

## Curriculum Vitae Wolfgang Lorenzon

Professor of Physics  
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### Education

1988	Ph.D.	University of Basel, Switzerland (Experimental Physics)
1984	Diploma	University of Basel, Switzerland (Experimental Physics)

### Appointments

2006 - present	Professor, Physics Department, University of Michigan
2000 - 2006	Associate Professor, Physics Department, University of Michigan
1996 - 2000	Assistant Professor, Physics Department, University of Michigan
1994 - 1996	Assistant Professor, Department of Physics and Astronomy, University of Pennsylvania

### Research Interests

Dark Matter search (LZ experiment)  
Proton Radius puzzle (MUSE experiment)

### Professional Experience

2024 - 2025	Visiting Professor, University of Zürich, Switzerland, June 2024–July 2025
2024	Guest Scientist, PSI, Switzerland, June 2024–Dec 2024
2017 - 2018	Visiting Physicist, SLAC, Menlo Park, California, August 2017–July 2018
2010	URA Visiting Scholar, Fermilab, Batavia, Illinois, July–December 2010
2005	Guest Scientist, LBL, Berkeley, California, January–July 2005
1997 - 1998	Deputy Spokesman of HERMES Experiment, DESY, Hamburg, Germany
1996 - 1998	Visiting Scientist, DESY, Hamburg, Germany, January–August: each year
1992 - 1994	Research Associate, TRIUMF / Simon Fraser University, Vancouver, Canada
1989 - 1992	Research Fellow, California Institute of Technology, Pasadena, CA

### Awards and Fellowships

2010	Fellow, American Physical Society (APS)
1999	University of Michigan, LS&A Excellence in Research Award

## Grants

2024 - 2027	Department of Energy, “Probing Dark Matter and Dark Energy”, (PI, with Huterer, Avestruz and Schubnell as Co-PIs for Task DE), \$1,275,000
2024 - 2026	National Science Foundation, “Studies of Nucleons with MUSE at PSI”, (Single PI) \$190,000
2023 - 2027	Department of Energy, “Renew Midwest from the Underground to the Cosmos”, (PI) \$1,249,885
2021 - 2025	National Science Foundation, “Studies of Nucleons at Fermilab and PSI”, (Single PI) \$999,478 + \$ 132,056 in a supplemental grant
2021 - 2026	LBNL, subcontract for “LZ operations travel”, (PI) \$463,004
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2021 - 2024	Department of Energy, “Search for Dark Matter with the LZ experiment”, (PI, with Penning as Co-PI for Task DM), \$1,065,000
2021 - 2022	2021 DOE SCGSR Award for graduate student Noah Wuerfel, (PI), \$38,000
2021 - 2022	National Science Foundation, COVID supplemental for 2 grad students (Single PI) \$127,000
2018 - 2021	National Science Foundation, “Nuclear Physics Studies at Fermilab and PSI”, (Single PI) \$1,125,000 + \$30,001 in a supplemental grant for M. Scott (4 month PD)
2021	2021 URA Visiting Fellow Award for postdoc Ievgen Lavrukhin (PI), \$15,000
2020 - 2021	2020 URA Visiting Scholar Award for graduate student Noah Wuerfel, (PI), \$12,000
2018 - 2021	Department of Energy, “Search for Dark Matter with the LZ experiment”, (PI for Task L), \$525,000
2017 - 2020	LBNL, subcontract for “LZ travel to SLAC, SURF, etc”, (Single PI) \$78,500
2016 - 2019	National Science Foundation, “A Liquid Hydrogen Target for the MUSE Experiment”, (Single PI) \$588,994 + \$57,412 in a supplemental grant (2017)
2015 - 2019	Department of Energy through LBNL, “Rn Removal system for LZ Project”, (PI, with Akerlof as Co-PI) \$273,000
2017 - 2018	SLAC, subcontract for “Sabbatical Salary support to work on LZ at SLAC”, (Single PI) \$76,293
2016 - 2018	Department of Energy, “Search for Dark Matter with the LZ experiment”, (PI, with Akerlof as Co-PI), \$340,000
2016 - 2018	LSA Instructional Technology New Initiatives/ New Infrastructure (NINI) Grants, “Advancing Physics Lab Reform: Using FlipItPhysics to Prepare At-Risk Students to Succeed”, (Co-PI with Michelotti, Orr, and Popov) \$75,000
2016	Gift for “Spin Polarized Beam at Fermilab”, \$8,000
2015 - 2018	National Science Foundation, “Drell-Yan Studies at Fermilab” (Single PI) \$636,000 + \$277,033 in five supplemental grants (2016 – 2018)
2015 - 2018	University of Michigan, “Dark Matter Search with LZ”, (PI, with Akerlof as Co-PI), \$125,000 (\$50k LSA, \$50k OVPR, \$25k Physics Dept.)
2015 - 2016	U-M Transforming Learning for Third Century (TLTC) Quick Wins/Discovery grant program, “Launch for Incorporating Computational Modeling in Introductory Physics Labs”, (Co-PI with Michelotti, Orr, and Popov) \$49,823
2015	Gift for “Spin Polarized Beam at Fermilab”, \$17,000

2013 - 2015 University of Michigan, “PandaX: A Dark Matter Experiment in China”, (PI, with Tarle, Gerdes, Schwarz as Co-PIs), \$150,000

2012 - 2015 National Science Foundation, “Drell-Yan Scattering: SeaQuest and Beyond”, (Single PI) \$420,000 + \$30,986 in a supplemental grant (2015)

2011 - 2014 Department of Energy, “Electric Dipole Moment Measurements with Rare Isotopes: The Radon-EDM Experiment” (Co-PI with Chupp) \$360,000

2014 Gift for “Spin Polarized Beam at Fermilab”, \$15,000

2013 Spring/Summer Rackham research grant, \$10,940

2013 Gift for “Spin Polarized Beam at Fermilab”, \$10,000

2011 - 2012 University of Michigan, “PandaX: A Dark Matter Experiment in China”, (PI, with Tarle, Gerdes, Chupp as Co-PIs), \$311,000

