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PERSONAL INFORMATION

Educational Background

- 2002, Ph.D., Harvard University
- 1996, B.S., Virginia Tech, summa cum laude

Academic Appointments

- 2020: Associate chair for undergraduate education, Dept. of Physics, University of Maryland
- 2017: Professor of physics, University of Maryland
- 2012: Associate professor of physics, University of Maryland
- 2006: Assistant professor of physics, University of Maryland

Other Employment

- 2002-2006, Postdoctoral Research Associate, Stanford Linear Accelerator Center.

RESEARCH, SCHOLARLY AND CREATIVE ACTIVITIES

Articles in Refereed Journals

Refereed Journal Articles

1. DS Akerib, *et al.* [LZ collaboration], ‘Projected sensitivities of the LUX-ZEPLIN (LZ) experiment to new physics via low-energy electron recoils’, arXiv:2102.11740
2. DS Akerib, *et al.* [LZ collaboration], ‘Enhancing the sensitivity of the LUX-ZEPLIN (LZ) dark matter experiment to low energy signals’, arXiv:2101.08753.
3. DS Akerib, *et al.* [LUX collaboration], ‘Constraints on Effective Field Theory Couplings Using 311.2 days of LUX Data’, arXiv:2102.06998.
4. D.S. Akerib, *et al.* [LUX collaboration], ‘Improving sensitivity to low-mass dark matter in LUX using a novel electrode background mitigation technique’, arXiv: 2011.09602.
5. D.S. Akerib, *et al.* [LZ collaboration], ‘The LUX-ZEPLIN (LZ) radioactivity and cleanliness control programs’, Eur.Phys.J.C 80 (2020) 11, arXiv:2006.02506.
6. D.S. Akerib, *et al.* [LUX collaboration], ‘Investigation of background electron emission in the LUX detector’, Phys.Rev.D 102 (2020) 9, 092004, arXiv:2004.07791.

7. D.S. Akerib, *et al.* [LUX collaboration], ‘Discrimination of electronic recoils from nuclear recoils in two-phase xenon time projection chambers’, *Phys.Rev.D* 102 (2020) 11, 112002, arXiv:2004.06304.
8. D.S. Akerib, *et al.* [LUX collaboration], ‘An Effective Field Theory Analysis of the First LUX Dark Matter Search’, arXiv: 2003.11141.
9. D.S. Akerib, *et al.* [LZ collaboration], ‘Simulations of Events for the LUX-ZEPLIN (LZ) Dark Matter Experiment’, *Astropart.Phys.* 125 (2021) 102480, arXiv:2001.09363.
10. D.S. Akerib, *et al.* [LZ collaboration], ‘Projected sensitivity of the LUX-ZEPLIN experiment to the decay of ^{136}Xe ’, *Phys.Rev.C* 102 (2020) 1, 014602, arXiv:1912.04248.
11. D.S. Akerib, *et al.* [LUX collaboration], ‘Search for two neutrino double electron capture of ^{124}Xe and ^{126}Xe in the full exposure of the LUX detector’, *J.Phys.G* 47 (2020) 10, 105105, arXiv:1912.02742.
12. D.S. Akerib, *et al.* [LZ collaboration], ‘The LUX-ZEPLIN (LZ) Experiment’, *Nucl.Instrum.Meth.A* 953 (2020) 163047, arXiv:1910.09124.
13. D.S. Akerib, *et al.* [LUX collaboration], ‘Improved Modeling of β Electronic Recoils in Liquid Xenon Using LUX Calibration Data’, *JINST* 15 (2020) 02, T02007, arXiv:1910.04211.
14. D.S. Akerib, *et al.* [LUX collaboration], ‘First direct detection constraint on mirror dark matter kinetic mixing using LUX 2013 data’, *Phys.Rev.D* 101 (2020) 1, 012003, arXiv:1908.03479.
15. D.S. Akerib, *et al.* [LUX collaboration], ‘Extending light WIMP searches to single scintillation photons in LUX’, *Phys.Rev.D* 101 (2020) 4, 042001, arXiv:1907.06272.
16. D.S. Akerib, *et al.* [LZ collaboration], ‘Measurement of the Gamma Ray Background in the Davis Cavern at the Sanford Underground Research Facility’, *Astropart.Phys.* 116 (2020) 102391, arXiv:1904.02112.
17. D.S. Akerib, *et al.* [LUX collaboration], ‘Improved Measurements of the β -Decay Response of Liquid Xenon with the LUX Detector’, *Phys.Rev.D* 100 (2019) 2, 022002, arXiv:1903.12372.
18. D.S. Akerib, *et al.* [LUX collaboration], ‘Results of a search for sub-GeV dark matter using 2013 LUX data’, *Phys.Rev.Lett.* 122 (2019) 13, 131301, arXiv:1811.1124.
19. D.S. Akerib, *et al.* [LUX collaboration], ‘Search for annual and diurnal rate modulations in the LUX experiment’, *Phys.Rev.* D98 (2018) no.6, 062005, arXiv:1807.07113.
20. K. Pushkin, *et al.*, ‘Study of radon reduction in gases for rare event search experiments’, *Nucl.Instrum.Meth.* A903 (2018) 267-276, arXiv:1805.11306.
21. S. Delaquis, *et al.* [EXO-200 Collaboration], ‘Deep Neural Networks for Energy and Position Reconstruction in EXO-200’, *JINST* 13 (2018) no.08, P08023, arXiv:1804.09641.
22. D.S. Akerib *et al.* [LUX collaboration], ‘Calibration, event reconstruction, data analysis, and limit calculation for the LUX dark matter experiment’, *Phys.Rev.* D97 (2018) no.10, 102008.
23. D.S. Akerib, *et al.* [LUX collaboration], ‘LUX trigger efficiency’, *Nucl.Instrum.Meth.* A908 (2018) 401-410, arXiv:1802.07784,
24. D.S. Akerib, *et al.* [LZ collaboration], ‘Projected WIMP Sensitivity of the LUX-ZEPLIN (LZ) Dark Matter Experiment’, *Phys.Rev.D* 101 (2020) 5, 052002. arXiv:1802.06039.
25. D.S. Akerib, *et al.* [LUX collaboration], ‘Liquid xenon scintillation measurements and pulse shape discrimination in the LUX dark matter detector’, *Phys.Rev.* D97 (2018) no.11, 112002, arXiv:1802.06162.

