodd, T. R. Slatyer, I. W. Stewart, V. Vaidya ARXIV:1808.08956
Precision Photon Spectra for Wino Annihilation
21. L. Rinchuso, N. L. Rodd, I. Mout, E. Moulin, M. Baumgart, PHYS.REV. **D98** (2018) 123014
T. Cohen, T. R. Slatyer, I. W. Stewart, V. Vaidya ARXIV:1808.04388
Hunting for Heavy Winos in the Galactic Center

20. M. Baumgart, T. Cohen, I. Mould, N. L. Rodd,
T. R. Slatyer, M. P. Solon, I. W. Stewart, V. Vaidya
Resummed Photon Spectra for WIMP Annihilation ARXIV:1712.07656
19. J. W. Foster, N. L. Rodd, B. R. Safdi PHYS.REV. **D97** (2018) 123006
Revealing the Dark Matter Halo with Axion Direct Detection ARXIV:1711.10489
18. The HAWC Collaboration JCAP **1802** (2018) 049
A Search for Dark Matter in the Galactic Halo with HAWC ARXIV:1710.10288
17. R. Bartels, D. Hooper, T. Linden, S. Mishra-Sharma,
N. L. Rodd, B. R. Safdi, T. R. Slatyer PHYS.DARK UNIV. **20** (2016) 88
*Comment on “Characterizing the population of pulsars in the Galactic bulge
with the Fermi Large Area Telescope” [arXiv:1705.00009v1]* ARXIV:1710.10266
16. R. E. Keeley, S. N. Abazajian, A. Kwa, N. L. Rodd, B. R. Safdi PHYS.REV. **D97** (2018) 103007
What the Milky Way’s Dwarfs tell us about the Galactic Center extended excess ARXIV:1710.03215
15. M. Lisanti, S. Mishra-Sharma, N. L. Rodd, B. R. Safdi, R. H. Wechsler PHYS.REV. **D97** (2018) 063005
*Mapping Extragalactic Dark Matter Annihilation with Galaxy Surveys:
A Systematic Study of Stacked Group Searches* ARXIV:1709.00416
14. M. Lisanti, S. Mishra-Sharma, N. L. Rodd, B. R. Safdi PHYS. REV. LETT. **120** (2018) 101101
A Search for Dark Matter Annihilation in Galaxy Groups ARXIV:1708.09385
13. P. Ilten, N. L. Rodd, J. Thaler, M. Williams PHYS.REV. **D96** (2017) 054019
Disentangling Heavy Flavor at Colliders ARXIV:1702.02947
12. T. Cohen, K. Murase, N. L. Rodd, B. R. Safdi, Y. Soreq PHYS. REV. LETT. **119** (2017) 021102
*Gamma-ray Constraints on Decaying Dark Matter
and Implications for IceCube* ARXIV:1612.05638
11. G. Ovanessian, N. L. Rodd, T. R. Slatyer, I. W. Stewart PHYS.REV. **D95** (2017) 055001
The One-Loop Correction to Heavy Dark Matter Annihilation ARXIV:1612.05638
10. S. Mishra-Sharma, N. L. Rodd, B. R. Safdi ASTRON.J. **153** (2017) 253
NPTFit: A code package for Non-Poissonian Template Fitting ARXIV:1612.03173
9. T. Linden, N. L. Rodd, B. R. Safdi, T. R. Slatyer PHYS.REV. **D94** (2016) 103013
The High-Energy Tail of the Galactic Center Gamma-Ray Excess ARXIV:1604.01026
8. G. Elor, N. L. Rodd, T. R. Slatyer, W. Xue JCAP **1606**, 024 (2015)
*Model-Independent Indirect Detection Constraints
on Hidden Sector Dark Matter* ARXIV:1511.08787
7. G. Elor, N. L. Rodd, T. R. Slatyer PHYS.REV. **D91** (2015) 103531
*Multi-Step Cascade Annihilations of Dark Matter
and the Galactic Center Excess* ARXIV:1503.01773
6. T. Daylan, D. P. Finkbeiner, D. Hooper, T. Linden,
S. K. N. Portillo, N. L. Rodd, T. R. Slatyer PHYS.DARK UNIV. **12** (2016) 1
*The Characterization of the Gamma-Ray Signal from the Central Milky Way:
A Case for Annihilating Dark Matter* ARXIV:1402.6703