2011 Gift for “Spin Polarized Beam at Fermilab - Research Fellow Support”, \$15,000

2010 URA Visiting Scholars Program at Fermilab, \$33,367

2010 - 2012 Department of Energy, “Proposal to Study the Properties and Interactions of Elementary Particles”, Dark Energy Task, (Co-PI with Tarle, Gerdes and McKay) \$485,000 + \$240,000 (bridging funds: Oct 11 – Apr 12) + \$37,500 in a supplemental (ARRA) grant (2010)

2009 - 2012 National Science Foundation, “Intermediate Energy Nuclear Physics”, (Single PI) \$625,000

2009 - 2010 Department of Energy, “Proposal to Study the Properties and Interactions of Elementary Particles”, Dark Energy Task, (Co-PI with Tarle, Gerdes and McKay) \$443,000

2009 Department of Energy, Dark Energy Task Supplement, (Co-PI with Tarle) \$58,000 + \$18,000 in a supplemental grant (2009) + added to HEP Umbrella base grant

2008 - 2010 Department of Energy, “Precision Photometry to Study the Nature of Dark Energy”, (PI, with Schubnell Co-PI) \$120,089

2007 - 2010 Department of Energy, “Electric Dipole Moment Measurements with Rare Isotopes: The Radon-EDM Experiment” (Co-PI with Chupp) \$313,000

2007 Brookhaven National Lab, Jefferson Lab, “Workshop on Precision Polarimetry for the EIC”, (PI) \$4,000

2006 - 2009 National Science Foundation, “Hadronic Physics with Electromagnetic Probes at HERMES”, (Single PI) \$529,726 + \$24,628 in two supplemental grants

2004 - 2006 Department of Energy, “CP Odd Electric Dipole Moment Measurements with Rare Isotopes”, (PI with Chupp) \$164,000 + \$22,000 in a supplemental grant (2005)

2003 - 2006 National Science Foundation, “Hadronic Physics with Electromagnetic Probes at HERMES”, (Single PI) \$544,434

2000 - 2003 National Science Foundation, “Intermediate Energy Nuclear Physics at HERMES”, (Single PI) \$420,000 + \$16,243 in a supplemental grant

1997 - 2000 National Science Foundation, “Research in Intermediate Energy Nuclear Physics”, (Single PI) \$359,760 + \$46,116 in three supplemental grants

1995 - 1996 National Science Foundation, “Equipment Grant for building a longitudinal polarimeter at the HERA Storage ring at DESY, Hamburg”, Co-PI’s, D. Balamuth, H.T. Fortune, and R. Zurmuhle, \$137,500

1995 National Science Foundation, “Research in Nuclear Physics”, Co-PI’s, D. Balamuth, H.T. Fortune, and R. Zurmuhle, \$625,000

## Publications in Refereed Journals

Published: 195 articles in refereed journals, - 1 article accepted - 10 articles submitted.

Total number of citations: 21,517 (GoogleScholar), h-index: 73, i10-index: 172 (February 12, 2025)

## Articles published in Refereed Journals

1. R. Henneck *et al.*, *Nucl. Instr. Meth.* **A259**, (1987) 329. "A Facility for Monoenergetic Polarized Neutrons of 30-70 MeV"
2. R. Henneck *et al.*, *Phys. Rev.* **C37**, (1988) 2224. "0° Polarization Transfer in (p,n)-Reactions from  ${}^6,7\text{Li}$  and  ${}^9\text{Be}$  near 55 MeV"
3. S. Burzynski *et al.*, *Phys. Rev.* **C39**, (1989) 56. "p- ${}^4\text{He}$  Scattering: New Data and a Phase-Shift Analysis between 30 and 72 MeV"
4. B. von Przewoski *et al.*, *Nucl. Phys.* **A496**, (1989) 15. "A measurement of  $\frac{d\sigma}{d\Omega}$  and  $A_y$  in elastic proton scattering from  ${}^{12,13}\text{C}$ ,  ${}^{29}\text{Si}$  and  ${}^{31}\text{P}$  at 72 MeV"
5. M.A. Pickar *et al.*, *Phys. Rev.* **C42**, (1990) 20. "0° polarization transfer in  ${}^2\text{H}(\vec{p}, \vec{n}pp)$  at 54 and 71 MeV"
6. C. Brogli-Gysin *et al.*, *Phys. Rev.* **B250**, (1990) 11. " $A_y$  in n-d elastic scattering: a test for three-nucleon calculations"
7. C.E. Woodward *et al.*, *Phys. Rev. Lett.* **65**, (1990) 698. "Measurement of Inclusive Quasielastic Scattering of Polarized Electrons from Polarized  ${}^3\text{He}$ "
8. J.P. Chen *et al.*, *Phys. Rev. Lett.* **66**, (1991) 1283. "Longitudinal and Transverse Response Functions in  ${}^{56}\text{Fe}(e,e')$  at Momentum Transfer Near 1 GeV/c"
9. H. Hammans *et al.*, *Phys. Rev. Lett.* **66**, (1991) 2293. "Neutron-Proton Spin-Correlation Parameter  $A_{zz}$  at 68 MeV"
10. C.E. Jones-Woodward *et al.*, *Phys. Rev.* **C44**, (1991) R571. "Determination of the Neutron Electric Form Factor in Quasielastic Scattering of Polarized Electrons from Polarized  ${}^3\text{He}$ "
11. Z.E. Meziani *et al.*, *Phys. Rev. Lett.* **69**, (1992) 41. "High Momentum Transfer  $R_{T,L}$  Inclusive Response Functions for  ${}^{3,4}\text{He}$ "
12. C.E. Jones *et al.*, *Phys. Rev.* **C47**, (1993) 110. " ${}^3\vec{H}e(\vec{e}, e')$  quasielastic asymmetry"
13. K. Lee *et al.*, *Phys. Rev. Lett.* **70**, (1993) 738. "Measurement of Spin Observables using a Storage Ring with polarized Beam and Polarized Internal Gas Target"
14. W. Lorenzon *et al.*, *Phys. Rev.* **A47**, (1993) 468. "NMR calibration of optical measurement of nuclear polarization in  ${}^3\text{He}$ "
15. Z.E. Meziani *et al.*, *Nucl. Phys.* **A553**, (1993) 701. "High Momentum Transfer  $R_{T,L}$  Response Functions for  ${}^{3,4}\text{He}$ "
16. W. Lorenzon *et al.*, *Europhys. Lett.* **21**, (1993) 747. "Search for an Isotensor Electromagnetic Interaction"
17. D.P. Barber *et al.*, *Nucl. Instr. Meth.* **A329**, (1993) 79. "The HERA Polarimeter and the first Observation of Electron Spin at HERA"
18. N.C.R. Makins *et al.*, *Phys. Rev. Lett.* **72**, (1994) 1986. "Momentum Transfer Dependence of Nuclear Transparency from the Quasielastic  ${}^{12}\text{C}(e,e'p)$  Reaction"
19. H. Hammans *et al.*, *Phys. Rev. Lett.* **72**, (1994) 2665. "Neutron-Proton Spin-Correlation Parameter  $A_{zz}$  at 68 MeV – Reply"
20. W. Lorenzon *et al.*, *Nucl. Instr. Meth.* **A342**, (1994) 516. "Gas Scintillation in He-N $_2$ -CH $_4$  and He-N $_2$  mixtures"
21. H. Gao *et al.*, *Phys. Rev.* **C50**, (1994) R546. "Measurement of neutron magnetic form factor from inclusive quasielastic scattering of polarized electrons from polarized  ${}^3\text{He}$ ".

