

Stefano Profumo

Professor, Physics Department
Associate Dean of Graduate Studies and Postdoctoral Affairs, Science Division
Deputy Director for Theory, Santa Cruz Institute for Particle Physics

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RESEARCH INTERESTS

Theoretical high-energy physics
Cosmology
Particle astrophysics
Physics of Black Holes

EMPLOYMENT HISTORY

Nov 2004 - Oct 2005 Postdoctoral Fellow in High Energy Physics, Florida State University
Oct 2005 - Aug 2007 Postdoctoral Scholar in Theoretical Astrophysics, California Institute of Technology
Jul 2007 - Jun 2011 Assistant Professor of Physics, UC Santa Cruz
Jul 2011 - Jun 2015 Associate Professor of Physics, UC Santa Cruz
Jul 1 2011 - Present Deputy Director for Theory, Santa Cruz Institute for Particle Physics (SCIPP), UC Santa Cruz
Jul 1 2015 - Present Professor of Physics, UC Santa Cruz
Mar 1 2024 - Present Associate Dean of Graduate Studies and Postdoctoral Affairs, Division of Physical and Biological Sciences

EDUCATION

2001 Diploma degree at Scuola Normale Superiore, Pisa, Italy Dissertation title: "Non-commutative Principal Chiral Models"
2001 M.Sc., Laurea Degree in Theoretical Physics at the University of Pisa, Italy; Thesis title: "Twisted Eguchi-Kawai Reduced Chiral Models in the large N limit"; Advisor: Prof. E. Vicari
2004 Ph.D., Elementary Particle Physics, SISSA-ISAS, Trieste, Italy Thesis title: "Neutralino Dark Matter, where particle physics meets cosmology"; Advisors: Prof. S. T. Petcov and Dr. P. Ullio

HONORS AND AWARDS

- Sep 21 2020 **Fellow of Professional Society:** Elected Fellow of the American Physical Society
- Feb 2018 **Outstanding Reviewer Award:** 2017 IOP Outstanding Reviewer Award
- May 2014 **Outstanding Volunteer Award:** "For outstanding volunteer efforts, contributions, and dedication to the Santa Cruz community as recognized within the Staff and Faculty Award category" - 2013-14 Cross country running club coach
- Jun 2013 **Excellence in Teaching Award:** 2013 Excellence in Teaching Award "For being invested in the success of his students, enthusiastic about the material, and responsive to feedback and suggestions"
- 2009 **Award:** Department of Energy Outstanding Junior Investigator Award
- 2007 **Fellowship:** Lawrence Fellowship, Lawrence Livermore National Laboratory (offered, February 2007, declined)
- 2007 **Fellowship:** Berkeley Center for Cosmological Physics Fellowship, UC Berkeley (offered, January 2007, declined)
- 2007 **Fellowship:** Center for Cosmology and Astro-Particle Physics Fellowship, Ohio State University (offered, January 2007, declined)
- 2006 **Fellowship:** Robert J. Oppenheimer Distinguished Postdoctoral Fellowship, Los Alamos National Laboratory (offered, November 2006, declined)
- 2003 "Lando Caiani" National Prize for the best Thesis on Field Theory
- 1997 - 2003 Scholarship at Scuola Normale Superiore
- 1996 "Ezio Garuzzo" National High School Prize in Philosophy

GRANTS

- 2023 - Present Principal Investigator, "Research in Particle Physics - Theory Task" - DoE SCIPP Theory Grant, PIs: Altmannshofer, Gori, Profumo (grant coordinator: Profumo), Shaghoulain (plus small support for emeriti Dine and Haber), 3 years (\$1,512k total, of which \$373k exclusively allocated to Profumo) \$373,000
- 2023 - 2026 Principal Investigator, National Science Foundation, Directorate for Mathematical and Physical Sciences, "Ascend" Postdoctoral Fellowship, joint to postdoctoral awardee Sarah M. Geller; \$240,000 \$240,000
- 2020 - 2023 Principal Investigator, "Research in Particle Physics - Theory Task" - DoE SCIPP Theory Grant, PIs: Altmannshofer, Dine (now retired), Haber (now retired), Profumo (grant coordinator: Profumo), 3 years (\$7.948M grant total, of which \$963k to the theory task)
- 2020 - 2021 Co-Principal Investigator, Co-Investigator, NASA grant on "Probing Dark Matter Self Interaction in X-ray" (PI: Jeltema) \$140,000
- 2017 - 2020 Principal Investigator, "Research in Particle Physics - Theory Task" - DoE SCIPP Theory Grant, PIs: Dine, Haber, Profumo (grant coordinator: Profumo), 3 years (\$6.989M grant total, of which \$924k to the theory task)
- 2017 - 2018 Co-Principal Investigator, NASA grant on "NOVEL DIFFUSE EMISSION MODELS FOR THE CENTRAL MOLECULAR ZONE"
- 2015 - 2018 Principal Investigator, UC-MEXUS-CONACYT grant (with Alma Gonzalez, Co-PI), \$20,000+\$20,000, 2 years.
- 2015 - 2018 Co-Principal Investigator, NSF grant on "Extremes Meet: Radio and Gamma-Ray Observations of Clusters of Galaxies, from Dark Matter to Cosmic Rays" \$325,000
- 2013 - 2017 Principal Investigator, "Research in Particle Physics - Theory Task" - DoE SCIPP Theory Grant, PIs: Banks, Dine, Haber, Profumo (grant coordinator: Profumo), 4 years, \$1,645,000
- 2014 - 2015 Principal Investigator, NASA/Shared Services Center-NESSF Fellowship to Eric Carlson to work on "*A Density-Based Spatial Clustering Approach to the Morphology of Low-Statistics Gamma-ray Emission*"(\$30K, continuation grant)
- 2014 - 2015 Principal Investigator, UC/MEXUS award to continue support Dr. Alma Gonzalez-Morales on "*Observational Prospects to Constrain Dark Matter Particle Physics*" (\$30K, continuation award)
- 2013 - 2014 Principal Investigator, NASA/Shared Services Center-NESSF Fellowship to Eric Carlson to work on "*A Density-Based Spatial Clustering Approach to the Morphology of Low-Statistics Gamma-ray Emission*" (\$30K)
- 2013 - 2014 Principal Investigator, UC/MEXUS award to support Dr. Alma Gonzalez-Morales on "*Observational Prospects to Constrain Dark Matter Particle Physics*"; \$30K, award number: SC-14-13.
- 2012 Co-Principal Investigator, Australia Telescope Compact Array ATNF: "Observation of six local dSph Galaxies" (PI: M. Regis)
- 2011 Principal Investigator, NASA Fermi Guest Investigator Grant: "Identifying the nature of the Galactic center gamma-ray source 1FGL J1745.6-2900" (\$83K)
- 2010 Principal Investigator, DoE Fermilab Fellowship (to fund graduate student Tim Linden)
- 2010 Principal Investigator, "*A search for dark matter annihilation in the anisotropy power spectrum of the Fermi-LAT Gamma-Ray Sky*"
- 2010 Principal Investigator, NASA NESSF Graduate Fellowship (to fund graduate student Tim Linden) "*A search for dark matter annihilation in the anisotropy power spectrum of the Fermi-LAT Gamma-Ray Sky*" (\$30K)
- 2009 Principal Investigator, Joined as Principal Investigator the DoE Grant, Theory Task (J), of the Santa Cruz Institute for Particle Physics
- 2009 Principal Investigator, NASA Fermi-GLAST Guest Investigator Grant "*Fermi*

- Observations of Nearby Radio Halo Clusters: Probing Cosmic Ray and Dark Matter Models with Multiwavelength Observations*" (\$65K)
- 2009 Principal Investigator, NASA Fermi-GLAST Guest Investigator Grant "*DMMW: a tool for multi-wavelength dark matter searches*" (\$85K)
- 2009 Principal Investigator, Faculty Research Grant, UC Santa Cruz "*Electro-Weak Bubbles: connecting the Origin of Matter and Gravitational Waves*"
- 2009 Co-Principal Investigator, (PI: L. Rudnick), NASA NRAO Grant "*Abell 2319: from cosmic rays to gamma rays*"
- 2009 Principal Investigator, Outstanding Junior Investigator Award, Department of Energy, Office of High Energy Physics, "*Theoretical Techniques and Computational Tools for the Identification of Particle Dark Matter and Baryogenesis*" (\$237K)
- 2008 Co-Investigator, Special Research Grant, UCSC Committee on Research, (PI: E. Ramirez-Ruiz)
- 2008 Principal Investigator, NSF Grant "*Origin and Probes of Baryonic and Dark Matter*" (\$90K)
- 2008 Co-Principal Investigator, (PI: P. Madau), NASA GLAST Guest Investigator Grant, "*GLAST and Dark Matter Substructure in the Milky Way*"
- 2008 Principal Investigator, NASA GLAST Guest Investigator Grant "*Probing Dark Matter with AGN Jets*" (\$25K)
- 2008 Principal Investigator, Faculty Research Grant, UC Santa Cruz "*Probes of the origin of the matter-antimatter asymmetry in the Universe*"

SCHOLARLY AND CREATIVE WORK

Journal Articles In Progress

- 218 **Under Review:** G. Arcadi, D. Cabo-Almeida, M. Dutra, P. Ghosh, M. Lindner, Y. Mambrini, J. P. Neto, M. Pierre, S. Profumo and F. S. Queiroz, "The Waning of the WIMP: Endgame?," [arXiv:2403.15860 [hep-ph]].
- 220 **Under Review:** M. Korwar and S. Profumo, "Late-forming black holes and the antiproton, gamma-ray, and anti-helium excesses," [arXiv:2403.18656 [astro-ph.CO]].
- 221 **Under Review:** S. Profumo, M. G. Roberts and S. Dharanibalan, "On the Impact of Dark Matter Scattering on the Trajectory of High-Energy Cosmic Rays," [arXiv:2405.02755 [astro-ph.HE]].
- 170 **Under Review:** N. Fernandez, A. Ghalsasi and S. Profumo, "Superradiance and the Spins of Black Holes from LIGO and X-ray binaries," [arXiv:1911.07862 [hep-ph]]. PEER REVIEWED

Books

- 2017 "An Introduction to Particle Dark Matter", 288pp, Apr 2017, ISBN: 978-1-78634-000-9, World Scientific
- 2003 "*Fisica 1*", Undergraduate Level Textbook on Classical Mechanics, in Italian, AlphaTest, Milano December 2003

Contributions to Books

- In Press: Book Chapter:** S. Profumo, "Ultralight Primordial Black Holes," [arXiv:2405.00546 [astro-ph.HE]].
- 2010 **Book Chapter:** "*Multi-wavelength Searches for Particle Dark Matter.*", by Stefano Profumo and Piero Ullio, contributed chapter to "Particle Dark Matter: Observations, Methods and Searches", edited by Gianfranco Bertone, Cambridge University Press, February 2010, also appeared as e-Print: arXiv:1001.4086 [astro-ph.HE]

Journal Articles

- 219 **In Press:** J. M. Koulen, S. Profumo and N. Smyth, "Constraints on Primordial Black Holes from N-body simulations of the Eridanus II Stellar Cluster," [arXiv:2403.19015 [astro-ph.CO]].
- 221 **In Press:** P. Munbodh and S. Profumo, "Astrophysical constraints from synchrotron emission on very massive decaying dark matter," [arXiv:2405.00798 [hep-ph]].
- 208 2023 M. Korwar and S. Profumo, "Updated constraints on primordial black hole evaporation," JCAP **05**, 054 (2023) doi:10.1088/1475-7516/2023/05/054 [arXiv:2302.04408 [hep-ph]]. PEER REVIEWED
- 209 2023 A. Ireland, S. Profumo and J. Scharnhorst, "Primordial gravitational waves from black hole evaporation in standard and nonstandard cosmologies," Phys. Rev. **107**, no.10, 104021 (2023) doi:10.1103/PhysRevD.107.104021 [arXiv:2302.10188 [gr-qc]]. PEER REVIEWED
- 210 2023 L. Boubekeur and S. Profumo,