5. P. W. Angel, Y. Cai, N. L. Rodd, M. A. Schmidt, R. R. Volkas
*Testable two-loop radiative neutrino mass model
based on an $LLQd^c Qd^c$ effective operator*
JHEP **1310** (2013) 1118
ARXIV:1308.0463
4. A. Kobakhidze, N. L. Rodd
Time-symmetric quantization in spacetimes with event horizons
INT. J. THEOR. PHYS. **52** (2013) 2636
ARXIV:1307.5126
3. P. W. Angel, N. L. Rodd, R. R. Volkas
*Origin of neutrino masses at the LHC:
 $\Delta L = 2$ effective operators and their ultraviolet completions*
PHYS.REV. **D87** (2013) 073007
ARXIV:1212.6111
2. The ATLAS Collaboration
*Search for anomalous production of prompt like-sign lepton pairs
at $\sqrt{s} = 7$ TeV with the ATLAS detector*
JHEP **12** (2012) 7
ARXIV:1210.4538
1. The ATLAS Collaboration
*Search for doubly charged Higgs bosons in like-sign dilepton final states
with the ATLAS detector*
EUR. PHYS. J. **C72** (2012) 2244
ARXIV:1210.5070
Note only listed as internal author on this paper due to ATLAS regulations allowing a maximum of one publication
before service work has been completed.

INVITED PLENARIES AND COLLOQUIA

Melbourne University	DECEMBER 2019
In Pursuit of New Particles and Paradigms, Aspen, USA	MARCH 2019

INVITED SEMINARS

LHC Results Forum, UC Santa Cruz, INPA LBNL, UC Davis, BSM PANDEMIC	2020
UC San Diego, UC Davis, University of Washington, UC Santa Cruz, SLAC	2019
Stanford, Melbourne University, 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, Melbourne University, McGill University	2016

CONFERENCE TALKS

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
Next Frontiers in the Search for Dark Matter, Florence, Italy	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, CERN, 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

CONFERENCE POSTERS

Sixth International Fermi Symposium, Arlington, USA	NOVEMBER 2015
Debates on the Nature of Dark Matter, Cambridge, USA	MAY 2014
CoEPP Workshop, Cairns, Australia	JULY 2013

TEACHING EXPERIENCE

Student evaluation scores are given in parentheses where applicable.

Quantum Field Theory I (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

SERVICE

Referee: Physical Review Letters, Physical Review D, Journal of High Energy Physics, Physics Letters B, Computer Physics Communication

Dark matter convener for TeVPA 2019, Sydney, Australia DECEMBER 2019

Co-organizer of mini-workshop on the Galactic Center excess, Columbus, OH AUGUST 2017

LBNL Particle Seminar Organizer, Lawrence Berkeley National Laboratory 2019-PRESENT

Organizer of summer school on the NPTF, MIT JUNE 2017

Beyond the Standard Model Journal Club Organizer, MIT 2015-2017

REFERENCES

Tracy Slatyer Massachusetts Institute of Technology tslatyer@mit.edu

Benjamin Safdi University of Michigan bsafdi@umich.edu

Christian Bauer Lawrence Berkeley National Laboratory cwbauer@lbl.gov

Iain Stewart Massachusetts Institute of Technology iains@mit.edu

Christoph Weniger University of Amsterdam c.weniger@uva.nl

Marco Cirelli Laboratoire de Physique Théorique et Hautes Énergies marco.cirelli@lpthe.jussieu.fr