22. C. Bloch *et al.*, *Nucl. Instr. Meth.* **A354**, (1995) 437. "Spin-dependent scattering of polarized protons from a polarized  $^3\text{He}$  internal gas target"
23. M.A. Miller *et al.*, *Phys. Rev. Lett.* **74**, (1995) 502. "Measurement of Quasielastic  $^3\text{He}(\vec{p}, pN)$  Scattering from Polarized  $^3\text{He}$  and the Three-Body Ground State Spin Structure".
24. J.E. Belz *et al.*, *Phys. Rev. Lett.* **74**, (1995) 646. "Two Body Photodisintegration of the Deuteron up to 2.8 GeV"
25. J.-O. Hansen *et al.*, *Phys. Rev. Lett.* **74**, (1995) 654. "Transverse-Longitudinal Asymmetry in the Quasielastic  $^3\vec{H}e(\vec{e}, e')$  Reaction"
26. T.G. O'Neill *et al.*, *Phys. Lett.* **B351**, (1995) 87. "A Dependence of Nuclear Transparency in Quasielastic A(e,e'p) at High  $Q^2$ "
27. W.J. Cummings *et al.*, *Phys. Rev.* **A51**, (1995) 4842. "Optical Pumping of Rb Vapor using High Power GaAlAs Diode Laser Arrays"
28. H.J. Bulten *et al.*, *Phys. Rev. Lett.* **74**, (1995) 4775. "Exclusive Electron-Scattering from Deuterium at High Momentum-transfer"
29. C.E. Jones *et al.*, *Phys. Rev.* **C52**, (1995) 1520. "Measurement of spin-dependent asymmetry in  $^3\vec{H}e(\vec{e}, e')$  inelastic scattering at low energy transfer"
30. J.F.J. van den Brand *et al.*, *Phys. Rev.* **D52**, (1995) 4868. "Evidence for virtual Compton scattering from the proton"
31. J. Arrington *et al.*, *Phys. Rev.* **C53**, (1996) 2248. "Inclusive Electron Scattering from Nuclei at  $x \sim 1$ "
32. R.G. Milner *et al.*, *Phys. Lett.* **B379**, (1996) 67. "The Spin-dependent Momentum Distributions of the Neutron and Proton in  $^3\text{He}$ ".
33. K. Ackerstaff *et al.*, *Phys. Lett.* **B404**, (1997) 383. "Measurement of the Neutron Spin Structure Function  $g_1^n$  with a Polarized  $^3\text{He}$  Internal Target".
34. P. Bogorad *et al.*, *Nucl. Instr. Meth.* **A398**, (1997) 211. "A Combined Polarized Target/Ionization Chamber for Measuring the Spin Dependence of Nuclear Muon Capture in Laser Polarized  $^3\text{He}$ ".
35. P.A. Souder *et al.* *Nucl. Instr. Meth.* **A402**, (1998) 311. "Laser polarized muonic  $^3\text{He}$  and spin dependent  $\mu^-$  capture"
36. D. Abbott *et al.*, *Phys. Rev. Lett.* **80**, (1998) 5072. "Quasifree (e,e'p) Reactions and Proton Propagation in Nuclei"
37. B.B. Blinov *et al.*, *Phys. Rev. Lett.* **81**, (1998) 2906. "Spin flipping in the presence of a full Siberian snake"
38. P. Chu *et al.*, *Phys. Rev.* **E58**, (1998) 4973. "Unexpectedly Wide rf-induced Synchrotron Sideband Depolarizing Resonances"
39. K. Ackerstaff *et al.*, *Nucl. Instr. Meth.* **A417**, (1998) 230. "The HERMES Spectrometer"
40. A. Airapetian *et al.*, *Phys. Lett.* **B442**, (1998) 484. "Measurement of the Proton Spin Structure Function  $g_1^p$  with a Pure Hydrogen Target"
41. K. Ackerstaff *et al.*, *Phys. Rev. Lett.* **81**, (1998) 5519. "Flavor Asymmetry of the Light Quark Sea from Semi-inclusive Deep-inelastic Scattering"
42. K. Ackerstaff *et al.*, *Phys. Lett.* **B444**, (1998) 531. "Determination of the Deep Inelastic Contribution to the Generalised Gerasimov-Drell-Hearn Integral for the Proton and Neutron"
43. K. Ackerstaff *et al.*, *Phys. Rev. Lett.* **82**, (1999) 1164. "Beam-Induced Nuclear Depolarization in a Gaseous Polarized Hydrogen Target"
44. K. Ackerstaff *et al.*, *Phys. Rev. Lett.* **82**, (1999) 3025. "Observation of Coherence Length Effects in Exclusive  $\rho^0$  Electroproduction"