- 211 2023 ``Tremaine-Gunn limit with mass-varying particles,"
Phys. Rev. D **107**, no.10, 103535 (2023)
doi:10.1103/PhysRevD.107.103535
[arXiv:2302.10246 [astro-ph.CO]]. PEER REVIEWED
- 212 2023 S. Profumo and F. Yang,
``On the Anisotropy of the Stochastic Gravitational Wave Background from Sub-Horizon-
Collapsed Primordial Black Hole Mergers,"
Phys. Rev. D **108**, no.10, 103528 (2023)
[arXiv:2306.07454 [astro-ph.CO]]. PEER REVIEWED
http://doi:10.1103/PhysRevD.108.103528
- 213 2023 W. Altmannshofer, S. A. Gadam and S.Profumo,
``Probing Physics with $\mu^+ \mu^-$ to bs\$ at a Muon Collider,"
Phys. Rev. D **108**, no.11, 115033 (2023)
[arXiv:2306.15017 [hep-ph]]. PEER REVIEWED
http://doi:10.1103/PhysRevD.108.115033
- 214 2023 X. Boluna, S. Profumo, J. Ble' and D. Hennings,
``Searching for Exploding Black Holes,"
JCAP **04**, 024 (2024)
[arXiv:2307.06467 [astro-ph.HE]]. PEER REVIEWED
- 215 2023 W. DeRocco, N. Smyth and S. Profumo,
``Constraints on sub-terrestrial free-floating planets from Subaru microlensing
observations,"
MNRAS **527** (2024) 8921
[arXiv:2308.13593 [astro-ph.EP]]. PEER REVIEWED
http://10.1093/mnras/stad3824
- 216 2023 B. V. Lehmann, L. Morrison, S. Profumo and N. Smyth,
``Kinetic recoupling of dark matter,"
JCAP **07**, 049 (2024)
[arXiv:2310.20513 [hep-ph]].
http://10.1088/1475-7516/2024/07/049
- 217 2023 W. DeRocco, E. Frangipane, N. Hamer, S. Profumo and N. Smyth,
``Revealing terrestrial-mass primordial black holes with the Nancy Grace Roman Space
Telescope,"
Phys. Rev. D **109**, no.2, 023013 (2024)
[arXiv:2311.00751 [astro-ph.CO]]. PEER REVIEWED
http://10.1103/PhysRevD.109.023013
- 199 2022 **In Press:** A. Ireland, S. Profumo and J. Scharnhorst,
``Gravitational Waves from Primordial Black Hole Evaporation with Large Extra
Dimensions,"
[arXiv:2312.08508 [gr-qc]].
- 200 2022 H. Steigerwald, V. Marra and S. Profumo,
``Revisiting constraints on asymmetric dark matter from collapse in white dwarf stars,"
Phys. Rev. D **105**, no.8, 083507 (2022)
doi:10.1103/PhysRevD.105.083507
[arXiv:2203.09054 [astro-ph.CO]]. PEER REVIEWED
- 201 2022 L. Morrison, S. Profumo, N. Smyth and J. Tamanas,
``Simulation based inference for efficient theory space sampling: An application to
supersymmetric explanations of the anomalous muon g-2,"
Phys. Rev. D **106**, no.11, 115016 (2022)
doi:10.1103/PhysRevD.106.115016
[arXiv:2203.13403 [hep-ph]]. PEER REVIEWED
- 201 2022 B.V. Lehmann, A. Webber, O.G. Ross and S. Profumo,
``Capture of primordial black holes in extrasolar systems,"
JCAP **08**, 079 (2022)
doi:10.1088/1475-7516/2022/08/079
[arXiv:2205.09756 [astro-ph.EP]]. PEER REVIEWED

- 202 2022 C.A. Manzari and S. Profumo,
 ``Flavor inspired model for dark matter,"
 Phys. Rev. D **106**, no.7, 075025 (2022)
 doi:10.1103/PhysRevD.106.075025
 [arXiv:2206.06768 [hep-ph]]. PEER REVIEWED
- 203 2022 A. Coogan, L. Morrison, T. Plehn, S. Profumo and P. Reimitz,
 ``Hazma meets HERWIG4DM: precision gamma-ray, neutrino, and positron spectra for
 light dark matter,"
 JCAP **11**, 033 (2022)
 doi:10.1088/1475-7516/2022/11/033
 [arXiv:2207.07634 [hep-ph]]. PEER REVIEWED
- 204 2022 R. L. Workman et al. [Particle Data Group],
 ``Review of Particle Physics,"
 PTEP **2022**, 083C01 (2022)
 doi:10.1093/ptep/ptac097 PEER REVIEWED
- 205 2022 N. Fernandez, A. Ghalsasi, S. Profumo, N. Smyth and L. Santos-Olmsted,
 ``Dark Black Holes in the Mass Gap,"
 JCAP **01**, 064 (2024)
 [arXiv:2208.08557 [hep-ph]] PEER REVIEWED
 http://doi:10.1088/1475-7516/2024/01/064
- 207 2022 L. Morrison, S. Profumo and B. Shakya,
 ``Sterile Neutrinos from Dark Matter: A ν Nightmare?,"
 [arXiv:2211.05996 [hep-ph]] (accepted for publication in JHEP, to appear) PEER
 REVIEWED
- 206 2022 F. Compagnin, S. Profumo and N. Fornengo,
 ``MeV dark matter with MeV dark photons in Abelian kinetic mixing theories,"
 JCAP **03**, 061 (2023)
 doi:10.1088/1475-7516/2023/03/061
 [arXiv:2211.13825 [hep-ph]]. PEER REVIEWED
- 180 2021 Y.D. Tsai, A. Palmese, S. Profumo and T. Jeltema,
 "Is GW170817 a Multimessenger Neutron Star-Primordial Black Hole Merger"
 JCAP **10**, 010 (2021)
 doi:10.1088/1475-7516/2021/10/019
 [arXiv:2007.03686 [astro-ph.HE]]. PEER REVIEWED
- 181 2021 G. Arcadi, S. Profumo, F.S. Queiroz and C. Siqueira,
 ``Right-handed Neutrino Dark Matter, Neutrino Masses, and non-Standard Cosmology in
 a 2HDM"
 JCAP **12**, 030 (2020)
 doi:10.1088/1475-7516/2020/12/030
 [arXiv:2007.07920 [hep-ph]]. PEER REVIEWED
- 182 2021 P. A. Zyla et al. [Particle Data Group],
 "Review of Particle Physics"
 PTEP **2020**, no.8, 083C01 (2020)
 doi:10.1093/ptep/ptaa104 PEER REVIEWED, INVITED
- 183 2021 L. Morrison, S. Profumo and D.J. Robinson,
 "Large N -ightmare Dark Matter,"
 JCAP **05**, 058 (2021)
 doi:10.1088/1475-7516/2021/05/058
 [arXiv:2010.03586 [hep-ph]]. PEER REVIEWED
- 184 2021 A. Coogan, L. Morrison and S. Profumo,
 "Direct Detection of Hawking Radiation from Asteroid-Mass Primordial Black Holes,"
 Phys. Rev. Lett. **126**, no.17, 171101 (2021)
 doi:10.1103/PhysRevLett.126.171101
 [arXiv:2010.04797 [astro-ph.CO]]. PEER REVIEWED
- 185 2021 T. Jeltema, S. Profumo and J.F. Ulbricht,
 "Lowest Dimensional Portals to SU(N) Exotics,"

- J. Math. Phys. **62**, no.3, 031701 (2021)
doi:10.1063/5.0034790
[arXiv:2010.05827 [hep-ph]]. PEER REVIEWED
- 186 2021 B. V. Lehmann, O.G. Ross, A. Webber and S. Profumo,
"Three-body capture, ejection, and the demographics of bound objects in binary systems,"
Mon. Not. Roy. Astron. Soc. **505**, no.1, 1017-1028 (2021)
doi:10.1093/mnras/stab1121
[arXiv:2012.05875 [astro-ph.SR]]. PEER REVIEWED
- 187 2021 A. Do, M. Duong, A. McDaniel, C. O'Connor, S. Profumo, J. Rafael, C. Sweeney and W. Vera, III,
"Cosmic-ray transport and gamma-ray emission in M31,"
Phys. Rev. D **104**, no.12, 123016 (2021)
doi:10.1103/PhysRevD.104.123016
[arXiv:2012.14507 [astro-ph.HE]]. PEER REVIEWED
- 188 2021 A. Coogan, A. Moiseev, L. Morrison and S. Profumo,
"Hunting for Dark Matter and New Physics with (a) GECCO,"
[arXiv:2101.10370 [astro-ph.HE]],
to appear in PRD PEER REVIEWED
- 189 2021 A. McDaniel, T. Jeltema and S. Profumo,
"X-Ray Shapes of Elliptical Galaxies and Implications for Self-Interacting Dark Matter,"
JCAP **05**, 020 (2021)
doi:10.1088/1475-7516/2021/05/020
[arXiv:2103.01247 [astro-ph.CO]]. PEER REVIEWED
- 190 2021 A. Duran, L. Morrison and S. Profumo,
"Sterile neutrino dark matter from generalized CPT-symmetric early-Universe cosmologies,"
Phys. Rev. D **104**, no.2, 023509 (2021)
doi:10.1103/PhysRevD.104.023509
[arXiv:2103.08626 [hep-ph]]. PEER REVIEWED
- 191 2021 A. Coogan, L. Morrison and S. Profumo,
"Precision gamma-ray constraints for sub-GeV dark matter models,"
JCAP **08**, 044 (2021)
doi:10.1088/1475-7516/2021/08/044
[arXiv:2104.06168 [hep-ph]]. PEER REVIEWED
- 192 2021 B.V. Lehmann and S. Profumo,
"Black hole remnants are not too fast to be dark matter,"
Phys. Dark Univ. **39**, 101145 (2023)
doi:10.1016/j.dark.2022.101145
[arXiv:2105.01627 [gr-qc]]. PEER REVIEWED
- 193 2021 N. Smyth, G. Huckabee and S. Profumo,
"Optimal observing strategies for velocity-suppressed dark matter annihilation,"
Phys. Rev. D **104**, no.12, 123003 (2021)
doi:10.1103/PhysRevD.104.123003
[arXiv:2105.03438 [astro-ph.CO]]. PEER REVIEWED
- 194 2021 J.A. Dror, B.V. Lehmann, H.H. Patel and S. Profumo,
"Discovering new forces with gravitational waves from supermassive black holes,"
Phys. Rev. D **104**, no.8, 083021 (2021)
doi:10.1103/PhysRevD.104.083021
[arXiv:2105.04559 [astro-ph.CO]]. PEER REVIEWED
- 195 2021 P. Giffin, J. Lloyd, S. D. McDermott and S. Profumo,
"Neutron star quantum death by small black holes,"
Phys. Rev. D **105**, no.12, 123030 (2022)
doi:10.1103/PhysRevD.105.123030
[arXiv:2105.06504 [hep-ph]]. PEER REVIEWED
- 196 2021 N. Smyth, L. Santos-Olmsted and S. Profumo,

- ``Gravitational baryogenesis and dark matter from light black holes,"
 JCAP **03**, no.03, 013 (2022)
 doi:10.1088/1475-7516/2022/03/013
 [arXiv:2110.14660 [hep-ph]]. PEER REVIEWED
- 197 2021 E. Orlando, E. Bottacini, A. Moiseev, A. Bodaghee, W. Collmar, T. Ensslin, I.V. Moskalenko, M. Negro, S. Profumo and M. G. Baring, et al.
 ``Exploring the MeV sky with a combined coded mask and Compton telescope: the Galactic Explorer with a Coded aperture mask Compton telescope (GECCO),"
 JCAP **07**, no.07, 036 (2022)
 doi:10.1088/1475-7516/2022/07/036
 [arXiv:2112.07190 [astro-ph.HE]]. PEER REVIEWED
- 198 2021 H. Steigerwald, D. Rodrigues, S. Profumo and V. Marra,
 ``Type Ia supernova magnitude step from the local dark matter environment,"
 Mon. Not. Roy. Astron. Soc. **510**, no.4, 4779-4795 (2022)
 doi:10.1093/mnras/stab3747
 [arXiv:2112.09739 [astro-ph.CO]]. PEER REVIEWED
- 166 2020 Hazma: A Python Toolkit for Studying Indirect Detection of Sub-GeV Dark Matter
 By Adam Coogan, Logan Morrison, Stefano Profumo.
 arXiv:1907.11846 [hep-ph].
 10.1088/1475-7516/2020/01/056.
 JCAP 2001 (2020) 056. PEER REVIEWED
- 167 2020 Updated Constraints on Asteroid-Mass Primordial Black Holes as Dark Matter
 By Nolan Smyth, Stefano Profumo, Samuel English, Tesla Jeltama, Kevin McKinnon,
 Puragra Guhathakurta.
 arXiv:1910.01285 [astro-ph.CO].
 10.1103/PhysRevD.101.063005.
 Phys.Rev. D101 (2020) no.6, 063005.
- 168 2020 An Introduction to Particle Dark Matter
 By Stefano Profumo, Leonardo Giani, Oliver F. Piattella.
 arXiv:1910.05610 [hep-ph].
 10.3390/universe5100213.
 Universe 5 (2019) no.10, 213.
- 169 2020 One-Loop Charge-Breaking Minima in the Two-Higgs Doublet Model
 By Pedro M. Ferreira, Logan A. Morrison, Stefano Profumo.
 arXiv:1910.08662 [hep-ph].
 10.1007/JHEP04(2020)125.
 JHEP 2004 (2020) 125.
- 171 2020 Loop Dominated Signals from Neutrino Portal Dark Matter
 By Hiren H. Patel, Stefano Profumo, Bibhushan Shakya.
 arXiv:1912.05581 [hep-ph].
 10.1103/PhysRevD.101.095001
 Phys. Rev. D 101, 095001 (2020)
- 173 2020 Implications for Electric Dipole Moments of a Leptoquark Scenario for the $B\text{-}S$ -Physics Anomalies
 By Wolfgang Altmannshofer, Stefania Gori, Hiren H. Patel, Stefano Profumo, Douglas Tuckler.
 arXiv:2002.01400 [hep-ph].
 10.1007/JHEP05(2020)069
J. High Energ. Phys. **2020**, 69 (2020).
- 174 2020 Cosmic-ray Antinuclei as Messengers of New Physics: Status and Outlook for the New Decade
 By P. von Doetinchem et al..
 JCAP **08**, 035 (2020)
 doi:10.1088/1475-7516/2020/08/035
 [arXiv:2002.04163 [astro-ph.HE]]. PEER REVIEWED