26. D.S. Akerib, *et al.* [LUX collaboration], ‘Calibration, event reconstruction, data analysis and limits calculation for the LUX dark matter experiment’, *Phys.Rev. D* **97** (2018) no.10, 102008 arXiv:1712.05696.
27. D.S. Akerib, *et al.* [LUX collaboration], ‘Position reconstruction in LUX’, *JINST* **13** P02001 (2018).
28. J.B. Albert, *et al.* [EXO-200 collaboration], ‘Search for nucleon decays with EXO-200’, *Phys.Rev. D* **97** (2018) no.7, 072007, arXiv:1710.07670.
29. D.S. Akerib, *et al.* [LUX collaboration], ‘Ultralow energy calibration of LUX detector using ^{127}Xe electron capture’, *Phys. Rev. D* **96**, 012011 (2017).
30. J.B. Albert, *et al.* [EXO-200 collaboration], ‘Search for neutrinoless double-beta decay with the upgraded EXO-200 detector’, *Phys.Rev.Lett* **120** 072701 (2018), arXiv:1707.08707.
31. D.S. Akerib, *et al.* [LUX collaboration], ‘3D modeling of electric fields in the LUX detector’, *JINST* **12**, P11022 (2017).
32. D.S. Akerib, *et al.* [LUX collaboration], ‘ $^{83\text{m}}\text{Kr}$ calibration of the 2013 LUX dark matter search’, *Phys. Rev. D* **96**, 112009 (2017).
33. J.B. Albert, *et al.* [EXO-200 collaboration], ‘Searches for double beta decay of ^{134}Xe with EXO-200’, *Phys.Rev. D* **96** 092001 (2017).
34. D.S. Akerib, *et al.* [LUX collaboration], ‘Limits on spin-dependent WIMP-nucleon cross section obtained from the complete LUX exposure’, *Phys. Rev. Lett* **118**, 251302 (2017).
35. D.S. Akerib, *et al.* [LUX collaboration], ‘First searches for axions and axionlike particles with the LUX experiment’, *Phys. Rev. Lett.* **118**, 261301 (2017).
36. D.S. Leonard, *et al.* [EXO-200 collaboration], ‘Trace radioactive impurities in final construction materials for EXO-200’, *Nucl.Instrum.Meth. A* **871** 169-179 (2017).
37. D.S. Akerib, *et al.* [LZ collaboration], ‘Identification of Radiopure Titanium for the LZ Dark Matter Experiment and Future Rare Event Searches’, arXiv:1702.02646, *Astropart. Phys.* **96** 1-10 (2017).
38. D.Yu. Akimov, A.I. Bolozdynya, A.A. Burenkov, C. Hall, A.G. Kovalenko, V.V. Kuzminov, G.E. Simakov, ‘New method of ^{85}Kr reduction in a noble gas based low-background detector’, arXiv:1611.07168, *JINST* **12** P04002 (2017).
39. D.S. Akerib, *et al.* [LUX collaboration], ‘Signal yields, energy resolution, and recombination fluctuations in liquid xenon’, *Phys. Rev. D* **95**, 012008 (2017).
40. J.B. Albert, *et al.* [EXO collaboration], ‘Measurement of the drift velocity and transverse diffusion of electrons in liquid xenon with the EXO-200 detector’, *Phys. Rev. C* **95**, 025502 (2017).
41. D.S. Akerib, *et al.* [LUX collaboration], ‘Results from a Search for Dark Matter in the Complete LUX Exposure’, *Phys. Rev. Lett.* **118**, 021303 (2017).
42. D.S. Akerib, *et al.* [LUX collaboration], ‘Low-energy (0.7-74 keV) nuclear recoil calibration of the LUX dark matter experiment using D-D neutron scattering kinematics’, arXiv:1608.05381, submitted to *Phys. Rev. C*.
43. C.G. Davis, *et al.* [EXO collaboration], ‘An Optimal Energy Estimator to Reduce Correlated Noise for the EXO-200 Light Readout’, *JINST* **11** (2016) no.07, P07015.
44. D.S. Akerib, *et al.* [LUX collaboration], ‘Chromatographic separation of radioactive noble gases from xenon’, arXiv:1605.03844, *Astropart. Phys.* **97** 80-87 (2018).

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49. D.S. Akerib, *et al.* [LUX collaboration], 'Tritium calibration of the LUX dark matter experiment', *Phys. Rev. D* **93** 072009 (2016).
50. D.S. Akerib, *et al.* [LUX collaboration], 'Improved Limits on Scattering of Weakly Interacting Massive Particles from Re-analysis of 2013 LUX Data', *Phys. Rev. Lett.* **116** 161301 (2016).
51. J.B. Albert, *et al.* [EXO collaboration], 'Cosmogenic backgrounds to $0\nu\beta\beta$ in EXO-200', *JCAP* **2016** 029.
52. J.B. Albert, *et al.* [EXO collaboration], 'Investigation of radioactivity-induced backgrounds in EXO-200', *Phys. Rev. C* **92** 015503 (2015).
53. J.B. Albert, *et al.* [EXO collaboration], 'Measurements of the ion fraction and mobility of α and β -decay products in liquid xenon using the EXO-200 detector', *Phys. Rev. C* **92** 045504 (2015).
54. D. S. Akerib, *et al.* [LUX collaboration], 'Radiogenic and Muon-Induced Backgrounds in the LUX Dark Matter Detector', *Astropart. Phys.* **62** 33 (2015).
55. J. B. Albert *et al.* [EXO Collaboration], 'Search for Majoron-emitting modes of double-beta decay of ^{136}Xe with EXO-200', *Phys. Rev. D* **90** 092004 (2014).
56. K. Twelker, *et al.* [EXO collaboration], 'An apparatus to manipulate and identify individual Ba ions from bulk liquid Xe,' *Rev. Sci. Instrum.* **85**, 095114 (2014).
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58. D.S. Akerib, *et al.* [LUX collaboration], 'First results from the LUX dark matter experiment at the Sanford Underground Research Facility', *Phys. Rev. Lett.* **112** 091303 (2014).
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63. D.S. Akerib, *et al.* [LUX collaboration], 'An Ultra-Low Background PMT for Liquid Xenon Detectors', *Nucl. Instrum. Meth. A* **703** (2013) 1-6.
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66. D.S. Akerib, *et al.* [LUX collaboration], 'LUXSim: A component-centric approach to low-background simulations', Nucl. Instrum. Meth. A **675**, 63 (2012).
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71. A. Ackerman, *et al.* [EXO collaboration], 'Observation of two-neutrino double beta decay in ^{136}Xe with the EXO-200 detector', Phys. Rev. Lett. **107**, 212501 (2011).
72. F. Leport, *et al.* [EXO collaboration], 'A magnetically driven piston pump for ultra-clean applications', Rev. Sci. Instrum. **82** 105114 (2011).
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75. A. Dobi, D. S. Leonard, C. Hall, L. Kaufman, T. Langford, S. Slutsky, and Y. R. Yen, 'Study of a zirconium getter for purification of xenon gas', Nucl. Instrum. Meth. A **620**, 594 (2010).
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82. K. Wamba, *et al.* [EXO collaboration], 'Mobility of Th^+ in liquid xenon', Nucl. Instrum. Meth. A **555** 205 (2005).
83. D. Acosta, *et al.* [CDF collaboration], 'Direct photon cross section with conversions at CDF', Phys. Rev. D **70** 074008 (2004).
84. T. Affolder *et al.* [CDF collaboration], 'CDF central outer tracker', Nucl. Instrum. Meth. A **526** 249 (2004).
85. D. Acosta *et al.* [CDF Collaboration], 'Observation of the narrow state $X(3872) \rightarrow J/\psi \pi^+ \pi^-$ in anti-p p collisions at $\sqrt{s} = 1.96\text{-TeV}$ ', Phys. Rev. Lett. **93** 072001 (2004).