45. B.B. Blinov *et al.*, *Phys. Rev. Spec. Top.* **2**, (1999) 064001. “Synchrotron-sideband snake depolarizing resonances”
46. K. Ackerstaff *et al.*, *Phys. Lett.* **B464**, (1999) 123. “Flavor Decomposition of the Polarized Quark Distributions in the Nucleon from Inclusive and Semi-inclusive Deep-inelastic Scattering”
47. K. Ackerstaff *et al.*, *Phys. Lett.* **B475**, (2000) 386. “Nuclear Effects on  $R = \sigma_L/\sigma_T$  in Deep Inelastic Scattering”
48. A. Airapetian *et al.*, *Phys. Rev. Lett.* **84**, (2000) 2584. “Measurement of the Spin Asymmetry in the Photoproduction of pairs of High- $p_T$  Hadrons at HERMES”
49. A. Airapetian *et al.*, *Phys. Rev. Lett.* **84**, (2000) 4047. “Evidence for a Single-Spin Azimuthal Asymmetry in Semi-Inclusive Pion Electroproduction”
50. D. Dutta *et al.*, *Phys. Rev.* **C61**, (2000) 061602(R). “Separated spectral functions for the quasifree  $^{12}\text{C}(e, e'p)$  reaction”
51. A. Airapetian *et al.*, *Eur. Phys. J.* **C17**, (2000) 389. “Exclusive leptonproduction of  $\rho^0$  mesons from hydrogen at intermediate virtual photon energies”
52. A. Airapetian *et al.*, *Phys. Lett.* **B494**, (2000) 1. “The  $Q^2$ -dependence of the Generalized Gerasimov-Drell-Hearn Integral for the Proton”
53. K. Ackerstaff *et al.*, *Eur. Phys. J.* **C18**, (2000) 303. “Measurement of Angular Distributions and  $R = \sigma_L/\sigma_T$  in Diffractive Electroproduction of  $\rho^0$  Mesons”
54. A. Airapetian *et al.*, *Eur. Phys. J.* **C20**, (2001) 479. “Hadron formation in deep-inelastic positron scattering in a nuclear environment”
55. A. Airapetian *et al.*, *Phys. Lett.* **B513**, (2001) 301. “Double-Spin Asymmetry in the Cross Section for Exclusive  $\rho^0$  Production in Lepton-Proton Scattering”
56. E.C. Schulte *et al.*, *Phys. Rev. Lett.* **87**, (2001) 102302. “Measurement of the high energy two-body deuteron photodisintegration differential cross section”
57. A. Airapetian *et al.*, *Phys. Rev.* **D64**, (2001) 097101. “Single-Spin Azimuthal Asymmetry in the Electroroduction of Neutral Pions in Semi-inclusive Deep Inelastic Scattering”
58. A. Airapetian *et al.*, *Phys. Rev. Lett.* **87**, (2001) 182001. “Measurement of the Beam-Spin Azimuthal Asymmetry Associated with Deeply-Virtual Compton Scattering”
59. A. Airapetian *et al.*, *Eur. Phys. J.* **C21**, (2001) 599. “Multiplicity of Charged and Neutral Pions in Deep-Inelastic Scattering of 27.5 GeV Positrons on Hydrogen”
60. V.S. Morozov *et al.*, *Phys. Rev. Accel. Beams* **4**, (2001) 104002. “Spin-flipping polarized electrons”
61. A. Airapetian *et al.*, *Phys. Rev.* **D64**, (2001) 112005. “Measurement of Longitudinal Spin Transfer to Lambda Hyperons in Deep Inelastic Lepton Scattering”
62. B.B. Blinov *et al.*, *Phys. Rev. Lett.* **88**, (2002) 014801. “99.6% Spin-flip efficiency in the presence of a strong Siberian snake”
63. M. Beckmann *et al.*, *Nucl. Instr. Meth.* **A479**, (2002) 334. “The Longitudinal Polarimeter at HERA”
64. A. Airapetian *et al.*, *Phys. Lett.* **B535**, (2002) 85. “Single-spin azimuthal asymmetry in exclusive electroproduction of  $\pi^+$  mesons”
65. K. Garrow *et al.*, *Phys. Rev.* **C66**, (2002) 044613. “Nuclear transparency from quasielastic  $A(e, e'p)$  reactions up to  $Q^2 = 8.1$  (GeV/c) $^2$ ”
66. A. Airapetian *et al.*, *Phys. Rev. Lett.* **90**, (2003) 052501. “ $Q^2$  Dependence of Nuclear Transparency for (In)coherent  $\rho^0$  production”
67. A. Airapetian *et al.*, *Phys. Rev. Lett.* **90**, (2003) 092002. “Evidence for Quark-Hadron Duality in the Proton Spin Asymmetry  $A_1$ ”