- 175 2020 Cosmology and prospects for sub-MeV dark matter in electron recoil experiments
By Benjamin V. Lehmann, Stefano Profumo. doi:10.1103/PhysRevD.102.023038
[arXiv:2002.07809 [hep-ph]]. PEER REVIEWED
- 176 2020 Dark Matter Indirect Detection
By S. Profumo.
doi:10.1051/epjconf/202023401014
EPJ Web Conf. **234** (2020), 01014 PEER REVIEWED
- 177 2020 The Smallest SU(3) Hadrons
by S. Profumo
[arXiv:2005.02512 [hep-th]]
Physical Review D, **102**, 035008 (2020)
10.1103/PhysRevD.102.035008 PEER REVIEWED
- 178 2020 Cosmological implications of the KOTO excess
By W. Altmannshofer, B. V. Lehmann and S. Profumo
Phys. Rev. D **102**, no.8, 083527 (2020)
[arXiv:2006.05064 [hep-ph]]. PEER REVIEWED
- 179 2020 Model-independent discovery prospects for primordial black holes at LIGO
By B. V. Lehmann, S. Profumo and J. Yant
Mon. Not. Roy. Astron. Soc. **501**, no.3, 3727-3740 (2021)

[arXiv:2007.00021 [astro-ph.CO]] PEER REVIEWED
- 155 2019 Comment on "keV Neutrino Dark Matter in a Fast Expanding Universe" by Biswas et al
By Nicolas Fernandez, Stefano Profumo.
arXiv:1810.06795 [hep-ph].
10.1016/j.physletb.2018.12.057.
Phys.Lett. B789 (2019) 603-604.
- 156 2019 Wobbly Dark Matter Signals at Cherenkov Telescopes from Long Lived Mediator
Decays
By Stefania Gori, Stefano Profumo, Bibhushan Shakya.
arXiv:1812.08694 [astro-ph.HE].
10.1103/PhysRevLett.122.191103.
Phys.Rev.Lett. 122 (2019) no.19, 191103.
- 157 2019 Melanopogenesis: Dark Matter of (almost) any Mass and Baryonic Matter from the
Evaporation of Primordial Black Holes weighing a Ton (or less)
By Logan Morrison, Stefano Profumo, Yan Yu.
arXiv:1812.10606 [astro-ph.CO].
10.1088/1475-7516/2019/05/005.
JCAP 1905 (2019) 005.
- 158 2019 Exploring a cosmic-ray origin of the multiwavelength emission in M31
By Alex McDaniel, Tesla Jeltema, Stefano Profumo.
arXiv:1903.06833 [astro-ph.HE].
10.1103/PhysRevD.100.023014.
Phys.Rev. D100 (2019) no.2, 023014.
- 159 2019 Connecting direct and indirect detection with a dark spike in the cosmic-ray electron
spectrum
By Adam Coogan, Benjamin V. Lehmann, Stefano Profumo.
arXiv:1903.07177 [astro-ph.HE].
10.1088/1475-7516/2019/10/063.
JCAP 1910 (2019) 063.
- 160 2019 Has AMS-02 Observed Two-Component Dark Matter?
By Stefano Profumo, Farinaldo Queiroz, Clarissa Siqueira.
J. Phys. G **48**, no.1, 015006 (2020) doi:10.1088/1361-6471/abbd20 [arXiv:1903.07638
[hep-ph]]. PEER REVIEWED
- 161 2019 Unraveling the origin of black holes from effective spin measurements with LIGO-Virgo
By Nicolas Fernandez, Stefano Profumo.
arXiv:1905.13019 [astro-ph.HE].

- 10.1088/1475-7516/2019/08/022.
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- P.18 2011 "Les Houches 2011: Physics at TeV Colliders New Physics Working Group Report," G. Brooijmans, B. Gripaios, F. Moortgat, J. Santiago, P. Skands, D. A. Vasquez, B. C. Allanach and A. Alloul et al., arXiv:1203.1488 [hep-ph].
- P.17 2011 "Evaluating the dark matter contribution to galactic synchrotron radiation, T. Linden, S.

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- P.12 2009 "Indirect detection of dark matter: Theory perspective", S. Profumo, *AIP Conf.Proc.* **1182** (2009) 256, prepared for CIPANP 2009
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- P.10 2009 "Non-thermal X-rays from the Ophiuchus galaxy cluster and dark matter annihilation", S. Profumo, *AIP Conf.Proc.* **1078** (2009) 551, prepared for the 16th International Conference on Supersymmetry
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Other Scholarly Activities

O.10 2022 J. Cooley, T. Lin, et al.
"Report of the Topical Group on Particle Dark Matter for Snowmass 2021," [arXiv:2209.07426 [hep-ph]]. INVITED

O.11 2022 A. Drlica-Wagner, et al.
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"Report of the Topical Group on Physics Beyond the Standard Model at Energy Frontier for Snowmass 2021," [arXiv:2209.13128 [hep-ph]]. INVITED

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"Strategy for Understanding the Higgs Physics: The Cool Copper Collider," [arXiv:2203.07646 [hep-ex]]. INVITED

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"Snowmass2021 Cosmic Frontier: The landscape of cosmic-ray and high-energy photon probes of particle dark matter," [arXiv:2203.06894 [hep-ex]]. INVITED

O.15 2022 W. Altmannshofer, S. A. Gadam and S. Profumo,
"Snowmass White Paper: Probing New Physics with $\mu^+ \mu^-$ at a Muon Collider," [arXiv:2203.07495 [hep-ph]]. INVITED

O.8 2017 **Scientific Paper:** US Cosmic Visions: New Ideas in Dark Matter 2017: Community Report

O.6 2014 **Scientific Paper:** "Planning the Future of U.S. Particle Physics (Snowmass 2013): Chapter 4: Cosmic Frontier", J.L. Feng, S. Ritz, J.J. Beatty, J. Buckley, D.F. Cowen, P. Cushman, S. Dodelson, C. Galbiati et al.. arXiv:1401.6085 [hep-ex].

O.9 2014 **Scientific Paper:** "Reply to Two Comments on "Dark matter searches going bananas the contribution of Potassium (and Chlorine) to the 3.5 keV line"", Tesla Jeltema, Stefano Profumo. arXiv:1411.1759 [astro-ph.HE].

O.5 2013 **Scientific Paper:** "Working Group Report: WIMP Dark Matter Indirect Detection", J. Buckley, D.F. Cowen, S. Profumo, A. Archer, M. Cahill-Rowley, R. Cotta, S. Digel, A. Drlica-Wagner et al.. arXiv:1310.7040 [astro-ph.HE].

O.2 2012 **Scientific Paper:** "Section on Prospects for Dark Matter Detection of the White Paper on the Status and Future of Ground-Based TeV Gamma-Ray Astronomy", J. Buckley *et al.*, e-Print: arXiv:0812.0795 [astro-ph], Report from the Dark Matter Science Working group of the APS commissioned White paper on ground-based TeV gamma ray astronomy

O.1 2012 **Scientific Paper:** "DUSEL Theory White Paper", S. Raby *et al.*, e-Print: arXiv:0810.4551 [hep-ph]

O.7 2012 **Book Chapter:** "TASI 2012 Lectures on Astrophysical Probes of Dark Matter", Stefano Profumo. Lecture notes delivered at TASI 2012, Boulder, CO.

O.4 2010 **Scientific Paper:** "Strong gravitational lensing probes of the particle nature of dark matter", L. Moustakas *et al.*, e-Print: arXiv:0902.3219, Science white paper submitted to the Astro2010 Decadal Cosmology & Fundamental Physics Science Frontier Panel

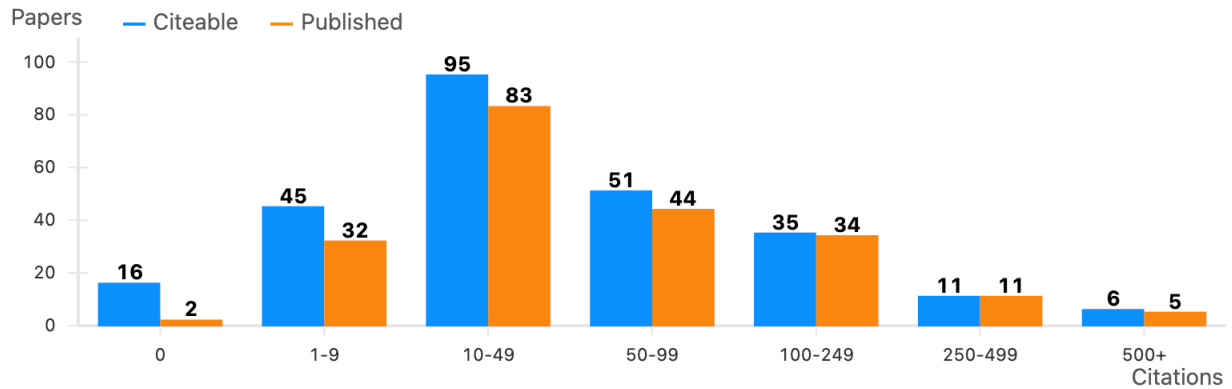
O.3 2009 **Edited Special Journal Issue :** Editor for the Special Focus Issue of the *New Journal of Physics* on "Dark Matter and Particle Physics", with E. Aprile. The Special Focus Issue appeared in Volume 11, October 2009 of the *New Journal of Physics*

SCHOLARLY WORK: CITATIONS SUMMARY¹

Citation Summary

Exclude self-citations [?]