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87. V. M. Abazov *et al.* [CDF Collaboration], ‘Combination of CDF and D0 results on W boson mass and width,’ Phys. Rev. D **70**, 092008 (2004).
88. D. Acosta *et al.* [CDF Collaboration], ‘Heavy flavor properties of jets produced in p anti-p interactions at $s^{**}(1/2) = 1.8\text{-TeV}$,’ Phys. Rev. D **69**, 072004 (2004).
89. D. Acosta *et al.* [CDF Collaboration], ‘Measurement of the average time-integrated mixing probability of b-flavored hadrons produced at the Tevatron,’ Phys. Rev. D **69**, 012002 (2004).
90. D. Acosta *et al.* [CDF Collaboration], ‘Search for pair production of scalar top quarks in R-parity violating decay modes in p anti-p collisions at $s^{**}(1/2) = 1.8\text{-TeV}$,’ Phys. Rev. Lett. **92**, 051803 (2004).
91. D. Acosta *et al.* [CDF Collaboration], ‘Measurement of the mass difference $m(D/s^+) - m(D^+)$ at CDFII,’ Phys. Rev. D **68**, 072004 (2003).
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94. D. Acosta *et al.* [CDF Collaboration], ‘Search for lepton flavor violating decays of a heavy neutral particle in p anti-p collisions at $s^{**}(1/2) = 1.8\text{-TeV}$,’ Phys. Rev. Lett. **91**, 171602 (2003).
95. D. Acosta *et al.* [CDF Collaboration], ‘Measurement of prompt charm meson production cross sections in p anti-p collisions at $s^{**}(1/2) = 1.96\text{-TeV}$,’ Phys. Rev. Lett. **91**, 241804 (2003).
96. D. Acosta *et al.* [CDF Collaboration], ‘Central pseudorapidity gaps in events with a leading anti-proton at the Fermilab Tevatron anti-p p collider,’ Phys. Rev. Lett. **91**, 011802 (2003).
97. D. Acosta *et al.* [CDF Collaboration], ‘Search for the supersymmetric partner of the top quark in di-lepton events from p anti-p collisions at $s^{**}(1/2) = 1.8\text{-TeV}$,’ Phys. Rev. Lett. **90**, 251801 (2003).
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100. D. Acosta *et al.* [CDF Collaboration], ‘Search for a W’ boson decaying to a top and bottom quark pair in 1.8-TeV p anti-p collisions. ((B)),’ Phys. Rev. Lett. **90**, 081802 (2003).
101. D. Acosta *et al.* [CDF Collaboration], ‘Momentum distribution of charged particles in jets in dijet events in p anti-p collisions at $s^{**}(1/2) = 1.8\text{-TeV}$ and comparisons to perturbative QCD predictions,’ Phys. Rev. D **68**, 012003 (2003).
102. A. A. Affolder *et al.* [CDF Collaboration], ‘Measurement of the t anti-t production cross section in p anti-p collisions at $s^{**}(1/2) = 1.8\text{-TeV}$,’ Phys. Rev. D **64**, 032002 (2001) [Erratum-ibid. D **67**, 119901(2003)].
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123. A. A. Affolder *et al.* [CDF Collaboration], ‘Search for gluinos and scalar quarks in p anti-p collisions at $s^{**}(1/2) = 1.8\text{-TeV}$ using the missing energy plus multijets signature,’ *Phys. Rev. Lett.* **88**, 041801 (2002).
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127. A. A. Affolder *et al.* [CDF Collaboration], ‘Charged particle multiplicity in jets in p anti-p collisions at $s^{**}(1/2) = 1.8\text{-TeV}$,’ *Phys. Rev. Lett.* **87**, 211804 (2001)
128. A. A. Affolder *et al.* [CDF Collaboration], ‘Observation of diffractive J/psi production at the Fermilab Tevatron,’ *Phys. Rev. Lett.* **87**, 241802 (2001).
129. A. A. Affolder *et al.* [CDF Collaboration], ‘Measurement of $d(\sigma)/dM$ and forward-backward charge asymmetry for high mass Drell-Yan $e^+ e^-$ pairs from p anti-p collisions at $s^{**}(1/2) = 1.8\text{-TeV}$,’ *Phys. Rev. Lett.* **87**, 131802 (2001).
130. A. A. Affolder *et al.* [CDF Collaboration], ‘Search for gluinos and squarks using like-sign di-leptons in p anti-p collisions at $s^{**}(1/2) = 1.8\text{-TeV}$,’ *Phys. Rev. Lett.* **87**, 251803 (2001).
131. A. A. Affolder *et al.* [CDF Collaboration], ‘Search for narrow diphoton resonances and for $\gamma \gamma + W / Z$ signatures in p anti-p collisions at $s^{**}(1/2) = 1.8\text{-TeV}$,’ *Phys. Rev. D* **64**, 092002 (2001).
132. A. A. Affolder *et al.* [CDF Collaboration], ‘Double diffraction dissociation at the Fermilab Tevatron collider,’ *Phys. Rev. Lett.* **87**, 141802 (2001).
133. A. A. Affolder *et al.* [CDF Collaboration], ‘Measurement of the inclusive jet cross section in anti-p p collisions at $s^{**}(1/2) = 1.8\text{-TeV}$,’ *Phys. Rev. D* **64**, 032001 (2001) [Erratum-*ibid.* *D* **65**, 039903 (2002)].
134. A. A. Affolder *et al.* [CDF Collaboration], ‘Production of $\chi/c1$ and $\chi/c2$ in p anti-p collisions at $s^{**}(1/2) = 1.8\text{-TeV}$,’ *Phys. Rev. Lett.* **86**, 3963 (2001).
135. A. A. Affolder *et al.* [CDF Collaboration], ‘Measurement of the two-jet differential cross section in proton antiproton collisions at $s^{**}(1/2) = 1800\text{-GeV}$,’ *Phys. Rev. D* **64**, 012001 (2001) [Erratum-*ibid.* *D* **65**, 039902 (2002)].
136. A. A. Affolder *et al.* [CDF Collaboration], ‘First measurement of the ratio $B(t \rightarrow W b)/B(t \rightarrow W q)$ and associated limit on the CKM element $|V(tb)|$,’ *Phys. Rev. Lett.* **86**, 3233 (2001).
137. A. A. Affolder *et al.* [CDF Collaboration], ‘Search for the supersymmetric partner of the top quark in p anti-p collisions at $s^{**}(1/2) = 1.8\text{-TeV}$,’ *Phys. Rev. D* **63**, 091101 (2001).
138. A. A. Affolder *et al.* [CDF Collaboration], ‘Search for neutral supersymmetric Higgs bosons in p anti-p collisions at $s^{**}(1/2) = 1.8\text{-TeV}$,’ *Phys. Rev. Lett.* **86**, 4472 (2001).
139. A. A. Affolder *et al.* [CDF Collaboration], ‘Test of enhanced leading order QCD in W boson plus jets events from 1.8-TeV anti-p p collisions,’ *Phys. Rev. D* **63**, 072003 (2001).
140. A. A. Affolder *et al.* [CDF Collaboration], ‘Measurement of the W boson mass with the Collider Detector at Fermilab,’ *Phys. Rev. D* **64**, 052001 (2001).