68. A. Airapetian *et al.*, *Eur. Phys. J.* **C26**, (2003) 527. "The  $Q^2$  Dependence of the Generalized Gerasimov-Drell-Hearn Sum Rule for the Proton and the Neutron"
69. A. Airapetian *et al.*, *Phys. Lett.* **B562**, (2003) 182. "Measurement of single-spin azimuthal asymmetries in semi-inclusive electroproduction of pions and kaons on a longitudinally polarized deuterium target"
70. A. Airapetian *et al.*, *Eur. Phys. J.* **C29**, (2003) 171. "Double-spin asymmetry in rho and phi production at intermediate energies"
71. A. Airapetian *et al.*, *Phys. Lett.* **B567**, (2003) 339. "Erratum to: Nuclear Effects on  $R = \sigma_L/\sigma_T$  in Deep Inelastic Scattering [K. Ackerstaff *et al.*, *Phys. Lett. B* 475, (2000) 386]"
72. D. Dutta *et al.*, *Phys. Rev.* **C68**, (2003) 064603. "Quasielastic (e,e'p) reaction on  $^{12}\text{C}$ ,  $^{56}\text{Fe}$ , and  $^{97}\text{Au}$ "
73. A. Airapetian *et al.*, *Phys. Lett.* **B577**, (2003) 37. "Quark fragmentation to  $\pi^\pm$ ,  $\pi^0$ ,  $K^\pm$ ,  $p$  and  $\bar{p}$  in the nuclear environment"
74. A. Airapetian *et al.*, *Phys. Rev. Lett.* **92**, (2004) 012005. "Flavor Decomposition of the Sea-Quark Helicity Distributions in the Nucleon from Semiinclusive Deep Inelastic Scattering"
75. J. Rhodes *et al.*, *Astropart. Phys.* **20**, (2004) 377. "Weak lensing from space I: instrumentation and survey strategy"
76. A. Airapetian *et al.*, *Phys. Lett.* **B585**, (2004) 213. "Evidence for a narrow  $|S|=1$  baryon state at a mass of 1528 MeV in quasi-real photoproduction"
77. A. Airapetian *et al.*, *Eur. Phys. J.* **D29**, (2004) 21. "Nuclear Polarization of Molecular Hydrogen Recombined on a Non-metallic Surface"
78. A. Airapetian *et al.*, *Phys. Lett.* **B599**, (2004) 212. "Hard Exclusive Electroproduction of  $\pi^+\pi^-$  Pairs"
79. M.E. Christy *et al.*, *Phys. Rev.* **C70**, (2004) 015206. "Measurement of electron-proton elastic cross sections for  $0.4 < Q^2 < 5.5$  (GeV/c) $^2$ "
80. W. Lorenzon, *Fizika* **B13**, (2004) 315. "Flavor separated quark polarizations at HERMES" (refereed conference proceedings)
81. A. Airapetian *et al.*, *Phys. Rev. Lett.* **94**, (2005) 012002. "Single-Spin Asymmetries in Semi-Inclusive Deep-Inelastic Scattering on a Transversely-Polarized Hydrogen Target"
82. A. Airapetian *et al.*, *Phys. Rev.* **D71**, (2005) 012003. "Quark Helicity Distributions in the Nucleon for up-, down-, and strange-quarks from Semi-inclusive Deep-inelastic Scattering"
83. A. Airapetian *et al.*, *Phys. Rev.* **D71**, (2005) 032004. "Search for an exotic  $S=-2$ ,  $Q=-2$  baryon resonance at a mass near 1862 MeV in quasi-real photoproduction"
84. A. Airapetian *et al.*, *Nucl. Instr. and Meth.* **A540**, (2005) 68. "The HERMES Polarized Hydrogen and Deuterium Internal Gas Target"
85. A. Airapetian *et al.*, *Phys. Lett.* **B622**, (2005) 14. "Subleading-twist effects in single-spin asymmetries in semi-inclusive deep-inelastic scattering on a longitudinally polarized hydrogen target"
86. A. Airapetian *et al.*, *Phys. Rev. Lett.* **95**, (2005) 242001. "Measurement of the Tensor Structure Function  $b_1$  of the Deuteron"
87. A. Airapetian *et al.*, *Phys. Rev. Lett.* **96**, (2006) 162301. "Double-hadron leptoproduction in the nuclear medium"
88. A. Airapetian *et al.*, *Phys. Rev.* **D74**, (2006) 072004. "Longitudinal spin transfer to the Lambda hyperon in semi-inclusive deep-inelastic scattering"
89. J.A. Fairfield *et al.*, *IEEE Trans. Nucl. Scie.* **53**, (2006) 3877. "Reduced charge diffusion in thick, fully depleted CCDs with enhanced red sensitivity"
90. A. Airapetian *et al.*, *Phys. Rev.* **D75**, (2007) 012007. "Precise determination of the spin structure function  $g_1$  of the proton, deuteron, and neutron"

91. A. Airapetian *et al.*, *Phys. Rev.* **D75**, (2007) 011103. “Beam-charge azimuthal asymmetry and deeply virtual Compton scattering ”
92. V. Tvaskis *et al.*, *Phys. Rev. Lett.* **98**, (2007) 142301. “Longitudinal-Transverse Separations of Deep-Inelastic Structure Functions at Low  $Q^2$  for Hydrogen and Deuterium”
93. N. Barron *et al.*, *PASP.* **119**, (2007) 466-475. “Sub-Pixel Response Measurement of Near-Infrared Sensors”
94. A. Airapetian *et al.*, *Phys. Lett.* **B648**, (2007) 164. “Beam-Spin Asymmetries in the Azimuthal Distribution of Pion Electroproduction”
95. A. Airapetian *et al.*, *Nucl. Phys.* **B780**, (2007) 1. “Hadronization in Semi-inclusive deep inelastic scattering on nuclei”
96. E. Alden, M. Kennedy, W. Lorenzon, and W. Smith, *The Physics Teacher* **45**, (2007) 492-495. “An Electromagnetic Induction Flashlight Experiment”
97. A. Airapetian *et al.*, *Phys. Rev.* **D76**, (2007) 092008. “Transverse Polarization of Lambda and Lambda-bar Hyperons in Quasi-Real Photon-Nucleon Scattering at HERMES”
98. A. Airapetian *et al.*, *Phys. Lett.* **B659**, (2008) 486-492. “Cross sections for hard exclusive electroproduction of  $\pi^+$  mesons on a hydrogen target”
99. E.R. Tardiff *et al.*, *Phys. Rev.* **C77**, 052501(R) (2008). “Polarization and relaxation rates of radon”
100. A. Airapetian *et al.*, *JHEP* **06**, (2008) 017. “Evidence for a Transverse Single-Spin Asymmetry in Leptoproduction of  $\pi^+\pi^-$  Pairs”
101. A. Airapetian *et al.*, *JHEP* **06**, (2008) 066. “Measurement of Azimuthal Asymmetries With Respect To Both Beam Charge and Transverse Target Polarization in Exclusive Electroproduction of Real Photons”
102. A. Airapetian *et al.*, *Phys. Lett.* **B666**, (2008) 446. “Measurement of parton distributions of strange quarks in the nucleon from charged-kaon production in deep-inelastic scattering on the deuteron”
103. A. Airapetian *et al.*, *Phys. Lett.* **B679**, (2009) 100. “Exclusive  $\rho^0$  electroproduction on transversely polarized protons”
104. A. Airapetian *et al.*, *Eur. Phys. J.* **C62**, (2009) 659. “Spin Density Matrix Elements in Exclusive  $\rho^0$  Electroproduction on  $^1\text{H}$  and  $^2\text{H}$  Targets at 27.5 GeV Beam Energy”
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27. W. Lorenzon, “The LZ Dark Matter experiment”, ed. Paolo Checchia, Mauro Mezzetto and 15 others, *PoS EPS-HEP2017 (2017) 072* , (DOI: 10.22323/1.314.0072).
28. W. Lorenzon, “The MUSE experiment at PSI: Status and Plans”, *Proceedings of Science NuFact2019* (2020) 076.  
online at : <https://pos.sissa.it/369/076> (DOI: <https://doi.org/10.22323/1.369.0076>).