	Citeable [?]	Published [?]
Papers	259	211
Citations	28,072	26,409
h-index [?]	73	72
Citations/paper (avg)	108.4	125.2



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- lectures 1
- thesis 1

Number of authors

- Single author 29
- 10 authors or less 234

Subject

- Astrophysics 200
- Phenomenology-HEP 191
- Experiment-HEP 25
- Gravitation and Cosmology 18
- Theory-HEP 16
- Other 7
- Instrumentation 5
- Experiment-Nucl 2
- Theory-Nucl 2
- Accelerators 1

¹ Source: [INSPIRE-HEP](#)

PROFESSIONAL ACTIVITIES

Public Lecture or Forum Participation

- 2022 **Invited Lecture:** Talk at Harker Prep School INVITED
- 2022 **Public Lecture:** "Concept Exchange" UCSC Alumni Forum Talk INVITED
- 2021 **Invited Lecture:** Issnaf - Italian Scientists and Scholars in North America Foundation INVITED
- 2021 **Public Lecture:** Slugs and Steins Talk (remote) INVITED
- 2014 UCSC Astronomy "Jamboree"
- 2014 **Popular Lecture:** "Science on Tap" Public Lecture Series: "Dark Matter" INVITED
- 2014 **Public Lecture:** First Year Honors (COWL 89) Faculty Research Lecture on "Dark Matter: Exploring the Hidden Universe" INVITED
- 2014 **Commencement Speech:** Phi Beta Kappa Induction Ceremony Speech INVITED
- 2013 UCSC Astronomy "Jamboree"
- 2013 **Commencement Speech:** UCSC Physics Department INVITED
- 2012 **Popular Lecture:** Society of Physics Students, UCSC
- 2012 **Department Service Lecture:** Extramural funding for graduate students
- 2008 **Popular Lecture:** Society of Physics Students, Santa Cruz, CA
- 2006 **Popular Lecture:** Mountain School of Art, Los Angeles, CA
- 2004 **Popular Lecture:** Istituto Nazionale di Architettura (National Institute for Architecture), Rome, Italy

Conferences and Meetings

- 2023 **Plenary Invited Talk:** UCLA Conference on Dark Matter INVITED
- 2023 **Plenary Invited Talk:** PetcovFest, SISSA-ISAS, Italy INVITED
- 2022 **Plenary Invited Talk:** PanAfrican Conference on Physics INVITED
- 2022 **Plenary Invited Talk:** The Mitchell Conference on Collider, Dark Matter, and Neutrino Physics 2022 INVITED
- 2022 **Plenary Invited Talk:** 7th Symposium on Neutrinos and Dark Matter in Nuclear Physics (NDM22) INVITED
- 2022 **Workshop Organization:** HOWIEFest
- 2022 **Workshop Organization:** Michigan Workshop on Dark Matter (Principal Organizer)
- 2021 **Plenary Invited Talk:** Beyond the Standard Model Conference INVITED
- 2021 **Plenary Invited Talk:** Particle Physics and Cosmology Conference INVITED
- 2021 **Plenary Invited Talk:** 1st workshop on gamma-ray pulsars (remote) INVITED
- 2021 **Plenary Invited Talk:** Pheno 2021 INVITED
- 2021 **Plenary Invited Talk:** International Conference on Cosmic Rays 2021 (remote) INVITED
- Sep 2020 **Plenary Invited Talk:** International Conference on New Frontiers in Physics INVITED
- Jul 2020 GECCO Telescope Collaboration Meeting INVITED
- May 2020 **Plenary Review Talk:** Pheno 2020, Madison, WI (delivered remotely) INVITED
- Feb 2020 **Plenary Talk:** KITP Conference on "Inflationary Reheating Meets Particle Physics Frontier" (INFLATION_C20) INVITED
- Aug 2019 **Plenary Talk:** Workshop on Dark Matter, University of Utah, Salt Lake City, UT INVITED
- Aug 2019 **Plenary Talk:** SLAC Summer Institute INVITED
- Aug 2019 **Plenary Review Talk:** Capri Workshop on "Flavour changing and conserving processes" 2019 (FCCP2019), Capri, Italy PEER REVIEWED INVITED

- Aug 2019 **Plenary Review Talk:** "Matera Oscura" conference, Matera, Italy INVITED
- Aug 2019 **Plenary Talk:** GGI Workshop on Dark Matter INVITED
- Jul 2019 **Lecture Series:** IX Next PhD School, Cambridge, UK INVITED
- May 2019 **Lecture Series:** Pre-SUSY School, UT Corpus Christi, TX
- Jan 2019 **Plenary Talk:** CTA Pathfinder conference, Tucson, AZ
- Jan 2019 **Plenary Talk:** TRIUMF workshop on dark matter
- Nov 2018 **Plenary Talk:** "XIIIth Workshop on B Physics" Marseille, France INVITED
- Oct 2018 **Plenary Talk:** Royal Society meeting on X-ray Astronomy and Fundamental Physics, Oxford, UK
- Sep 2018 **Plenary Talk:** Workshop on "Cosmology Frontier in Particle Physics: Astroparticle Physics and Early Universe", National Taiwan University INVITED
- Jul 2018 **Plenary Talk:** "Shedding Light On The Dark Universe With ELTs"
- May 2018 **Plenary Talk:** 2018 COFI workshop on "Searching for Physics Beyond the Standard Models Using Charge Leptons", Puerto Rico INVITED
- Jan 2018 **Lecture Series:** 5th Chilean School of High Energy Physics, Valparaiso, Chile
- Dec 2017 **Lecture Series:** Eleventh TRR33 Winter School on Cosmology, Passo del Tonale - Italy
- Jul 2017 **Plenary Review Talk:** Dark Side of the Universe, Daejeon, Korea INVITED
- Jan 2017 **Lecture Series:** a set of five lectures at a Mexican School on Particle Physics in Leon, Mexico INVITED
- 2017 **Plenary Talk:** Olivefest workshop, Minneapolis, MN INVITED
- 2017 **Plenary Review Talk:** Origins of Mass Conference, Odense, Denmark INVITED
- 2017 **Plenary Review Talk:** Lake Louise Winter Institute, Canada INVITED
- Sep 2016 **Lecture Series:** set of 5 lectures at the José Plínio Baptista School of Cosmology - The Dark Sector of the Universe in Vitoria, Brazil INVITED
- Jul 2016 **Lecture Series:** set of three lectures at the pre-SUSY 2016 Summer School in Melbourne Australia INVITED
- Jan 2016 **Lecture Series:** set of five lectures at the Galileo Galilei Institute in Florence, Italy INVITED
- 2016 **Invited Review Talk:** 3rd Berkeley Workshop on the Direct Detection of Dark Matter INVITED
- 2016 **Invited Plenary Review Talk:** SUSY 2016, Melbourne, Australia INVITED
- 2016 **Invited Plenary Talk:** Revealing the history of the universe with underground particle and nuclear research 2016, Tokyo University, Japan INVITED
- 2016 **Invited Plenary Talk:** Essential Cosmology for the Next Generation, Playa del Carmen, Mexico INVITED
- 2015 **Conference Organization:** Aspen Center for Physics Summer workshop on "New Directions to Shed Light on Dark Matter", lead organizer
- 2015 **Plenary Talk:** Particle Cosmology and Beyond 2015 Kanazawa, Japan INVITED
- 2015 **Invited Plenary Talk:** BLV 2015, Amherst, MA INVITED
- 2014 **Invited Plenary Review Talk:** "Dark Matter", EWASS 2014 : European Week of Astronomy and Space Science INVITED
- 2014 **Invited Review Talk:** "Dark Matter Candidates: a status report", EWASS 2014 : European Week of Astronomy and Space Science INVITED
- 2014 **Invited Lecture Series:** Lecture Series at the "Challenges in Modern Cosmology: Dark Matter and Dark Energy" School at the International Institute of Physics, Brazil INVITED
- 2014 **Conference Organization:** 2014 KITP Workshop on "Particlegenesis", Organizer
- 2014 **Plenary Review Talk:** INPAC 2014 Meeting, Asilomar INVITED
- 2014 **Contributed Talk:** INPAC 2014 Meeting, Asilomar, contributed talk INVITED

2014 **Conference Organization:** 2014 INPAC Asilomar Meeting INVITED

2014 **Invited Plenary Talk:** INPAC 2014, Asilomar, CA INVITED

2013 **Invited Plenary Talk:** VERITAS Collaboration Meeting, Santa Cruz (CA) INVITED

2013 **Invited Talk:** Introduction to "Indirect Dark Matter Detection", SLAC Cosmic Frontier Workshop INVITED

2013 **Invited Talk:** Invited review on "baryogenesis and Astrophysics", Cosmic Frontier Workshop, SLAC, March 2013 INVITED

2013 **Plenary Review Talk:** SLAC Summer Institute INVITED

2013 **Plenary Opening Talk:** SUSY 2013, Trieste, Italy INVITED

2013 **Plenary Talk:** Concerence Summary Talk, "Identifying and Characterizing Dark Matter via Multiple Probes", KITP, UC Santa Barbara INVITED

2013 **Invited Lecture Series:** pre-SUSY Summer School Lecture Series on "Dark Matter", ICTP, Trieste, Italy INVITED

2013 **Invited Lecture Series:** "Dark Matter" Lecture series, Summer School at the 13th International Conference on Topics in Astroparticle and Underground Physics Asilomar, California USA INVITED

2013 **Conference Organization:** 2013 KITP Workshop on "Dark Matter", Organizer

2013 **Conference Organization:** Haber-Dine Symposium, Santa Cruz, January 2013, Co-Organizer

2012 **Plenary Talk:** Workshop on the Identification of Dark Matter, Chicago, Illinois, (July) INVITED

2012 **Plenary Talk:** PASCOS 2012, Merida, Mexico, June INVITED

2012 **Plenary Talk:** April meeting of American Physical Society, "Cosmic rays in the search for dark matter" INVITED

2012 **Plenary Talk:** High-Energy Gamma-Ray Astrophysics Conference in Heidelberg (July) INVITED

2012 **Invited Plenary Review Talk:** 2012 Fermi Symposium, Monterey (CA) INVITED

2011 **Conference Organization:** 2011 Aspen Summer Workshop on Dark Matter (Organizer)

2011 **Plenary Talk:** Dark 2011, Heidelberg, Germany, October INVITED

2011 **Plenary Talk:** Electroweak Baryogenesis Workshop, Weizmann Institute, Israel, May INVITED

2011 **Conference Organization:** 2011 Aspen Winter Conference on "Indirect and Direct Detection of Dark Matter", Organizer

2010 **Plenary Talk:** Time and Matter 2010, Budva, Montenegro, October 4-8 INVITED

2010 **Plenary Talk:** SciNeGHE 2010, 8th Workshop on Science with the New Generation of High Energy Gamma-ray Experiments, Trieste, Italy, September 8 -10 INVITED

2010 **Plenary Talk:** Cosmo 10, University of Tokyo, September INVITED

2010 **Plenary Talk:** Identification of Dark Matter, Montpellier, France, July INVITED

2010 **Invited Speaker:** High Energy Astrophysics Division, Hawaii, March

2010 **Invited Speaker:** Texas 2010, Heidelberg, Germany, December INVITED

2009 **Conference Organization:** Organizer (with Dan Hooper (FNAL) and Fuminobu Takahashi (IMPU)), of the Focus Week on Indirect Dark Matter Searches, (Dec 7-11, 2009, Kashiwa Campus of the University of Tokyo)

2009 **Conference Organization:** Local Organizing Committee, Cosmology in Northern California (Santa Cruz, May 2009)

2009 **Plenary Talk:** IPMU Focus Week, December INVITED

2009 Fermilab Workshop on Dark Matter (October 2009) INVITED

2009 Michigan Workshop on Dark Matter (September 2009) INVITED

2009 **Invited Speaker:** Fermi Collaboration Meeting, Stanford, CA, September

2009 **Plenary Talk:** TeVPA, Stanford, CA, July INVITED

- 2009 **Invited Speaker:** KISS, Pasadena, CA, July
- 2009 **Plenary Talk:** SUSY 09, Boston, MA, June 2009 (Plenary Review Speaker)
INVITED
- 2009 **Invited Speaker:** APS Meeting, Denver, CO, May
- 2009 **Plenary Talk:** Particle Physics and Cosmology (PPC) 2009, Norman, OK, May
INVITED
- 2009 **Invited Speaker:** CIPANP 2009, San Diego, May 2009 (Invited Review Speaker)
- 2009 **Dark 2009,** Christchurch, New Zealand, January 2009 (Invited Plenary Speaker)
INVITED
- 2009 **Plenary Talk:** PPC 2009, Oklahoma, May INVITED
- 2008 **Conference Organization:** Session Chair, SUSY 08, Astroparticle and Cosmology
Session (Seoul, Korea, June 2008)
- 2008 **Plenary Talk:** New Paradigms of Dark Matter – UC Davis Workshop, December
2008, Davis, CA INVITED
- 2008 **Plenary Talk:** Cosmo 08, Madison, WI, August INVITED
- 2008 **Invited Speaker:** ICHEP 08, Philadelphia, PA, July
- 2008 **Invited Speaker:** SUSY 08, Seoul, Korea, June
- 2008 **Plenary Talk:** Pheno 08, Madison, WI, April INVITED
- 2008 **Invited Speaker:** CINC 08, Stanford, CA, April
- 2008 **Invited Speaker:** IFAE 08, Bologna, Italy, March
- 2008 **Invited Speaker:** Moriond 08, La Thuile, Italy, March
- 2007 **Conference Organization:** Organizer and Convener, SUSY 07, Astroparticle and
Cosmology Session (Karlsruhe, Germany, July 2007)
- 2007 **Invited Speaker:** SUSY 07, Karlsruhe, Germany, July 2007 (Invited Speaker and
Session Convener)
- 2007 **Plenary Talk:** Gordon Research Conference, Nuclear Physics, Salve Regina
University, Newport, RI, July INVITED
- 2007 **Plenary Talk:** EDM Workshop INT07, University of Washington, Seattle, WA,
March INVITED
- 2006 **Invited Speaker:** TASC 06, Santa Barabra, CA, October
- 2006 **Invited Speaker:** COSMO 06, Lake Tahoe, CA, September
- 2006 **Plenary Talk:** PASCOS 2006, Ohio State University, Columbus, OH, September
INVITED
- 2006 **Invited Speaker:** SUSY 06, Irvine, CA, June
- 2006 **Invited Speaker:** DM 06, Marina del Rey, CA, February, INVITED
- 2005 **Invited Speaker:** TeV Particle Astrophysics Workshop, Fermilab, July
- 2005 **Invited Speaker:** TASC 05, Pasadena, CA, October
- 2005 **Invited Speaker:** Pheno 05, Madison, WI, May
- 2005 **Invited Speaker:** Moriond 05 (EW Session), La Thuile, Italy, March
- 2004 **Invited Speaker:** Frontier Science 2004, Frascati, Italy, June
- 2004 **Invited Speaker:** Moriond 04 (Cosmology), La Thuile, Italy, March-April
- 2003 **Invited Speaker:** Moriond 03 (EW), La Thuile, Italy, March
- Plenary Talk:** Texas 2008 Symposium on Relativistic Astrophysics, Vancouver, BC,
December INVITED