141. A. A. Affolder *et al.* [CDF Collaboration], ‘Measurement of $d(\sigma)/dy$ for high mass Drell-Yan $e^+ e^-$ pairs from p anti- p collisions at $s^{**}(1/2) = 1.8\text{-TeV}$,’ *Phys. Rev. D* **63**, 011101 (2001).
142. A. A. Affolder *et al.* [CDF Collaboration], ‘Measurement of the top quark mass with the Collider Detector at Fermilab,’ *Phys. Rev. D* **63**, 032003 (2001).
143. A. A. Affolder *et al.* [CDF Collaboration], ‘Measurement of the top quark $p(T)$ distribution,’ *Phys. Rev. Lett.* **87**, 102001 (2001).
144. A. A. Affolder *et al.* [CDF Collaboration], ‘Observation of orbitally excited B mesons in p anti- p collisions at $s^{**}(1/2) = 1.8\text{-TeV}$,’ *Phys. Rev. D* **64**, 072002 (2001).
145. A. A. Affolder *et al.* [CDF Collaboration], ‘Measurement of the decay amplitudes of $B^0 \rightarrow J/\psi K^*0$ and $B/s^0 \rightarrow J/\psi \Phi$ decays,’ *Phys. Rev. Lett.* **85**, 4668 (2000)
146. A. A. Affolder *et al.* [CDF Collaboration], ‘Dijet production by double pomeron exchange at the Fermilab Tevatron,’ *Phys. Rev. Lett.* **85**, 4215 (2000).
147. A. A. Affolder *et al.* [CDF Collaboration], ‘Search for second and third generation leptoquarks including production via technicolor interactions in p anti- p collisions at $s^{**}(1/2) = 1.8\text{-TeV}$,’ *Phys. Rev. Lett.* **85**, 2056 (2000).
148. A. A. Affolder *et al.* [CDF Collaboration], ‘Direct measurement of the W boson width in p anti- p collisions at $s^{**}(1/2) = 1.8\text{-TeV}$,’ *Phys. Rev. Lett.* **85**, 3347 (2000).
149. A. A. Affolder *et al.* [CDF Collaboration], ‘Measurement of J/ψ and $\psi(2S)$ polarization in p anti- p collisions at $s^{**}(1/2) = 1.8\text{-TeV}$,’ *Phys. Rev. Lett.* **85**, 2886 (2000).
150. A. A. Affolder *et al.* [CDF Collaboration], ‘Search for new particles decaying to t anti- t in p anti- p collisions at $s^{**}(1/2) = 1.8\text{-TeV}$,’ *Phys. Rev. Lett.* **85**, 2062 (2000).
151. A. A. Affolder *et al.* [CDF Collaboration], ‘Diffractive dijets with a leading antiproton in anti- p p collisions at $s^{**}(1/2) = 1800\text{-GeV}$,’ *Phys. Rev. Lett.* **84**, 5043 (2000).
152. A. A. Affolder *et al.* [CDF Collaboration], ‘Limits on gravitino production and new processes with large missing transverse energy in p anti- p collisions at $s^{**}(1/2) = 1.8\text{-TeV}$,’ *Phys. Rev. Lett.* **85**, 1378(2000).
153. A. A. Affolder *et al.* [CDF Collaboration], ‘Search for the charged Higgs boson in the decays of top quark pairs in the e tau and μ tau channels at $s^{**}(1/2) = 1.8\text{-TeV}$,’ *Phys. Rev. D* **62**, 012004 (2000).
154. A. A. Affolder *et al.* [CDF Collaboration], ‘A measurement of the differential dijet mass cross section in p anti- p collisions at $s^{**}(1/2) = 1.8\text{-TeV}$,’ *Phys. Rev. D* **61**, 091101 (2000).
155. A. A. Affolder *et al.* [CDF Collaboration], ‘Search for scalar top quark production in p anti- p collisions at $s^{**}(1/2) = 1.8\text{-TeV}$,’ *Phys. Rev. Lett.* **84**, 5273 (2000).
156. A. A. Affolder *et al.* [CDF Collaboration], ‘Production of Upsilon(1S) mesons from χ/b decays in p anti- p collisions at $s^{**}(1/2) = 1.8\text{-TeV}$,’ *Phys. Rev. Lett.* **84**, 2094 (2000).
157. A. A. Affolder *et al.* [CDF Collaboration], ‘Search for scalar top and scalar bottom quarks in p anti- p collisions at $s^{**}(1/2) = 1.8\text{-TeV}$,’ *Phys. Rev. Lett.* **84**, 5704 (2000).
158. A. A. Affolder *et al.* [CDF Collaboration], ‘A measurement of $\sin(2\beta)$ from $B \rightarrow J/\psi K^0(S)$ with the CDF detector,’ *Phys. Rev. D* **61**, 072005 (2000).
159. A. A. Affolder *et al.* [CDF Collaboration], ‘Measurement of b quark fragmentation fractions in p anti- p collisions at $s^{**}(1/2) = 1.8\text{-TeV}$,’ *Phys. Rev. Lett.* **84**, 1663 (2000).

160. A. A. Affolder *et al.* [CDF Collaboration], ‘Search for a fourth-generation quark more massive than the Z0 boson in p anti-p collisions at $s^{*(1/2)} = 1.8\text{-TeV}$,’ Phys. Rev. Lett. **84**, 835 (2000).
161. A. A. Affolder *et al.* [CDF Collaboration], ‘Measurement of the helicity of W bosons in top quark decays,’ Phys. Rev. Lett. **84**, 216 (2000).
162. A. A. Affolder *et al.* [CDF Collaboration], ‘Observation of diffractive beauty production at the Fermilab Tevatron,’ Phys. Rev. Lett. **84**, 232 (2000).
163. A. A. Affolder *et al.* [CDF Collaboration], ‘Search for color singlet technicolor particles in pp^- collisions at $\sqrt{s} = 1.8\text{ TeV}$,’ Phys. Rev. Lett. **84**, 1110 (2000).
164. A. A. Affolder *et al.* [CDF Collaboration], ‘The transverse momentum and total cross section of e+e- pairs in the Z boson region from p anti-p collisions at $s^{*(1/2)} = 1.8\text{-TeV}$,’ Phys. Rev. Lett. **84**, 845 (2000).
165. A. A. Affolder *et al.* [CDF Collaboration], ‘Measurement of the B0 anti-B0 oscillation frequency using l- D*+ pairs and lepton flavor tags,’ Phys. Rev. D **60**, 112004 (1999).
166. A. A. Affolder *et al.* [CDF Collaboration], ‘Search for the flavor-changing neutral current decays $B^+ \rightarrow \mu^+ \mu^- K^+$ and $B^0 \rightarrow \mu^+ \mu^- K^{*0}$,’ Phys. Rev. Lett. **83**, 3378 (1999).