## Invited Talks and Papers

1. CEBAF 1992 Summer Workshop, Newport News, Virginia 1992, Plenary Talk on “Color Transparency (e,e’p) Measurements at SLAC”  
Particles and Fields Series 51, AIP Conference Proceedings No. 269, ed. F. Gross, p. 308.
2. 1993 Canadian Association of Physicists Congress, Burnaby, British Columbia (June 13-16), Invited Talk on “Search for Color Transparency in (e,e’p) at SLAC”
3. 1996 International Workshop on Lepton Polarization at High Energy Colliders, Lecce, Italy (September 26-28), Plenary talk on “The Hermes Experiment at HERA: First Results”
4. Gordon Research Conference on QCD in Nuclear Physics, Newport, Rhode Island (July 27 - August 1, 1997), Invited talk on “New Results from the HERMES Experiment”
5. Seventh International Workshop on Polarized Gas Targets and Polarized Beams, Urbana, Illinois (August 18-22, 1997), Invited Talk on “Beam Polarimetry at HERA”  
AIP Conference Proceedings No. 421, ed. R.J. Holt, M.A. Miller, p. 181.
6. 1998 Joint APS/AAPT Meeting, Columbus, Ohio (April 18 - 21, 1998), Invited talk on “Polarimeters for Polarized Electron Beams”
7. 1998 SLAC Summer Institute Topical Conference, Stanford, California (August 3-14), Plenary Talk on “Results from HERMES”  
SLAC Report 538, Proceedings of the XXVI SLAC Summer Institute on Particle Physics, ed. L. Dixon, p. 437.
8. Eighth International Symposium on Meson-Nucleon Physics and the Structure of the Nucleon, Zuoz, Switzerland (August 15-21, 1999), Invited Talk on “Recent Results from HERMES”  
 $\pi$ N Newsletter No. 15, ed. D. Drechsel, G. Höhler, W. Kluge, H. Leutwyler, B.M.K. Nefkens, H.-M. Staudenmaier, p. 209.

9. 1999 International Conference on Orbis Scientiae, Ft. Lauderdale, Florida (December 16-19, 1999), Plenary Talk on “The Mystery of Nucleon Spin”  
Proceedings of Orbis Scientiae 1999 in “Quantum Gravity, Generalized Theory of Gravitation, and Superstring Theory-Based Unification”, Kluwer Academic/Plenum Publishers, New York, ed. B.N. Kursunoglu, S.L. Mintz, A. Perlmutter, p.209.
10. Workshop on Quark-Hadron Transition in Structure and Fragmentation Functions at Jefferson Laboratory, Newport News, Virginia (April 17-18, 2000), Plenary Talk on “Fragmentation and Semi-Inclusive Results from HERMES”
11. 2001 Joint APS/JPS Meeting, Maui, HI (October 17 - 20, 2001), Talk on “Deeply Virtual Compton Scattering at HERMES”
12. Workshop on Electron Beam Polarimetry for the Electron Ion Collider at BNL, Upton, New York (November 8, 2002), Plenary Talk on “The Longitudinal Polarimeter at HERA”
13. Eighth Conference on the Intersection of Particle and Nuclear Physics (CIPANP 2003), New York, NY (May 19-24, 2003), Talk on “Nuclear Transparency in Exclusive  $\rho^0$  Production at HERMES”  
AIP Conference Proceedings No. 698, ed. Z. Parsa, p. 119.
14. Eighth Conference on the Intersection of Particle and Nuclear Physics (CIPANP 2003), New York, NY (May 19-24, 2003), Talk on “Electron Beam Polarimetry for EIC/eRHIC”  
AIP Conference Proceedings No. 698, ed. Z. Parsa, p. 797.
15. Second International Conference on Nuclear and Particle Physics with CEBAF at JLab (NAPP 2003), Dubrovnik, Croatia (May 26-31, 2003) Plenary Talk on “Flavor Separated Quark Polarizations at HERMES”  
Fizika **B13**, (2004) 315, a refereed journal of the Croatian Physical Society.
16. Workshop on Precision Electron Beam Polarimetry at Jlab, Newport News, VA (June 9-10, 2003), Plenary talk on “The Longitudinal Polarimeter at HERA”
17. Penta-Quark 2003 Workshop at JLab, Newport News, VA (November 6-8, 2003), Plenary talk on “The  $\Theta^+$  pentaquark search at HERMES”
18. Pentaquark04 Workshop at SPring-8, Japan (July 20-23, 2004), Plenary talk on “Pentaquark search at HERMES”  
Proceedings of the International Workshop “Pentaquark04”, World Scientific Publishing Co., Singapore, 2005, ed. A. Hosaka and T. Hotta, p. 66.
19. Seventh Annual Symposium on Japanese-American Frontiers of Science at the U.S. National Academy of Sciences, Irvine, CA (December 10-12, 2004), Short Plenary Talk on “Pentaquarks: A new subatomic species?”
20. Miami 2004 Conference on Elementary Particle Physics and Cosmology, Coral Gables and Key Biscayne, FL (December 15-19, 2004), Plenary talk on “Shedding Light on Dark Energy with the SuperNova/Acceleration Probe (SNAP)”
21. Pentaquark 2005 Workshop at JLab, Newport News, Virginia (October 20-22, 2005), Plenary talk on “Search for exotic Baryons at HERMES”
22. XIIth International Workshop on Polarized Sources, Targets & Polarimetry at BNL, Upton, New York (September 10-14, 2007), Summary Talk on “Precision Electron Beam Polarimetry”  
AIP Conference Proceedings No. 980, eds. A. Kponou, Y. Makdisi, and A. Zelinski, p. 407.
23. Workshop on Polarization and Energy measurements at the ILC, Zeuthen, Germany (April 9-11, 2008), Workshop Summary Talk
24. 4<sup>th</sup> Electron Ion Collider Workshop at Hampton University (May 19-23, 2008), Plenary talk on “Precision Electron and Ion Polarimetry for EIC”
25. SPIE Symposium on Astronomical Telescopes and Instrumentation: Synergies Between Ground and Space in Marseille, France (June 23-27, 2008), talk on “Count rate dependent non-linearity and pixel size variations in 1.7 micron cut-off detectors”