Memberships or Activities in Professional Associations

2020 - Present CalBridge Mentor

2018 - Present **Program Committee:** Division of Particles and Fields, American Physical Society

2019 - 2021 **Member-at-Large-Elect:** Division of Astrophysics, American Physical Society

- 2019 - 2021 **Executive Committee:** Division of Astrophysics, American Physical Society
- 2015 - 2018 **Government Advisory Committee:** Member of the High-Energy Physics Advisory Panel (HEPAP): The Committee advises at the highest level the National Science Foundation and the Department of Energy, and it meets typically 5-6 times per year in Washington DC (once per year via videoconference). INVITED

Editorial Services

- 2024 - Present **Advisory Board Editor:** *Asymmetry*
- 2024 - Present **Editor:** Trends in Theoretical Physics (TTP)
- 2023 - Present **Journal Editor; Editor-in-Chief:** World Journal of Physics
- 2019 - Present **Journal Editor; Editor-in-Chief:** Editor-in-Chief for "Physics and Symmetry" of Symmetry Magazine
- 2016 - Present **Journal Editor:** Editorial Board, "Symmetry" INVITED
- 2014 - Present **Journal Editor:** Editorial Board for "Space Science and Astrophysics" INVITED
- 2012 - Present **Journal Editor; Editor-in-Chief:** Founding Editor, and Editor-in-Chief, Physics of the Dark Universe (Elsevier Journal)
- 2012 - Present **Journal Editor:** Editor of "Scientific World Journal" for Astronomy
- 2012 - Present **Journal Editor:** Editor of "Dataset Papers in Physics" for High Energy Physics
- 2009 - 2010 **Journal Editor:** Guest Editor, New Journal of Physics

Review/Referee Grants, Proposals and Publications

- 2023 - Present **Referee:** Physical Sciences Forum
- 2022 - Present **Referee:** American Institute of Physics' and the Society of Physics Student's Journal of Undergraduate Reports in Physics
- 2022 - Present **Referee:** Karbala Journal of Modern Science
- 2020 - Present **Referee:** Science
- 2020 - Present **Referee:** Universe
- 2020 - Present Reviewer for NSF's Graduate Research Fellowship Program (Physics, Mathematics and Astronomy) INVITED
- 2018 - Present **Referee:** Chinese Physics C
- 2017 - Present **Referee:** Reports on Progress in Physics
- 2017 - Present **Referee:** Frontiers
- 2016 - Present **Referee:** PLoS
- 2016 - Present **Referee:** Journal of Astrobiology & Outreach
- 2013 - Present **Book Reviewer:** Book Reviewer for Imperial College Press
- 2010 - Present **Book Reviewer:** Book Reviewer for Pearson / Addison-Wesley
- 2008 - Present **Grants Proposal Reviewer and Panelist:** Proposal reviewer and panelist for NASA, the National Science Foundation and the Department of Energy, Office of High Energy Physics INVITED
- 2008 - Present **Grant Reviewer:** Research Grant Proposal Reviewer for the National Science Agencies of: Australia, Austria, Canada, Chile, Estonia, France, Germany, Hong Kong, Italy, Japan, Kazakhstan, Netherlands, Poland, South Africa, and Switzerland. INVITED
- 2004 - Present **Referee:** Nature
- 2004 - Present **Referee:** Physical Review Letters
- 2004 - Present **Referee:** Physical Review D
- 2004 - Present **Referee:** Physics Reports
- 2004 - Present **Referee:** Physics Letters B
- 2004 - Present **Referee:** Journal of High Energy Physics

- 2004 - Present **Referee:** Journal of Cosmology and Astroparticle Physics
- 2004 - Present **Referee:** Classical and Quantum Gravity
- 2004 - Present **Referee:** Astrophysics Journal
- 2004 - Present **Referee:** Astrophysics Journal Letters
- 2004 - Present **Referee:** Journal of Physics G
- 2004 - Present **Referee:** New Journal of Physics A
- 2004 - Present **Referee:** Advances in Astronomy
- 2004 - Present **Referee:** Monthly Notices of the Royal Astronomical Society
- 2004 - Present **Referee:** Nuclear Inst. and Methods in Physics Research
 - 2014 **Referee/Grants Reviewer:** Referee and Grant Proposal Reviewer for the Research Corporation for Science Advancement INVITED
 - 2014 **Grant reviewer:** Cottrell College Science Award Reviewer 2104 - present INVITED
 - 2014 **Grant Review Panelist:** NASA Astrophysics Theory Program Panelist and Reviewer PEER REVIEWED INVITED

Local, State or Federal Government Service

- 2009 - Present **Reviewer:** Grant Proposal Reviewer for Department of Energy, National Science Foundation and NASA
 - 2024 **Grant Review Panelist:** Department of Energy National Laboratories Theory Groups Review
- Fall 2022 **NSF Physics Frontier Center Reviewer:** Reviewer for NSF Physics Frontier Center INVITED
- 2022 **Panelist:** National Science Foundation Physics Frontier Centers Reviewer PEER REVIEWED INVITED
- 2017 **Grant Review Panelist:** DoE Career Award Panel INVITED
- 2017 **Grant Reviewer:** NASA Astrophysics Data Analysis Program INVITED
- 2017 **Grant Review Panelist:** NSF CAREER panel
- 2016 **Grant Review Panelist:** NSF Particle Theory and Cosmology Panel
- 2015 **Grant Review Panelist:** DoE Cosmic Frontier Review Panel
- 2014 **Grant Review Panelist:** Department of Energy Comparative Review of Theory Groups at all National Laboratories INVITED
- 2014 **Federal Fellowship Committee:** NASA Einstein Fellowship Committee INVITED
- 2014 **Grant Review Panelist:** NASA Astrophysics Theory Program Panelist and Reviewer INVITED
- 2014 **Grant Reviewer:** DoE Early Career Research Program Reviewer INVITED
- 2014 **Grant Review Panelist:** Department of Energy Cosmic Frontier Comparative Review Panel INVITED
- 2013 **Grant Review Panelist:** Joint DoE-NSF Panel on Generation-2 Direct Dark Matter Experiments Selection INVITED
- 2013 **Grant Review Panelist:** NSF Physics Frontier Center Comparative Review Panel INVITED
- 2013 **Grant Review Panelist:** US Department of Energy's 2013 Office of Science Early Career Research Program Selection Committee INVITED
- 2012 **Grant Review Panelist:** NSF high-energy theory and cosmology comparative review panel INVITED
- 2010 **Grant Review Panelist:** NASA Astrophysics Theory Program Panelist and Reviewer INVITED
- 2008 **Grant Review Panelist:** Proposal reviewer and panelist for the NASA Astrophysics Theory and Fundamental Physics (ATFP) Program INVITED

Talks and Presentations at Colleges and Universities

- 2023 **Colloquium:** Brookhaven National Laboratory, Physics Colloquium INVITED
- 2023 **Colloquium:** University of Melbourne, Australia, Physics Colloquium INVITED
- 2023 **Colloquium:** Special Colloquium, UCSC, Physics Department on the occasion of prospective graduate students visit INVITED
- 2023 **Colloquium:** Early Universe & ALICE Forum (China) INVITED
- 2022 **Colloquium:** University of Illinois, Chicago, colloquium INVITED
- 2022 **Lecture Series:** TASI 2022 (week-long lecture series) INVITED
- 2022 **Colloquium:** Oklahoma University Physics Dpt Colloquium INVITED
- 2021 **Colloquium:** Free Meson Seminar (India, remote) INVITED
- 2021 **Colloquium:** UCSC joint Mathematics and Physics Colloquium INVITED
- Mar 2020 **Colloquium:** Quantum Aspects of Space and Time, Max Planck Institute, Germany (delivered online) INVITED
- Jan 2020 **Colloquium:** Pennsylvania State University INVITED
- 2020 **Seminar:** University of Chicago/Northwestern University (delivered remotely) INVITED
- 2020 **Collaboration meeting Seminar:** GECCO Collaboration on New Physics Opportunities with GECCO
- 2020 **Colloquium:** ICTS, India (remote) INVITED
- 2020 **Colloquium:** ICTP-SAIFR (Brazil) INVITED
- Jan 2019 **Colloquium:** UCSC Physics Department Colloquium INVITED
- 2019 **Colloquium:** TRIUMF, Vancouver INVITED
- 2019 **Colloquium:** University of Sussex, UK
- 2018 **Seminar:** Blackboard talk, UCSC Astronomy & Astrophysics INVITED
- 2018 **Colloquium :** UC Berkeley INVITED
- 2018 **Colloquium:** Sonoma State University INVITED
- 2018 **Colloquium:** National Taiwan University, Taipei, Taiwan INVITED
- 2018 **Colloquium:** University of California, Riverside INVITED
- 2018 **Seminar:** SCIPP seminar, UCSC
- 2017 **Colloquium:** Universite Libre de Bruxelles INVITED
- 2017 **Colloquium:** Princeton University INVITED
- 2017 **Outreach talk:** First year honors (UCSC)
- 2016 **Colloquium:** Argonne National Laboratory INVITED
- 2016 **Colloquium:** Stanford University INVITED
- 2016 **Colloquium:** UC Berkeley INVITED
- 2016 **Colloquium:** Perimeter Institute for Theoretical Physics INVITED
- 2015 **Colloquium:** San Francisco State University INVITED
- 2015 **Colloquium:** Queen's University INVITED
- 2015 **Colloquium:** Harvard University INVITED
- 2015 **Colloquium:** Vanderbilt University INVITED
- 2014 **Colloquium:** Tufts University INVITED
- 2014 **Colloquium:** TRIUMF INVITED
- 2014 **Colloquium:** Arizona State University INVITED
- 2014 **Colloquium:** University of Wisconsin, Madison INVITED
- 2014 **Colloquium:** University of New Mexico INVITED
- 2014 **Colloquium:** SLAC INVITED
- 2014 **Colloquium:** UC Santa Cruz, Physics Department INVITED