Published Conference Proceedings, Design Reports, and other Non-Refereed Articles

- ‘Constraining Radon Backgrounds in LZ’, AIP Conf.Proc. 1921 (2018) 1, 050003, arXiv: 1708.08533.
- ‘US Cosmic Visions: New Ideas in Dark Matter 2017: Community Report’, arXiv:1707.04591 (2017).
- ‘LUX-ZEPLIN (LZ) Technical Design Report’, arXiv:1703.09144 (2017).
- ‘LUX-ZEPLIN (LZ) Conceptual Design Report’, arXiv:1509.02910 (2015).
- ‘High voltage in noble liquids for high energy physics’, JINST 9 (2014) T08004.
- ‘Working group report: Neutrinos’, arXiv:1310.4340 (2013).
- ‘Radio-assay of titanium samples for the LUX experiment’, arXiv:1112.1376 (2011).
- ‘A search for weakly interacting dark matter with the LUX experiment’, Proceedings of the 35th International Conference of High Energy Physics (ICHEP 2010), POS (ICHEP 2010), 431 (2011)
- ‘Status of the EXO double beta decay search’, Proceedings of the 35th International Conference of High Energy Physics (ICHEP 2010), POS (ICHEP 2010), 300 (2011)

Conferences, Workshops and Talks

Invited Talks

- 2018, ‘Status of the LUX-ZEPLIN dark matter experiment’, Identification of Dark Matter conference, invited talk, Providence RI, July 2018.
- 2018, ‘Status of the LUX-ZEPLIN dark matter experiment’, 6th Symposium on Neutrinos and Dark Matter in Nuclear Physics, invited talk, Daejeon, South Korea, July 2018.
- 2015, ‘Status and outlook for the direct detection of dark matter’, 2015 APS April meeting, invited talk, Baltimore, MD, April 2015.

- 2014, 'Prospects for the direct detection of dark matter', Joint particle theory-experiment Maryland-Hopkins Seminar, invited talk, College Park, MD, December 2014.
- 2014, 'First dark matter search results from LUX', Mitchell Workshop on Collider and Dark Matter Physics, invited talk, College Station, TX, May 2014.
- 2014, 'Searches for Double Beta Decay', Fermilab Academic Lecture Series, invited lecture, Batavia, IL, February 2014.
- 2013, 'Prospects for Absolute Neutrino Mass Measurements', Lepton-Photon 2013, San Francisco, CA, invited plenary talk, June 2013.
- 2013, 'Status and Future of Double Beta Decay', 2013 APS April meeting, invited talk, Denver, CO, April 2013.
- 2013, 'Experimental Overview of $\beta\beta 0\nu$ ', Snowmass Intensity Frontier meeting, invited talk, Menlo Park, CA, March 2013.
- 2011, 'Dark matter searches with noble liquids', JSI Workshop: Near Field Cosmology as a Probe of Early Universe, Dark Matter, and Gravity, invited talk, Annapolis, MD, December 2011.
- 2011, 'Non-accelerator HEP instrumentation challenges', invited talk, 2011 APS Division of Particles and Fields meeting, Providence, RI, August 2011.
- 2011, 'Dark matter search at LUX', 2011 Shanghai Particle Physics and Cosmology Symposium, invited talk, Shanghai, China, June 2011.
- 2010, 'What nuclear physics tells us about physics beyond the nucleus: Progress in fundamental symmetries and neutrinos since the 2007 long range plan', APS Division of Nuclear Physics meeting, invited plenary talk, Santa Fe, NM, November 2010.
- 2010, 'Non-accelerator experiments: physics goals and challenges', Workshop on Detector R&D, Batavia, IL, October 2010.
- 2010, 'Neutrinoless double beta decay', SLAC summer institute, Menlo Park, CA, lectures presented, August 2010.
- 2010, 'Dark Matter searches with noble liquids', 2010 APS meeting, invited talk, Washington DC, February 2010.
- 2007, 'Status of EXO-200', DUSEL town meeting, invited talk, Washington DC, November 2007.
- 2007, 'Neutrinoless double beta decay: a window on the origin of neutrino mass', Workshop on electroweak and precision physics at the 2007 APS Division of Nuclear Physics meeting, Newport News, VA, invited talk, October 2007.
- 2005, 'Probing the origin of neutrino mass with the Enriched Xenon Observatory', SLAC Users Organization meeting, Menlo Park, CA
- 2005, 'The future of EXO: ton-scale xenon TPC with barium tagging', APS-JPS double beta decay workshop at the 2005 APS Division of Nuclear Physics meeting, Kapalua, Hawaii, October 2005.
- 2005, 'Neutrino physics of double beta decay', Aspen Winter Conference, Aspen, Co, February 2005.

Non-Refereed Presentations

- 2015, 'The LZ WIMP dark matter search', APS Division of Particles and Fields meeting, Ann Arbor MI, August 2015.

- 2014, ‘Calibration of the LUX electron recoil band with tritium’, Workshop on low energy physics with liquid xenon detectors, Moscow, Russia, October 2014.
- 2011, ‘Status of the LUX dark matter search’, 2011 Topics in Astroparticle and Underground Physics (TAUP 2011), Munich, Germany, September 2011.
- 2010, ‘Status of the EXO double beta decay search’, International Conference on High Energy Physics (ICHEP 2010), Paris, France, July 2010.
- 2010, ‘A search for weakly interacting dark matter with LUX the experiment’, International Conference on High Energy Physics (ICHEP 2010), Paris, France, July 2010.
- 2009, ‘LUX dark matter search’, Shedding Light on Dark Matter Workshop, College Park, MD, April 2009.
- 2006, ‘Searching for Double Beta Decay with the Enriched Xenon Observatory’, 9th Conference on the Intersections of Particle and Nuclear Physics (CIPANP 2006), Puerto Rico, May 2006.

Colloquia and seminars

- 2020, ‘Status of the LUX-ZEPLIN dark matter experiment’, Cosmic Ray Physics seminar, University of Maryland.
- 2018, ‘Status of the LUX-ZEPLIN dark matter experiment’, seminar, National Institutes of Standards and Technology, Gaithersburg, MD.
- 2018, ‘Down-to-earth searches for cosmological dark matter’, Mitchell Institute seminar, Texas A&M University, College Station, TX.
- 2018, ‘Down-to-earth searches for cosmological dark matter’, Dept. of Physics colloquium, Stony Brook University, Stony Brook, NY.
- 2018, ‘Down-to-earth searches for cosmological dark matter’, Dept. of Physics colloquium, Rutgers University, Piscataway, NJ.
- 2017, ‘Down-to-earth searches for cosmological dark matter’, Dept. of Physics colloquium, Drexel University, Philadelphia, PA.
- 2017, ‘Down-to-earth searches for cosmological dark matter’, Dept. of Physics seminar, Caltech, Pasadena, CA.
- 2017, ‘Down-to-earth searches for cosmological dark matter’, Dept. of Physics seminar, University of Maryland, College Park, MD.
- 2017, ‘Down-to-earth searches for cosmological dark matter’, Dept. of Physics seminar, University of Rochester, Rochester, NY.
- 2017, ‘Down-to-earth searches for cosmological dark matter’, Dept. of Physics seminar, University of California, Davis, Davis, CA.
- 2016, ‘Down-to-earth searches for cosmological dark matter’, Dept. of Physics Colloquium, University of Maryland, College Park, MD.
- 2016, ‘Prospects for the direct detection of dark matter’, Dept. of Physics Colloquium, Northwestern University
- 2015, ‘Status of the LUX and LZ dark matter searches’, University of Virginia physics department seminar
- 2014, ‘First dark matter search results from LUX’, ACFI seminar, University of Massachusetts, Amherst, MA