- Proceedings of the Society of Photo-Optical Instrumentation Engineers (SPIE) 7021, p. V210 (2008).
26. 18th International Symposium on Spin Physics Symposium (SPIN2008) at University of Virginia (October 6-11, 2008), Invited talk on “Precision Electron Beam Polarimetry” AIP Conference Proceedings No. 1149, eds. D. Crabb, D. Day, S. Liuti, X. Zheng, M. Poelker, and Y. Prok, p. 709 (2009).
  27. ESO Workshop on Detectors for Astronomy, Garching, Germany (October 12-16, 2009), talk on “Limits on Reciprocity Failure in  $1.7\mu\text{m}$  cut-off NIR astronomical detectors”
  28. Workshop on Studying the hadron structure in Drell-Yan reactions, CERN, Geneva, Switzerland (April 26-27, 2010), Plenary talk on “Future Drell-Yan fixed target experiments at Fermilab”
  29. Polarized Drell-Yan Physics Workshop, Santa Fe (October 31 - November 1, 2010), Plenary talk on “Drell-Yan Experiments at Fermilab: SeaQuest and Beyond”
  30. Transversity 2011 Workshop, Veli Lošinj, Croatia (August 29 - September 2, 2011), Plenary talk on “Drell-Yan Scattering at Fermilab: SeaQuest and Beyond” Proceedings of the International Workshop “Transversity 2011” in *Nuovo Cimento C* 35, Issue 2
  31. Light Dark Matter 2013 Workshop, Ann Arbor, Michigan (April 15-17, 2013), invited talk on “PandaX - Status and Plans”
  32. Workshop on Opportunities for Polarized Physics at Fermilab, Fermilab (May 20-22, 2013), Plenary talk on “Polarized Drell-Yan at Fermilab”
  33. XV<sup>th</sup> International Workshop on Polarized Sources, Targets, and Polarimetry (PSTP 2013) at University of Virginia (September 9 - 13, 2013), Invited talk on “Polarized Protons in the Fermilab Main Injector”  
Proceedings of Science web: <http://pos.sissa.it/cgi-bin/reader/conf.cgi?confid=182>.
  34. 9<sup>th</sup> Circum-Pan-Pacific Spin Symposium on High Energy Spin Physics, Ji’nan, China (October 28-31, 2013), Plenary Talk on “Drell-Yan Scattering at Fermilab: SeaQuest and Beyond”
  35. 2014 Mitchell Workshop on Collider and Dark Matter Physics at Texas A&M, College Station, TX, (May 12-15, 2014), Invited talk on ”Status of PandaX”
  36. APS Division of Nuclear Physics: 2014 Long-range plan Town Meeting on QCD at Temple University, Philadelphia, PA (September 13-15, 2014), Invited talk on “Polarized Drell-Yan at FNAL”
  37. 21<sup>st</sup> International Symposium on Spin Physics (SPIN2014) at Peking University, Beijing, China (October 20-24, 2014), Invited talk on “Opportunities with Polarized Hadron Beams”
  38. 10<sup>th</sup> Circum-Pan-Pacific Spin Symposium on High Energy Spin Physics (PacSpin2015) at Institute of Physics, Academia Sinica in Taipei, Taiwan (October 5-8, 2015), Plenary talk on “Opportunities with polarized protons at Fermilab”
  39. COMPASS beyond 2020 Workshop, CERN, Switzerland (March 21-22, 2016), Invited Talk on “FermiLab opportunities on polarized Drell-Yan”
  40. European Centre for Theoretical Studies Workshop on Partons Transverse Momentum Distributions at Large x, Trento, Italy (April 11-15, 2016), Invited talk on “Polarized Drell-Yan at Fermilab”
  41. 4<sup>th</sup> Workshop on the QCD Structure of the Nucleon (QCD-N’16), Palacio San Joseren, Getxo, Spain, (July 11-15, 2016), Invited Talk on “E-906 results and future fixed-target Drell Yan programs”
  42. 20<sup>th</sup> International Conference on Particle Physics and Cosmology (COSMO-16) at the University of Michigan, Ann Arbor, MI (August 8-12, 2016), Talk on “The LZ Dark Matter experiment”