2014 **Colloquium:** University of Massachusetts, Amherst INVITED
2014 **Colloquium:** Fermilab National Laboratory INVITED
2014 **Online Seminar:** "The invisibles" online seminar INVITED
2014 **Colloquium:** University of Massachusetts, Amherst INVITED
2013 **Colloquium:** Northwestern University INVITED
2013 **Colloquium:** University of California, Davis INVITED
2013 **Colloquium:** Cornell University INVITED
2013 **Colloquium:** Syracuse University INVITED
2013 **Colloquium:** MIT INVITED
2013 **Invited Plenary Talk:** TeV Particle Astrophysics Conference, Irvine, CA INVITED
2012 **Invited Lecture:** TASI 2012 Summer School, Boulder, CO
2012 Institute for Advanced Studies, Princeton, NJ (March)
2012 UC Berkeley Center for Theoretical Physics (September)
2011 **Colloquium:** San Francisco State University, CA (December) INVITED
2011 **Colloquium:** University of Maryland, College Park, MD, USA (February) INVITED
2011 Max Planck Institute, Dußseldorf, Germany (February)
2010 University of California, Santa Cruz, Astronomy Department Colloquium (June)
2010 University of California, Davis (May)
2010 University of Wisconsin, Madison (April)
2010 University of Maryland, College Park (April)
2010 Johns Hopkins University, Baltimore, MD (March)
2010 Bartol Research Institute, Newark, DE (March)
2010 Carnegie Mellon University, inaugural Cosmology Colloquium, Pittsburgh, PA, USA (January)
2010 Karlsruhe Institute of Technology, Karlsruhe, Germany (December)
2010 University of Texas, inaugural Cosmology Colloquium, Austin, TX, USA (August)
2009 University of California, Berkeley, CA (May)
2009 CITA, Toronto, ON (April)
2009 University of Pittsburgh, PA (April)
2009 Ohio State University, Columbus, OH (April)
2009 Indiana University, Bloomington, IN (April)
2009 Brookhaven National Laboratory, NY (April)
2009 University of New Mexico, Albuquerque, NM (April)
2009 University of Minnesota, Minneapolis, MN (March)
2009 UC Santa Cruz, CA (February)
2009 Stanford, CA (January)
2008 KICP, Chicago, IL (October)
2008 University of Minnesota, Minneapolis, MN (October)
2008 Ohio State University, Columbus, OH (April)
2008 SISSA, Trieste, Italy (March)
2008 SLAC, Stanford, CA, USA (January)
2007 University of Chicago, Chicago, IL, USA (November)
2007 Fermilab, Batavia, IL, USA (April)
2007 University of Southern California, Los Angeles, CA, USA (March)
2007 University of California, Santa Cruz, CA, USA (March)
2007 Columbia University, New York, NY, USA (March)
2007 Massachusetts Institute of Technology, Boston, MA, USA (February)

- 2007 Lawrence Livermore National Laboratory, Livermore, CA, USA (January)
- 2006 Stanford University, Stanford, CA, USA (December)
- 2006 Ohio State University, Columbus, OH, USA (September and November)
- 2006 Los Alamos National Laboratory, Los Alamos, NM, USA (October)
- 2006 CERN Theory Division, Genève, Switzerland (August)
- 2006 Institute for Advanced Studies, Princeton, NJ, USA (May)
- 2006 University of California at Davis, Davis, CA, USA (April)
- 2006 California Institute of Technology, Pasadena, CA, USA (January)
- 2005 Case Western Reserve University, Cleveland, OH, USA (November)
- 2005 Fermilab, Batavia, IL, USA (November)
- 2005 University of Florida, Gainesville, FL, USA (April)
- 2005 University of Torino, Torino, Italy (March)
- 2005 University of California at Riverside, Riverside, CA, USA (February)
- 2005 University of California at Los Angeles, Los Angeles, CA, USA (February)
- 2005 ICTP, Trieste, Italy (January)
- 2004 University of Padua, Padua, Italy (June)
- 2004 Niels Bohr Institute, Copenhagen, Denmark (April)

Other Professional Activities

- 2016 - Present Executive Committee, Kavli Summer Program in Astrophysics INVITED
- 2016 - Present **Academic Personnel Evaluator:** Evaluated personnel files for hires, promotion to tenure, promotion to Associate and Full Professor of several (~5/year) US and international colleagues
- 2009 - Present **Representative:** Representative for the Astro-Particle Physics Community to the Working Group on Laboratory Astrophysics (WGLA) of the American Astronomical Society INVITED
- 2008 - Present **Reviewer:** Research Grant Proposal Reviewer for the science agencies of the European Union, Austria, Canada, Chile, Estonia, France, Australia, Kazakhstan, Italy, Netherlands, Switzerland, South Africa and Japan. INVITED
- 2023 **Workshop Organization:** University of Michigan Workshop on Dark Matter (Principal Organizer)
- Sep 2019 **Workshop Organization:** Organizer of Galileo Galilei Institute Workshop on Dark Matter, Florence, Italy
- 2018 **Book reviewer:** *Mathematical Methods and Physical Insights* by Alec Schramm
- 2017 **Book Reviewer:** Gibbson "Classical Mechanics"
- 2008 - 2017 **Mentor:** AIP/SPS, APS and AAPT Program "Adopt a Physicist"(<http://www.adoptaphysicist.org/>)
- 2010 **Mentor:** UC LEADS Program
- 2009 **Mentor:** NASA M.U.S.T. (Motivating Undergraduates in Science and Technology) Program
- 2009 **Visiting Appointment:** California Institute of Technology
- 2008 Convener and Dark Matter Session Leader on the NSF White Paper for the theoretical justification for a Deep Underground Science and Engineering Laboratory [DUSEL], Ohio State University, Columbus, OH
- 2008 **Visiting Appointment:** University of Wisconsin, Madison
- 2007 Convener, White Paper for the Department of Energy, Office of Nuclear Physics, Long Range Plan NSF Advisory Panel
- 2006 **Visiting Appointment:** CERN, Theory Division
- 2006 School of Natural Sciences, Institute for Advanced Studies

1997 - 2001 Undergraduate work in Physics, Scuola Normale Superiore, Pisa, and University of Pisa
Field: Theoretical Physics

UNIVERSITY SERVICE

Academic Senate Service

- 2023 - Present University of California Assembly of the Academic Senate
- 2023 - Present University of California Joint Senate-Administration Achievement Relative to Opportunities (ARO) Workgroup
- 2023 - Present University of California Academic Planning Council
- 2023 - Present Chair, University of California Committee on Academic Personnel (UCAP)
- 2023 - Present University of California Academic Council
- 2023 - Present Advancing Faculty Diversity Advisory Group: Convened by UCOP to oversee the Advancing Faculty Diversity program in support of pathways to a diverse professoriate and of improved academic climates. Meets twice per year and members are invited to attend the AFD gatherings.
- Fall 2021 - Present CCA: Research Workshops
 - 2022 - 2023 CCA & CITL Workshop: Preparing for your first personnel review, Speaker
 - 2022 - 2023 CCA: Path to Tenure Workshop, Speaker
 - 2022 - 2023 DCDS Spring event—Academic Personnel Review Process, Speaker
 - 2021 - 2023 Senate Executive Committee, Member
 - 2021 - 2023 Chair, Committee on Academic Personnel
 - 2019 - 2023 Committee on Academic Personnel
 - 2018 - 2019 UCSC Faculty Mentorship Program Mentor
 - 2018 - 2019 SAP Themed Academic Working Group Member
 - 2018 VPDGS Selection Subcommittee (SEC)
 - 2016 - 2018 University of California system-wide Committee on Faculty Welfare (UCFW)
 - 2016 - 2018 Committee on Emeriti Relations
 - 2016 - 2018 Senate Executive Committee
 - 2016 - 2018 Chair, Committee on Faculty Welfare
- Jul 2014 - 2016 Graduate Council

Service to the Division

- Mar 2024 - Present Associate Dean for Graduate Studies and Postdoctoral Affairs
- 2021 - Present PBSci DEI Interdepartmental Summit, Member
- 2018 - Present SLAC-UCSC Postdoctoral Fellowship Selection Committee (A&A+Physics)
 - Jun 2 2023 Oral Qualifying Committee Member for the Department of Mathematics (Amethyst Price on "Quaternionic Triangle Groups and Topographs")
 - 2019 Selection committee for analyst position
 - 2018 Member: Astro, Physics, Planetary Science (division) high impact science working group
- 2017 - 2018 Academic Strategic Planning Process with Entangled Solutions
 - 2017 Orals committee member, Mathematics Department
 - 2013 PBSci ARCS Selection Committee
 - 2012 PBSci ARCS Selection Committee

Service to the Department

- Fall 2024 - Present Chair, Colloquium Committee
- Fall 2023 - Present Chair, Physics Department Climate, Diversity, Equity and Inclusion Committee
- 2022 - Present Member, Graduate Committee
- 2017 - Present Speaker at the local chapter of the Society of Physics Students
- 2017 - Present Faculty point of contact for Major Declaration

Jul 2011 - Present Deputy Director for Theory, Santa Cruz Institute for Particle Physics
 Winter 2023 SCIPP Masterclass, Speaker
 Winter - Fall 2022 Chair, Faculty Search Committee in Theoretical Particle Physics and Cosmology
 2020 - 2022 Graduate Climate Committee, Member/Co-Chair
 2018 - 2022 Chair, Graduate Committee
 2021 Graduate Advisor Selection Committee, Member
 2008 - 2021 Co-organizer of SCIPP and Theory seminars/meetings
 Winter 2017 Colloquium Committee
 2017 Physics Graduate Advisor Search Committee
 2016 - 2017 Chair, Search Committee for Faculty Position in Theoretical Particle Physics and Cosmology
 2013 - 2017 Chair, Graduate Committee
 2009 - 2017 Physics Department Graduate Committee
 2009 - 2010 Ron Ruby Fellowship Committee
 2008 - 2009 Ron Ruby Fellowship Committee
 2008 - 2009 Physics Department Undergraduate Curriculum Committee
 2008 - 2009 Physics Department Colloquium Committee (Winter Quarter)
 2007 - 2008 Ron Ruby Fellowship Committee
 2007 - 2008 Physics Department Undergraduate Curriculum Committee
 2007 - 2008 Physics Department Mentoring Committee

Other Service to the Campus

2021 - Present ACE Peer Review & Steering Committee/Sub Committee and Engaged Faculty and Staff, Member
 2018 - Present Faculty point of contact and Coach, UCSC Triathlon Club
 2014 - Present Faculty point of contact for UCSC Cycling Team
 2013 - Present Head Coach, UCSC Cross Country Running Club
 Spring 2023 DARE Visit: Administrators and Senate Leaders Panel, Panelist
 Winter 2023 PBSci Dean Search, Senate Subcommittee Member
 2021 - 2023 UCSC Assistant Teaching Professors monthly group meetings, Advisor
 2021 - 2023 Writing Fellows Meetings, Advisor
 2021 - 2022 Senate-Administration COVID Workgroup
 2021 - 2022 SEA Change, Member, in charge of sections on Academic Personnel
 Fall 2021 Arts Division Leadership training meeting
 2021 Athletics & Recreation Associate Director of Facilities & Maintenance Candidate Selection, Advisor
 2021 Advisor to UCSC's Rocket Team
 2021 BSOE Awards Selection Committee Member
 2021 VPDGS Hiring Committee Advisor
 2020 #NewSlug2020 Final Vote Committee
 2019 ACE/Collaboration Sub-Committee

K-12 Outreach

2023 - Present Math Contest Judge, Santa Cruz County
 2023 - Present Science Fair Judge, Santa Cruz County Finals
 2022 - Present Middle School and Pacific Collegiate School Cross Country Coach
 2022 - Present Santa Cruz Composite Mountain Bike Coach and Mentor (Middle School)
 2022 - Present Science Fair Judge, Westlake Elementary School
 2019 - Present MathMonday volunteer (<https://mathmonday.net>), Westlake Elementary School

- 2019 - Present Teaching Assistant in Mathematics, 4th grade, Westlake Elementary School
- 2019 Public Lecture on "Black Holes", Westlake Elementary School
- 2017 "Doing Research" talk at Aptos High School
- 2014 Lecturer at the 2014 SCIPP Quarknet High School Program
- 2013 Lecturer at the 2013 SCIPP Quarknet High School Program
- 2010 - 2013 Web contributor to the "Adopt a Physicist" Program
- 2012 Lecturer at the 2012 SCIPP Quarknet High School Program
- 2011 Lecturer at the 2011 SCIPP Quarknet High School Program

MENTORING AND STUDENT ADVISING

Postdoctoral Scholars

Dates	Relationship	Degree Year	Name and Activities
Fall 2023 - Present	Primary Supervisor		Reuven Balkin
Fall 2023 - Present	Primary Supervisor		Sarah Geller
2021 - Present	Primary Supervisor		William DeRocco
2020 - Fall 2023	Primary Supervisor		Jeff Dror
Fall 2017 - Fall 2020	Primary Supervisor		Hiren Patel
2015 - 2017	Primary Supervisor		Francesco D'Eramo
2014 - 2017	Primary Supervisor		Tim Stefaniak
2013 - 2015	Primary Supervisor		Alma Gonzalez
2012 - 2015	Primary Supervisor		Farinaldo Queiroz
2012 - 2015	Primary Supervisor		William Shepherd
2010 - 2012	Primary Supervisor		Iris Gebauer
2017 - Present	Co Supervisor		Akshay Ghalsasi
2017 - 2019	Co Supervisor		Dean Robinson
2017 - 2019	Co Supervisor		Bibhushan Shakya