- 2013, 'First dark matter search results from LUX', University of Maryland Astronomy seminar
- 2013, 'First dark matter search results from LUX', University of Maryland HEP/PA seminar
- 2013, 'Why are neutrinos so light? $\beta\beta_{0\nu}$ results from EXO-200', Harvard University Physics Department Colloquium
- 2013, 'Why are neutrinos so light? $\beta\beta_{0\nu}$ results from EXO-200', Case Western Reserve University seminar
- 2013, 'Why are neutrinos so light? $\beta\beta_{0\nu}$ results from EXO-200', University of Maryland HEP-PA seminar
- 2012, 'Why are neutrinos so light?', Brown University Dept. of Physics colloquium
- 2012, 'LUX dark matter search', Urbana-Champaign Physics department seminar, Univ. of Illinois
- 2011, 'Why are neutrinos so light?', Univ. of North Carolina - Chapel Hill Dept. of Physics colloquium
- 2011, 'Why are neutrinos so light?', Research Progress Meeting, Lawrence Berkeley National Lab
- 2011, 'Why are neutrinos so light?', Univ. of Maryland Dept. of Physics colloquium
- 2011, 'Why are neutrinos so light?', Virginia Tech Dept. of Physics seminar
- 2011, 'LUX dark matter search', High Energy Physics seminar, Indiana University
- 2011, 'First data from the EXO double beta decay experiment', University of Washington CENPA colloquium
- 2011, 'First data from the EXO double beta decay experiment', University of Maryland HEP/PA seminar

Historical Conferences, Workshops, Talks (10+ years ago)

- 2010, 'LUX dark matter search', Laurentian University seminar
- 2010, 'Xe marks the spot: hunting for treasure with the EXO and LUX experiments', MIT nuclear physics seminar
- 2009, 'Searching for double beta decay with the Enriched Xenon Observatory', Harvard University high energy physics seminar
- 2009, 'LUX dark matter search', University of Maryland HEP/PA seminar
- 2008, 'Searching for double beta decay with the Enriched Xenon Observatory', Nuclear physics seminar, University of Kentucky
- 2008, 'Searching for double beta decay with the Enriched Xenon Observatory', High energy physics seminar, University of Wisconsin, Madison
- 2007, 'Searching for double beta decay with the Enriched Xenon Observatory', Indiana University Cyclotron Facility seminar
- 2007, 'Searching for double beta decay with the Enriched Xenon Observatory', University of Chicago high energy physics Colloquium
- 2007, 'Searching for double beta decay with the Enriched Xenon Observatory', Virginia Tech Dept. of Physics Colloquium
- 2006, 'Searching for double beta decay with the Enriched Xenon Observatory', University of Maryland high energy physics seminar

- 2006, ‘Searching for double beta decay with the Enriched Xenon Observatory’, Case Western Reserve University seminar
- 2006, ‘Searching for double beta decay with the Enriched Xenon Observatory’, NIST seminar, Gaithersburg, MD
- 2006, ‘Probing the origin of neutrino mass with double beta decay’, Texas A&M Physics Dept. Colloquium
- 2006, ‘Probing the origin of neutrino mass with double beta decay’, Colorado State University Physics Dept. Colloquium, April 2006
- 2006, ‘Probing the origin of neutrino mass with double beta decay’, Amherst, seminar, University of Massachusetts
- 2006, ‘Probing the origin of neutrino mass with double beta decay’, Physics Dept. Colloquium, University of North Carolina, Chapel Hill
- 2006, ‘Probing the origin of neutrino mass with double beta decay’, University of Maryland seminar
- 2006, ‘Probing the origin of neutrino mass with double beta decay’, Physics Dept. Colloquium, University of Washington
- 2005, ‘Searching for double beta decay with the Enriched Xenon Observatory’, Research Progress Meeting at LBNL
- 2005, ‘Probing the origin of neutrino mass with double beta decay’, University of Maryland seminar
- 2003, ‘EXO: a next generation double beta decay experiment’, Berkeley TPC symposium, invited talk, October
- 2003, ‘Enriched Xenon Observatory for double beta decay’, NOON 2003 conference, Kanazawa, Japan, invited talk, February
- 2003, ‘EXO: a next generation double beta decay experiment’, UC Santa Cruz seminar
- 2003, ‘EXO: a next generation double beta decay experiment’, Indiana University seminar
- 2003, ‘EXO: a next generation double beta decay experiment’, UCLA seminar
- 2002, ‘Direct photon cross-section from Run Ib inclusive electron events at CDF’, APS Meeting, Albuquerque, New Mexico
- 1999, ‘Operation of the Central Outer Tracker at CDF during Tevatron collider Run II’, APS meeting, Atlanta, Georgia

Sponsored Research

- 2019, ‘E-VERIFY: Support for graduate student Eli Mizrahi’, \$37,168, 11/2019 through 6/2020, PI (100%).
- 2019, ‘High energy accelerator and cosmic ray user group at the University of Maryland’, Dept. of Energy, \$875,000 for 4/1/19 through 3/31/22, PI (100%).
- 2018, ‘E-VERIFY: Support for the LZ project at the University of Maryland’, Dept. of Energy subcontract through Lawrence Berkeley National Laboratory, \$206,922, 8/2018 – ongoing, PI (100%).
- 2018, ‘Support for the LZ experiment at the University of Maryland’, Dept. of Energy, \$60,000 for 5/1/18 through 3/31/19, PI (100%).

- 2016, ‘High energy accelerator and cosmic ray user group at the University of Maryland’, Dept. of Energy, \$620,000 for 7/16/16 through 3/31/19, PI (100%).
- 2015, ‘E-VERIFY: LUX/Zeplin (LZ) Project’, Dept. of Energy subcontract through Lawrence Berkeley National Laboratory, \$625,000 for 10/29/2015 through 10/1/2020, PI (100%).
- 2014, ‘Support for LUX, LZ, and Detector R&D at the University of Maryland’, Dept. of Energy, \$174,000 for 05/01/2014 through 03/31/2016, PI (100%).
- 2013, ‘Search for Neutrinoless Double Beta Decay in ^{136}Xe ’, NSF, \$290,557 for 04/01/2013 through 03/31/2016, PI
- 2013, ‘E-VERIFY: Operation of the LUX Experiment’, Dept. of Energy subcontract through Lawrence Berkeley National Laboratory, \$53,075 for 03/04/2013 through 12/31/2016, PI (100%).
- 2013, ‘E-VERIFY: Development of the LZ Dark Matter Experiment’, Dept. of Energy subcontract through Lawrence Berkeley National Laboratory, \$192,798 for 11/20/2013 through 12/31/2015, PI (100%).
- 2011, ‘Early Career: Search for weakly interacting dark matter with liquid xenon’, Dept. of Energy, \$750,000 for 07/01/11 through 06/30/16, PI (100%).
- 2010, ‘Search for neutrinoless double beta decay with the EXO-200 experiment’, NSF, \$510,000 for 07/01/10 through 06/30/13, PI (100%).
- 2010, ‘Search for neutrinoless double beta decay with the EXO-200 experiment’, NSF, \$24,059 for 07/01/10 through 06/30/11, PI (100%).
- 2009, ‘LZ20 Development: The LUX-ZEPLIN 20 Tonne Dark Matter Experiment Technical Development Plan for DUSEL’, NSF, \$232,171 for 7/1/09 through 8/31/13, PI (100%).
- 2009, ‘Search for neutrinoless double beta decay with EXO-200’, NSF, \$25,000 for 07/01/09 through 06/30/10, PI (100%).
- 2008, ‘Detection of Impurities in Cryogenic Liquids with Extreme Sensitivity’, NSF, \$314,176 for 07/15/08 through 06/30/11, PI (100%).
- 2007, ‘Collaborative research for DUSEL: Barium tagging in liquid xenon for EXO’, NSF, \$255,520 for 09/01/07 through 08/30/10, PI (100%).
- 2007, ‘Search for neutrinoless double beta decay with EXO-200’, NSF, \$389,682 for 07/01/07 through 06/30/10, PI (100%).