Doctoral Students

Dates	Relationship	Degree Year	Name and Activities
2022 - Present	Primary Supervisor		Chris Ewasiuk
2021 - Present	Primary Supervisor		Kristen Funk
2021 - Present	Primary Supervisor		Grant Roberts
2021 - Present	Primary Supervisor		Jordan Scharnhorst
2019 - Present	Primary Supervisor		Samuel English
2019 - Present	Primary Supervisor		Gabriela Huckabee
2018 - Present	Primary Supervisor		Nolan Smyth
2021 - 2023	Primary Supervisor		Vivian Tang
2018 - 2023	Primary Supervisor	2023	Yan Yu
2016 - 2022	Primary Supervisor	2022	Benjamin Lehman
2016 - 2022	Primary Supervisor	2022	John Tamanas
2016 - 2022	Primary Supervisor	2022	Jaryd Ulbricht
2015 - 2022	Primary Supervisor	2022	Logan Morrison
2018 - 2021	Primary Supervisor	2021	Javier Reynoso - (University of Guanajuato, Mexico)
2016 - 2020	Primary Supervisor	2020	David Reiman
2015 - 2019	Primary Supervisor	2019	Nicolas Fernandez
2014 - 2019	Primary Supervisor		Eric Miller - Withdrew

2012 - 2019	Primary Supervisor	2019	Adam Coogan
2011 - 2016	Primary Supervisor	2016	Eric Carlson
2011 - 2015	Primary Supervisor	2015	Jonathan Cornell
2010 - 2013	Primary Supervisor	2013	Jonathan Kozaczuk
2008 - 2013	Primary Supervisor	2013	Timothy Linden
2008 - 2013	Primary Supervisor	2013	Carroll (Max) Wainwright
2010 - 2011	Primary Supervisor	2012	Sofiane Boucenna
2008	Primary Supervisor	2011	John Kehayias
2022 - Present	Co Supervisor	2023	Aurora Ireland - (University of Chicago)
2022 - Present	Co Supervisor	2023	Mrunal Korwar - (University of Wisconsin)
2022 - Present	Co Supervisor		Pankaj Mundobh
2022 - Present	Co Supervisor	2023	Fengwei Yang - (University of Utah)
2021 - Present	Co Supervisor		Evan Frangipane
2019 - Present	Co Supervisor		Aditya Gadam
2019 - Present	Co Supervisor		Pierce Giffin
2019 - Present	Co Supervisor		Heather Mentzer
2018 - Present	Co Supervisor		Clarissa Siqueira - co-advised with Farinaldo Queiroz
2018 - Present	Co Supervisor	2020	Douglas Tuckler - co-advised with Stefania Gori
2013 - Present	Co Supervisor		Oscar Macias
2018 - 2020	Co Supervisor	2020	Brian Maddock - co-advised with Wolfgang Altmannshofer
2016 - 2020	Co Supervisor	2020	Alex McDaniel - co-advised with Professor Tesla Jeltema
2011 - 2018	Co Supervisor	2018	Laurel Stephenson Haskins - co-supervised with Michael Dine
2014 - 2015	Co Supervisor		Nikita Blinov
2008 - 2014	Co Supervisor	2013	Peter Manning
2008 - 2012	Co Supervisor	2012	Fabio Zandanel
			2008 - Present Co-Supervisor - Granada, with F. Prada
2008 - 2011	Co Supervisor	2011	Lorenzo Ubaldi
2007 - 2009	Co Supervisor		Marco Taoso
			2007 - 2009 Co-Supervisor - Padova, with G. Bertone and A. Masiero
2006 - 2008	Co Supervisor		Sean Tulin
			2006 - 2008 Co-Supervisor - Caltech, with M. Ramsey-Musolf
2005 - 2008	Co Supervisor		Alessio Provenza
			2005 - 2008 Co-Supervisor - SISSA-ISAS, with P. Ullio
2009	Other Advisor		Brandon Anderson
			2009 Orals Committee
2009	Other Advisor		Sheridan Zalewski
			2009 Orals Committee

2008 Other Advisor

Doug Spolyar

2008 Orals Committee

Masters Students

Dates	Relationship	Degree Year	Name and Activities
2022 - Present	Primary Supervisor		Julia Monika Kuhlen
2020 - Present	Primary Supervisor		Juliette Blé
2018 - Present	Primary Supervisor		Adam Duran
2021 - 2023	Primary Supervisor	2023	Xavier Boluna
2021 - 2022	Primary Supervisor	2022	Federico Compagnin - University of Turin, Italy

Undergraduate Students

Dates	Relationship	Degree Year	Name and Activities
2023 - Present	Primary Supervisor		Su Koç
2023 - Present	Primary Supervisor		Ben Schmitt
2023 - Present	Primary Supervisor		Joseph Wang
2022 - Present	Primary Supervisor		Josepf Amador-Fuentes
2022 - Present	Primary Supervisor		Hafizullah Amiri
2022 - Present	Primary Supervisor		Kalea Bantilan
2022 - Present	Primary Supervisor		Lila Braff
2022 - Present	Primary Supervisor		Zoe Fedorko
2022 - Present	Primary Supervisor		Aditi Gangadharan
2022 - Present	Primary Supervisor		Eric Gonzalez
2022 - Present	Primary Supervisor		Eric Hanaway
2022 - Present	Primary Supervisor		Dean Howell
2022 - Present	Primary Supervisor		Aria Koul
2022 - Present	Primary Supervisor		Run Li
2022 - Present	Primary Supervisor		Anika Malladi
2022 - Present	Primary Supervisor		Osiel Mendoza
2022 - Present	Primary Supervisor		Angel Morales
2022 - Present	Primary Supervisor		Michael Ortega
2022 - Present	Primary Supervisor		Aaron Petersen

Present			
2022 - Present	Primary Supervisor		Joey Salinas
2022 - Present	Primary Supervisor		Klaus Stephenson
2022 - Present	Primary Supervisor		Camellia Tamraz
2022 - Present	Primary Supervisor		Ben Theunissen
2022 - Present	Primary Supervisor		Jet Widjaja
2022 - Present	Primary Supervisor		Benjamin Zhu
2021 - Present	Primary Supervisor		Dana Hennings
2021 - Present	Primary Supervisor	2023	Anna Lewicki
2021 - Present	Primary Supervisor		Deeya Viradia
2019 - Present	Primary Supervisor	2022	Christopher Cagnino
2019 - Present	Primary Supervisor	2022	James Fardeen
2017 - Present	Primary Supervisor	2019	Steven Corley
2022 - 2023	Primary Supervisor		Kayla Bartel
2022 - 2023	Primary Supervisor	2023	Shashank Dharanibalan
2022 - 2023	Primary Supervisor	2023	Lam Do
2021 - 2023	Primary Supervisor	2023	Druval Thrivedi
2021 - 2023	Primary Supervisor	2023	Jianhong Zhuo
2020 - 2023	Primary Supervisor	2023	Nate Wachter
2020 - 2022	Primary Supervisor	2022	Mason Hargrave
2020 - 2022	Primary Supervisor	2022	Lilian Santos
2019 - 2022	Primary Supervisor	2022	Thomas Altaffer
2019 - 2022	Primary Supervisor	2022	Alan Brilliant
2019 - 2022	Primary Supervisor	2022	Audrey Do
2019 - 2022	Primary Supervisor	2022	Matthew Duong
2019 - 2022	Primary Supervisor	2022	Henri Geneste
2019 - 2022	Primary Supervisor	2022	Jiamu Huang
2019 - 2022	Primary Supervisor	2022	Brady Lobmeyer
2019 - 2022	Primary Supervisor	2022	Lili Manzo
2019 - 2022	Primary Supervisor	2022	Collin O'Connor
2019 - 2022	Primary Supervisor	2022	Zachary Pizzo
2019 - 2022	Primary Supervisor	2022	Emma Potter
2019 - 2022	Primary Supervisor	2022	Anna Promokhova
2019 - 2022	Primary Supervisor	2022	Justine Rafael
2019 - 2022	Primary Supervisor	2022	Connor Sweeney
2019 - 2022	Primary Supervisor	2022	Washington (Trey) Vera
2019 - 2022	Primary Supervisor	2022	Chiara Dane Villanueva
2019 - 2022	Primary Supervisor	2022	Ava Webber

2018 - 2022	Primary Supervisor	2022	Jeremy Diamzon-Larot
2018 - 2022	Primary Supervisor	2022	John McMurry
2018 - 2022	Primary Supervisor	2022	Olivia Ross
2020 - 2021	Primary Supervisor	2021	Joey Salinas
2019 - 2021	Primary Supervisor	2022	Sarah Collins
2018 - 2021	Primary Supervisor	2021	John Lloyd
2016 - 2021	Primary Supervisor	2021	Sandra Nair
2018 - 2020	Primary Supervisor	2020	Basil Darby
2016 - 2020	Primary Supervisor	2020	Miles Howell
2017 - 2019	Primary Supervisor	2019	Paul Andreini
2017 - 2019	Primary Supervisor	2019	Gavin Rockwood
2017 - 2019	Primary Supervisor	2019	Thomas Schwemberger
2017 - 2019	Primary Supervisor	2019	Maya Silverman
2016 - 2019	Primary Supervisor	2019	Anikeya Aditya
2016 - 2019	Primary Supervisor	2019	Jackson Yant
2014 - 2017	Primary Supervisor	2017	Kfir Dolev
2014 - 2017	Primary Supervisor	2017	Ian Roque
2014 - 2016	Primary Supervisor	2016	Kevin Hambleton
2014 - 2016	Primary Supervisor	2016	Adriano Sampieri
2012 - 2014	Primary Supervisor	2014	Miles Gray
2011 - 2014	Primary Supervisor	2014	Paul Bergeron
2010 - 2012	Primary Supervisor	2012	Leanna Dugger
2010 - 2012	Primary Supervisor	2012	Elan Stopnitzky
2009 - 2011	Primary Supervisor	2011	Leo Gendelev
2008 - 2010	Co Supervisor	2010	Subhir Sahail
2012 - 2013	Other Advisor	2014	Jason Gruzda

TEACHING

2023-2024

Courses Taught

Quarter	Name	Units	3rd Week Enrollment
Fall	PHYS 005D - 01 - Intro Physics IV	5	111
Fall	PHYS 195A - 18 - Senior Thesis I	5	2
Fall	PHYS 297A - 22 - Independent Study	5	1
Fall	PHYS 299B - 22 - Thesis Research	10	1
Winter	ASTR 226 - 01 - General Relativity	5	2
Winter	+ PHYS 226 - 01 - General Relativity	5	9
Winter	PHYS 182 - 01 - Sci Comm Physics	5	22
Winter	PHYS 195A - 18 - Senior Thesis I	5	2
Winter	PHYS 199 - 41 - Tutorial	5	2
Winter	PHYS 297A - 22 - Independent Study	5	2
Winter	PHYS 299B - 22 - Thesis Research	10	1
Spring	PHYS 195B - 18 - Senior Thesis II	5	2
Spring	PHYS 199 - 41 - Tutorial	5	1
Spring	PHYS 199 - 42 - Tutorial	5	1
Spring	PHYS 199F - 21 - Tutorial	2	1
Spring	PHYS 297B - 22 - Independent Study	10	2
Spring	PHYS 299B - 22 - Thesis Research	10	1

2022-2023

Courses Taught

Quarter	Name	Units	3rd Week Enrollment
Fall	PHYS 005D - 01 - Intro Physics IV	5	123
Fall	PHYS 291C - 01 - Particle Physics	2	2
Fall	PHYS 297A - 22 - Independent Study	5	2
Fall	PHYS 299B - 22 - Thesis Research	10	1
Winter	PHYS 297A - 22 - Independent Study	5	1
Winter	PHYS 299B - 22 - Thesis Research	10	1
Spring	PHYS 299B - 22 - Thesis Research	10	1

2021-2022

Courses Taught

Quarter	Name	Units	3rd Week Enrollment
Fall	PHYS 195A - 18 - Senior Thesis I	5	2

Fall	PHYS 212 - 01 - Electromagnetism I	5	17
Fall	PHYS 291C - 01 - Particle Physics	2	4
Fall	PHYS 297A - 22 - Independent Study	5	1
Fall	PHYS 297B - 22 - Independent Study	10	1
Fall	PHYS 299C - 22 - Thesis Research	15	4
Winter	PHYS 195B - 18 - Senior Thesis II	5	1
Winter	PHYS 199 - 41 - Tutorial	5	1
Winter	PHYS 291C - 01 - Particle Physics	2	3
Winter	PHYS 299B - 22 - Thesis Research	10	3
Winter	PHYS 299C - 22 - Thesis Research	15	1
Spring	PHYS 195B - 18 - Senior Thesis II	5	1
Spring	PHYS 291C - 01 - Particle Physics	2	2
Spring	PHYS 299A - 22 - Thesis Research	5	1
Spring	PHYS 299B - 22 - Thesis Research	10	2

2020-2021

Courses Taught

Quarter	Name	Units	3rd Week Enrollment
Fall	PHYS 195A - 18 - Senior Thesis I	5	2
Fall	PHYS 199 - 41 - Tutorial	5	1
Fall	PHYS 212 - 01 - Electromagnetism I	5	11
Fall	PHYS 291C - 01 - Particle Physics	2	5
Fall	PHYS 297B - 22 - Independent Study	10	1
Fall	PHYS 297C - 22 - Independent Study	15	1
Fall	PHYS 299B - 22 - Thesis Research	10	3
Winter	PHYS 195B - 18 - Senior Thesis II	5	2
Winter	PHYS 199 - 41 - Tutorial	5	1
Winter	PHYS 215 - 01 - Intro Quantum Mech	5	11
Winter	PHYS 291C - 01 - Particle Physics	2	2
Winter	PHYS 297C - 22 - Independent Study	15	1
Winter	PHYS 299B - 22 - Thesis Research	10	2
Winter	PHYS 299C - 22 - Thesis Research	15	2
Spring	PHYS 195B - 18 - Senior Thesis II	5	1
Spring	PHYS 199 - 41 - Tutorial	5	1
Spring	PHYS 291C - 01 - Particle Physics	2	3
Spring	PHYS 297C - 22 - Independent Study	15	1
Spring	PHYS 299B - 22 - Thesis Research	10	1
Spring	PHYS 299C - 22 - Thesis Research	15	3

2019-2020

Courses Taught

Quarter	Name	Units	3rd Week Enrollment
Fall	PHYS 005D - 01 - Intro Physics IV	5	144
Fall	PHYS 116C - 01 - Math Method Physics	5	93
Fall	PHYS 199 - 41 - Tutorial	5	2
Fall	PHYS 291C - 01 - Particle Physics	2	5
Fall	PHYS 297A - 22 - Independent Study	5	2
Fall	PHYS 297B - 22 - Independent Study	10	2
Fall	PHYS 297C - 22 - Independent Study	15	1
Fall	PHYS 299B - 22 - Thesis Research	10	1
Winter	PHYS 199 - 41 - Tutorial	5	1
Winter	PHYS 291C - 01 - Particle Physics	2	3
Winter	PHYS 297A - 22 - Independent Study	5	1
Winter	PHYS 297B - 22 - Independent Study	10	1
Winter	PHYS 299B - 22 - Thesis Research	10	2
Winter	PHYS 299C - 22 - Thesis Research	15	1
Spring	PHYS 199F - 21 - Tutorial	2	1
Spring	PHYS 291C - 01 - Particle Physics	2	2
Spring	PHYS 297A - 22 - Independent Study	5	1
Spring	PHYS 299B - 22 - Thesis Research	10	2
Spring	PHYS 299C - 22 - Thesis Research	15	1

2018-2019

Courses Taught

Quarter	Name	Units	3rd Week Enrollment	Comments
Fall	PHYS 116C - 01 - Math Method Physics	5	105	
Fall	PHYS 297B - 22 - Independent Study	10	3	
Fall	PHYS 297C - 22 - Independent Study	15	1	
Fall	PHYS 299B - 22 - Thesis Research	10	1	
Winter	PHYS 199 - 27 - Tutorial	5	1	
Winter	PHYS 199 - 28 - Tutorial	5	1	
Winter	PHYS 199F - 14 - Tutorial	2	1	
Winter	PHYS 215 - 01 - Intro Quantum Mech	5	17	
Winter	PHYS 297B - 22 - Independent Study	10	2	
Winter	PHYS 299B - 22 - Thesis Research	10	2	
Winter	PHYS 299C - 22 - Thesis Research	15	1	
Spring	PHYS 199 - 35 - Tutorial	5	1	
Spring	PHYS 199 - 36 - Tutorial	5	1	
Spring	PHYS 199F - 14 - Tutorial	2	1	
Spring	PHYS 297A - 22 - Independent Study	5	1	
Spring	PHYS 297B - 22 - Independent Study	10	2	
Spring	PHYS 299B - 22 - Thesis Research	10	2	

2017-2018**Courses Taught**

Quarter	Name	Units	3rd Week Enrollment	Comments
Fall	PHYS 116C - 01 - Math Method Physics	5	79	
Fall	PHYS 291C - 01 - Particle Physics	2	8	
Fall	PHYS 297B - 16 - Independent Study	10	4	
Fall	PHYS 299A - 16 - Thesis Research	5	1	
Fall	PHYS 299B - 16 - Thesis Research	10	2	
Fall	PHYS 299C - 16 - Thesis Research	15	1	
Winter	PHYS 199 - 35 - Tutorial	5	1	
Winter	PHYS 218 - 01 - Quantum Fld Theo II	5	6	
Winter	PHYS 291C - 01 - Particle Physics	2	7	
Winter	PHYS 297A - 16 - Independent Study	5	1	
Winter	PHYS 297B - 16 - Independent Study	10	5	
Winter	PHYS 299B - 16 - Thesis Research	10	1	
Spring	PHYS 199 - 35 - Tutorial	5	1	
Spring	PHYS 199F - 18 - Tutorial	2	1	
Spring	PHYS 291C - 01 - Particle Physics	2	9	
Spring	PHYS 297A - 16 - Independent Study	5	1	
Spring	PHYS 297B - 16 - Independent Study	10	3	
Spring	PHYS 299B - 16 - Thesis Research	10	2	

2016-2017**Courses Taught**

Quarter	Name	Units	3rd Week Enrollment
Fall	PHYS 210 - 01 - Classical Mechanics	5	19
Fall	PHYS 297A - 16 - Independent Study	5	2
Fall	PHYS 297B - 16 - Independent Study	10	1
Fall	PHYS 299B - 16 - Thesis Research	10	2
Winter	PHYS 199 - 16 - Tutorial	5	1
Winter	PHYS 218 - 01 - Quantum Fld Theo II	5	7
Winter	PHYS 297B - 16 - Independent Study	10	1
Winter	PHYS 299B - 16 - Thesis Research	10	2
Spring	PHYS 199 - 16 - Tutorial	5	1
Spring	PHYS 297A - 16 - Independent Study	5	2
Spring	PHYS 297B - 16 - Independent Study	10	1
Spring	PHYS 297C - 16 - Independent Study	15	1
Spring	PHYS 299B - 16 - Thesis Research	10	2

2015-2016**Courses Taught**

Quarter	Name	Units	3rd Week Enrollment
Fall	PHYS 217 - 01 - Quant Fld Theory I	5	12
Fall	PHYS 297B - 16 - Independent Study	10	2
Fall	PHYS 299B - 16 - Thesis Research	10	2
Winter	PHYS 199 - 16 - Tutorial	5	1
Winter	PHYS 215 - 01 - Intro Quantum Mech	5	23
Winter	PHYS 297B - 16 - Independent Study	10	2
Winter	PHYS 299B - 16 - Thesis Research	10	1
Winter	PHYS 299C - 16 - Thesis Research	15	1
Spring	PHYS 199 - 16 - Tutorial	5	1
Spring	PHYS 199F - 16 - Tutorial	2	1
Spring	PHYS 297B - 16 - Independent Study	10	1
Spring	PHYS 297C - 16 - Independent Study	15	1
Spring	PHYS 299B - 16 - Thesis Research	10	1

2014-2015**Courses Taught**

Quarter	Name	Units	3rd Week Enrollment
Fall	PHYS 217 - 01 - Quant Fld Theory I	5	9
Fall	PHYS 297A - 27 - Independent Study	5	1
Fall	PHYS 297B - 16 - Independent Study	10	3
Fall	PHYS 299B - 16 - Thesis Research	10	1
Winter	PHYS 215 - 01 - Intro Quantum Mech	5	14
Winter	PHYS 297B - 16 - Independent Study	10	2
Winter	PHYS 299B - 16 - Thesis Research	10	2
Spring	PHYS 297B - 16 - Independent Study	10	2
Spring	PHYS 299B - 16 - Thesis Research	10	2

2013-2014**Courses Taught**

Quarter	Name	Units	3rd Week Enrollment
Fall	PHYS 005A - 01 - Intro Physics I	5	248
Fall	PHYS 105 - 01 - Mechanics	5	62
Fall	PHYS 297A - 27 - Independent Study	5	1
Fall	PHYS 297B - 16 - Independent Study	10	1
Fall	PHYS 299B - 16 - Thesis Research	10	1
Winter	PHYS 297A - 16 - Independent Study	5	1
Winter	PHYS 297B - 16 - Independent Study	10	1

Winter	PHYS 299B - 16 - Thesis Research	10	1
Spring	PHYS 297A - 16 - Independent Study	5	1
Spring	PHYS 297B - 16 - Independent Study	10	1
Spring	PHYS 299B - 16 - Thesis Research	10	1

2012-2013

Courses Taught

Quarter	Name	Units	3rd Week Enrollment
Fall	ENVS 184 - 34 - Envs Stu Internship	2	1
Fall	PHYS 105 - 01 - Mechanics	5	80
Fall	PHYS 210 - 01 - Classical Mechanics	5	10
Fall	PHYS 297A - 27 - Independent Study	5	1
Fall	PHYS 299B - 16 - Thesis Research	10	2
Winter	PHYS 199 - 16 - Tutorial	5	1
Winter	PHYS 299B - 16 - Thesis Research	10	2
Spring	PHYS 297A - 16 - Independent Study	5	1
Spring	PHYS 299B - 16 - Thesis Research	10	2

2011-2012

Courses Taught

Quarter	Name	Units	3rd Week Enrollment
Fall	PHYS 210 - 01 - Classical Mechanics	5	6
Fall	PHYS 297A - 16 - Independent Study	5	1
Fall	PHYS 299B - 16 - Thesis Research	10	2
Winter	PHYS 116A - 01 - Math Method Physics	5	87
Winter	PHYS 299B - 16 - Thesis Research	10	2
Spring	PHYS 297B - 16 - Independent Study	10	1
Spring	PHYS 299B - 16 - Thesis Research	10	2

2010-2011

Courses Taught

Quarter	Name	Units	3rd Week Enrollment
Summer	PHYS 297A - 01 - INDEPENDENT STUDY	5	2
Fall	PHYS 217 - 01 - QUANTUM FIELD THEORY I	5	11
Fall	PHYS 297B - 16 - INDEPENDENT STUDY	10	1
Fall	PHYS 299A - 16 - THESIS RESEARCH	5	1
Fall	PHYS 299B - 16 - THESIS RESEARCH	10	1

Winter	PHYS 297B - 16 - INDEPENDENT STUDY	10	1
Winter	PHYS 299B - 16 - THESIS RESEARCH	10	2
Spring	PHYS 116B - 01 - MATH METHOD PHYSICS	5	66
Spring	PHYS 299B - 16 - THESIS RESEARCH	10	2

2009-2010

Courses Taught

Quarter	Name	Units	3rd Week Enrollment
Summer	PHYS 297A - 01 - INDEPENDENT STUDY	5	2
Fall	PHYS 217 - 01 - QUANTUM FIELD THEORY I	5	8
Fall	PHYS 297A - 16 - INDEPENDENT STUDY	5	4
Winter	PHYS 226 - 01 - GENERAL RELATIVITY	5	11
Winter	PHYS 299A - 16 - THESIS RESEARCH	5	1
Winter	PHYS 299B - 16 - THESIS RESEARCH	10	1
Spring	PHYS 116B - 01 - MATH METHOD PHYSICS	5	65
Spring	PHYS 297A - 16 - INDEPENDENT STUDY	5	2
Spring	PHYS 299A - 16 - THESIS RESEARCH	5	1

2008-2009

Courses Taught

Quarter	Name	Units	3rd Week Enrollment
Fall	PHYS 221A - 01 - INTRODUCTION TO PARTICLE PHYSICS I	5	6
Winter	PHYS 116A - 01 - MATH METHOD PHYSICS	5	58
Winter	PHYS 297B - 29 - INDEPENDENT STUDY	10	2
Winter	PHYS 299B - 29 - THESIS RESEARCH	10	1
Spring	PHYS 297B - 28 - INDEPENDENT STUDY	10	2

2007-2008

Courses Taught

Quarter	Name	Units	3rd Week Enrollment
Fall	PHYS 221A - 01 - INTRODUCTION TO PARTICLE PHYSICS I	5	7
Winter	PHYS 116A - 01 - MATH METHOD PHYSICS	5	65