TEACHING, MENTORING AND ADVISING

Courses Taught

- Physics 410, Classical Mechanics, Spring 2020, 3 credit course. 43 students
- Physics 273, Introductory Physics: Waves, Fall 2019, 3 credit course. 49 students
- Physics 410, Classical Mechanics, Spring 2019, 3 credit course. 36 students
- Physics 405, Advanced Laboratory, Spring 2018, 3 credit course. 15 students
- Physics 405, Advanced Laboratory, Spring 2017, 3 credit course, 20 students
- Physics 375, Experimental Physics III, Optics, Fall 2016, 3 credit course. 22 students
- Physics 410, Classical Mechanics, Spring 2016, 3 credit course. 35 students
- Physics 375, Experimental Physics III, Optics, Fall 2015, 3 credit course. 22 students
- Physics 410, Classical Mechanics, Spring 2015, 3 credit course. 45 students

- Physics 375, Experimental Physics III, Optics, Fall 2014, 3 credit course. 17 students
- Physics 410, Classical Mechanics, Spring 2014, 3 credit course. 45 students
- Physics 273, Introductory Physics: Waves, Fall 2013, 3 credit course. 46 students
- Physics 273, Introductory Physics: Waves, Spring 2013, 3 credit course. 66 students
- Physics 273, Introductory Physics: Waves, Fall 2012, 3 credit course. 45 students
- Physics 273, Introductory Physics: Waves, Spring 2012, 3 credit course. 52 students
- Physics 401, Quantum Physics I, Fall 2011, 3 credit course. 80 students
- Physics 272, Introductory Physics: Fields, Spring 2011, 3 credit course. 35 students
- Physics 401, Quantum Physics I, Fall 2010, 3 credit course. 56 students
- Physics 272, Introductory Physics: Fields, Spring 2010, 3 credit course. 50 students
- Physics 401, Quantum Physics I, Fall 2009, 3 credit course. 59 students
- Physics 272, Introductory Physics: Fields, Spring 2009, 3 credit course. 46 students
- Physics 375, Experimental Physics III, Optics, Fall 2008, 3 credit course. 18 students
- Physics 272, Introductory Physics: Fields, Spring 2008, 3 credit course. 38 students
- Physics 441, Topics in nuclear and particle physics, Spring 2008, 3 credit course. 12 students
- Physics 375, Experimental Physics III, Optics, Fall 2007, 3 credit course. 7 students
- Physics 375, Experimental Physics III, Optics, Fall 2006, 3 credit course. 10 students

Teaching Innovations

Course or Curriculum Development

- 2020, Developed and supervised a project to create online labs during the Covid-19 pandemic, serving seven courses (Phys 103, 115, 121, 122, 261, 271, 375).
- 2008, Physics 441 - Topics in nuclear and particle physics, Developed and team taught with Profs. Orozco and Beise (Spring 2008)

Advising: Research or Clinical

Undergraduate

- Fall 2018, Tori Palmaccio, (2018-2020), research advisor, placed as a graduate student at Temple.
- Fall 2018, Ian Fogarty Florang, (2018-2020), research advisor, placed as a graduate student in physics at UC Boulder.
- Fall 2018, Sarah Weatherly, (2018-2019), research advisor, placed as a graduate student in physics at the Illinois Institute of Technology.
- Spring 2017, Stephanie Williams, (2017-2018), research advisor.
- Summer 2016, Austin Schmier, (2016-2017), research advisor, placed as a graduate student in physics at the University of Tennessee.
- Fall 2015, Nat Swanson, (2015-2018), research advisor, placed as a graduate student in physics at Brown University.
- Summer 2015, John Armstrong, (2015-2018), research advisor, placed as a graduate student in physics at the University of Maryland.
- Summer 2015, Robert Ide (2015), research advisor.
- Summer 2015, Kyle Vance (2015), research advisor.

- Spring 2015, John Silk, (2015-2017), research advisor, placed as a graduate student in physics at the University of Maryland.
- Spring 2015, Sarah Monk (2015-2017), research advisor.
- Spring 2015, Amir Oskoui, (2015), research advisor.
- Spring 2015, Jake Bringewatt, (2015-2016), research advisor.
- Fall 2014, Greg Ridgway, (2014-2015), research advisor.
- Fall 2014, Devon Seymour, (2014-2016), undergraduate student on leave from Brown University, research advisor.
- Fall 2014, Zhongzheng Tian, (2014-2015), research advisor.
- Fall 2014, Nick Salazar, (2014-2016), research advisor.
- Fall 2012, Nick Du, (2012-2015), research advisor, placed as a graduate student in physics at the University of Washington.
- Fall 2011, Kevin Ludwig, (2011-2014), Placed as a graduate student in health physics, Columbia University, research advisor.
- Fall 2013, Jonathan Eschevers, (2013-2014), Placed as graduate student, George Washington University, research advisor and committee chair.
- Fall 2012, Terri Poxon-Pearson, (2012-2013), undergraduate student at American University, placed as a graduate student in physics, Michigan State University, research advisor and committee chair.
- Fall 2010, Wes Szamotula, (2010-2011), winner of the IPST Monroe Martin Prize for Undergraduate Research in Physics.
- Fall 2010, Clint Richardson, (2010-2011), winner of the IPST Monroe Martin Prize for Undergraduate Research in Physics, Placed as graduate student in physics, Boston University.
- Fall 2010, Eran Bar Noy, (2010-2011), Placed as graduate student in biostatistics, UCLA, research advisor.
- Fall 2010, Andrew Rhoten, (2010-2011), research advisor.
- Spring 2011, Jon Balajthy, (2011), Placed as graduate student in physics, University of Maryland, research advisor.
- Spring 2011, Patrick Jefferson, (2011), Placed as graduate student in physics, Harvard University, research advisor.
- Spring 2007, Attila Dobi, (2006-2008), Placed as graduate student in physics, University of Maryland, research advisor.
- Fall 2007, Norvik Voskanian, (2007-2008), Placed as graduate student in materials science, University of Maryland, research advisor.
- Spring 2008, John Carriker, (2008), research advisor.
- Fall 2006, Tom Langford, (2006-2007), Placed as graduate student in physics, University of Maryland, research advisor.
- Spring 2007, Ricky O'Steen, (2007), research advisor.
- Spring 2007, Tom Feroli, (2006), research advisor.

Doctoral

- Fall 2018-ongoing, John Armstrong, LZ dark matter search, (2018-present), research advisor.
- Fall 2018-ongoing, Eli Mizrachi, LZ dark matter search, (2018-present), research advisor.

- Fall 2016-ongoing, John Silk, LZ dark matter search, (2016-present), research advisor.
- Fall 2012-Fall 2017, Dr. Jon Balajthy, Ph.D. dissertation title: ‘Purity monitoring techniques and electronic energy deposition properties in liquid xenon time projection chambers’, (2012-2017), placed as a postdoctoral research associate, University of California, Davis, research advisor and committee chair.
- Fall 2011-Fall 2016, Dr. Richard Knoche, Ph.D. dissertation title: ‘Signal corrections and calibrations in the LUX dark matter detector’, (2011-2016), placed into the Insight Data Science program, research advisor and committee chair.
- Fall 2009-Fall 2014, Dr. Attila Dobi, Ph.D. dissertation title: ‘Measurement of the electron recoil band of the LUX dark matter detector with a tritium calibration source’, (2009-2014), Placed as a Chamberlain Fellow, Lawrence Berkeley National Lab, research advisor and committee chair.
- Fall 2010-Spring 2014, Dr. Clayton Davis, Ph.D. dissertation title: ‘A Search for the Neutrinoless Double Beta Decay of Xenon-136 with Improved Sensitivity from Denoising’, (2010-2014), Placed as a staff scientist, Naval Research Laboratory, research advisor and committee chair.
- Fall 2007-Sum II 2013, Dr. Yung-Ruey Yen, Ph.D. dissertation title: ‘A Search for the Double- Beta Decay of ^{136}Xe to an Excited State of ^{136}Ba with EXO-200’, (2007-2013), Placed as a postdoctoral research associate, Drexel University, research advisor and committee chair.
- Fall 2007-Spring 2013, Dr. Simon Slutsky, Ph.D. dissertation title: ‘A Search for Neutrinoless Double-Beta Decay with EXO-200’, (2007-2013), Placed as a postdoctoral research associate, Caltech, research advisor and committee chair.

Post-doctoral

- Fall 2018-Summer 2020, Dr. Doug Tiedt, Placed as a staff scientist at the Sanford Underground Research Facility.
- Fall 2009-Spring 2011, Dr. Doug Leonard, (2009-2011), Placed as an Assistant Prof. of Physics (tenure track), University of Seoul.
- Fall 2007-Spring 2010, Dr. Lisa Kaufman, (2007-2010), Placed as an Assistant Prof. of Physics (tenure track), Indiana University.

SERVICE AND OUTREACH

Editorships, Editorial Boards and Reviewing Activities

Reviewing Activities for Journals and Presses

- Referee for articles in Physical Review Letters, Physical Review C, Physical Review D, European Physical Review, Review of Scientific Instruments, Science China

Reviewing Activities for Agencies and Foundations

- Reviewer for the Department of Energy Office of Science, the National Science Foundation, NSERC (Canada), and the Netherlands Organisation for Scientific Research, STFC (UK), ANR (France).

Committees, Professional & Campus Service

Campus Service - Department

- 2020-present, Assoc. Chair for Undergraduate Education, Dept. of Physics
- 2019-2020, Chair, Qualifying exam committee.
- 2017-2018, Member, faculty search committee in High Energy Physics.
- 2015-2019, Member, Physics department salary committee; chair in 2019
- 2009-2010, Graduate advising committee, 2009-2010
- 2008-2010, Colloquium committee, 2008-2010
- 2008-2011, Undergraduate education committee, 2008-2011
- 2008-2011, Physics council, 2008-2009, 2011
- 2008-2016, 11th grade summer girls program, 2008-2016
- 2007-2008, Undergraduate laboratory committee, 2007-2008
- 2007-2013, Graduate admissions committee, 2007-2013
- 2006-2007, Computing committee, 2006-2007

Campus Service – College

- CMNS Awards Review Committee, 2015

Campus Service - University

- 2015-2018, Member, University Senate, physics department representative
- 2015-2017, Member, Research Council
- 2008, Bancker/Key Scholarship committee, (2008)

Leadership Roles in Meetings and Conferences

- 2017, Organizing committee, ‘US Cosmic Visions: New Ideas in Dark Matter’, Stamp Student Union, University of Maryland
- 2013, Organizing committee, ‘New directions in neutrino physics’, Aspen Center for Physics Workshop, February 2013
- 2013, Organizing committee, ‘High Voltage in Liquid Noble Detectors’, Fermilab workshop, November 2013

Other Non-University Committees, Memberships, Panels, etc.

- 2021, Member, Dept. of Energy Fundamental Symmetries Comparative Review Panel
- 2021, Member, Dept. of Energy Cosmic Frontier Comparative Review Panel
- 2017-2019, Spokesperson, LZ dark matter experiment, 2017 - 2019
- 2016, Member, Department of Energy Cosmic Frontier Comparative Review Panel
- 2013-2014, Chair, LZ Institutional Board, 2013 – 2014
- 2013, Member, Department of Energy Cosmic Frontier National Lab Review Panel
- 2012-Ongoing, Member, LZ Institutional Board, 2012 - present
- 2012-2015, Member, LZ Executive Board
- 2008-Ongoing, Member, LUX Executive Board, 2008 - present

- 2006-2018, Member, EXO-200 Collaboration board

Non-Research Presentations

Outreach Presentations

- 2010, 'LUX dark matter search', University of Maryland Department of Physics, December 2010, staff lecture
- 2009, 'LUX dark matter search', Maryland Day, College Park MD, April 2009, Public lecture

Media Contributions

Broadcast Media and Podcasts

- Interviewed for BBC World Service radio program 'Science in Action', air date April 27, 2017.
- Interviewed for Department of Energy podcast 'Direct Current - An Energy.gov Podcast', Season 2 Episode 6 'A shot in the dark', September 13, 2017.

Print Media

- February 14, 2017, 'Berkeley Lab in race to create first successful dark matter detector', The Daily Californian, Quoted
- 2013, 'Explain it in sixty seconds: Neutrinoless double beta decay', Symmetry Magazine, Co-author
- 2013, 'Solution to Long-standing Neutrino Puzzle May Be within Reach', Calla Cofield, Scientific American, Quoted

AWARDS, HONORS AND RECOGNITION

Research Fellowships, Prizes and Awards

- 2011, Department of Energy Early Career award
- 2010, Richard A. Ferrell Distinguished Faculty Award, University of Maryland
- 2000, Goldhaber Prize, Harvard University
- 1998, Wallace-Noyes Fellowship, Harvard University
- 1996, H.Y. Loh award, Virginia Tech
- 1995, Phi Beta Kappa, Virginia Tech
- 1995, Robert P. Hamilton Prize, Virginia Tech
- 1995, Hugh D. Ussery Scholarship, Virginia Tech, (1994-1995)

Teaching Awards

- 2014, CMNS Dean's Award for Excellence in Teaching, University of Maryland