43. International Conference on 3D parton distributions: path to the LHC, INFN-Frascati, Italy (November 29 - December 2, 2016), Plenary talk on “Fixed-target Drell Yan – Present & Future”
44. EPS Conference on High Energy Physics 2017, Venice, Italy (July 5-12, 2017), Talk on “The LZ Dark Matter experiment”
45. LIDINE 2017 Conference, SLAC (September 22-24, 2017), invited talk on “PTFE Reflectance for Xenon Scintillation Light”
46. INT Workshop INT-17-68W on the The Flavor Structure of Nucleon Sea, Seattle, (October 2-13, 2017), Plenary talk on “Opportunities with Fixed-Target Drell-Yan”
47. The 11<sup>th</sup> Workshop on Hadron Physics in China and Opportunities Worldwide, Nankai University, Tianjin, China (August 22-27, 2019), Plenary talk on “Fixed-target Drell Yan – Present & Future”
48. The 21<sup>st</sup> International Workshop on Neutrinos from Accelerators (NUFACT 2019), Daegu, Korea (August 26-31, 2019), invited talk on “The MUSE experiment at PSI: Status and Plans”
49. CPAD 2019 Instrumentation Frontier Workshop, Madison, WI (December 8-10, 2019), Talk on “Radon reduction in Dark Matter Detectors”
50. APS Division of Nuclear Physics, online (October 29 - November 1, 2020), Talk on “A Liquid Hydrogen Target for TPEX”
51. DARWIN/XENONNT/LZ workshop on Radon removal R&D, online (April 26, 2022), invited talk on “Radon Reduction via charcoal columns”
52. Sixth Joint DNP/JPS meeting workshop on Polarized Drell-Yan Physics at Fermilab, Maui, Hawaii (October 7-12, 2023), invited talk on “Drell-Yan program at Fermilab and beyond”
53. W. Lorenzon, “Shedding Light on Dark Matter”, 9<sup>th</sup> LCTP Spring Symposium, Ann Arbor, MI, May 2024.
54. CHIPP Winter School of Particle Physics 2025, Gstaad, Switzerland (January 19 - 24, 2025), winter school lecture on “Low Energy Physics”

### Conferences / Workshops / Symposia Organizations

1. 1998 International Conference on Orbis Scientiae, Ft. Lauderdale, FL,  
– Session organizer and Moderator on “Proton Spin Content”
2. 1999 Physics in Collision Conference, Ann Arbor, MI, June 24-26  
– Local Organizing Committee
3. Seventh Conference on the Intersection of Particle and Nuclear Physics, Quebec City, Canada, May 22-28, 2000  
– Session Organizer and Session Chair on “Spin Physics”
4. Second Workshop on Physics with an Electron-Polarized light-Ion Collider (EPIC), MIT, Cambridge, MA, September 15-16, 2000  
– Scientific Organizing Committee
5. Second Joint DNP/JPS Meeting of the APS, Maui, Hawaii, September 18-22, 2005  
– Workshop co-organizer on “Beyond  $q\bar{q}$  and  $qqq$ : Pentaquarks and more”  
– Mini-Symposium co-organizer on “Pentaquarks”
6. Workshop on Precision Electron Beam Polarimetry for the Electron Ion Collider, Ann Arbor, MI, August 23-24, 2007  
– Workshop Organizer
7. Spin Physics Symposium, Ann Arbor, MI, November 14, 2009  
– Chair of Spin Physics Symposium Organizing Committee

8. EIC14 The International Workshop on Accelerator Science and Technology for Electron-Ion Collider, Jefferson Lab, March 17-21, 2014
  - Session Organizer on “Working group for electron/positron sources, proton/ion sources and polarimetry”
9. Forth Joint DNP/JPS Meeting of the APS, Big Island, Hawaii, October 7-11, 2014
  - Workshop organizer on “Polarized Drell-Yan Physics at Fermilab”

### Seminars / Colloquia / Public

1. University of Basel, 17-Nov-1988, ”Search for  $\Delta T=2$  transitions in the electro-magnetic interaction”
2. California Institute of Technology, 19-Jan-1989, ”Search for  $\Delta T=2$  transitions in the electro-magnetic interaction”
3. University of Illinois, 19-Feb-1992, ”Color Transparency in (e,e’p)”
4. Brookhaven National Lab, 25-Feb-1992, ”Color Transparency in (e,e’p)”
5. Old Dominion University, 9-Mar-1992, ”Color Transparency in (e,e’p)”
6. CEBAF, 10-Mar-1992, ”Color Transparency in (e,e’p)”
7. Argonne National Lab, 15-Apr-1992, ”Color Transparency in (e,e’p)”
8. TRIUMF, 4-Jun-1992, ”Color Transparency in (e,e’p)”
9. University of Washington, Seattle, 30-Mar-1993, ”Color Transparency in (e,e’p)”
10. University of Illinois, 5-May-1993, ”Search for Color Transparency”
11. Kent State University, 19-Jul-1993, ”Search for Color Transparency”
12. University of Pennsylvania, 21-Sep-1993, ”Search for Color Transparency”
13. DESY, 10-Sep-1994, ”Longitudinal Polarimeter for HERA”
14. NIKHEF, 5-Jan-1995, ”Longitudinal Polarization at HERA”
15. Drexel University, 24-Feb-1995, ”Polarized Muon Capture on  $^3\text{He}$ ”
16. University of Maryland, 17-April-1995, ”Polarized Muon Capture on  $^3\text{He}$ ”
17. University of Michigan, 1-Dec-1995, “Polarized Muon Capture on  $^3\text{He}$ ”
18. University of Michigan (SPC), 8-Dec-1997, “Recent Results from HERMES”
19. University of Michigan, 5-May-1999, “Recent Results from HERMES”
20. University of Michigan, Department Colloquium, 3-Nov-1999, “The Mystery of Nucleon Spin”
21. University of Basel, 16-May-2002, “HERMES Spin Physics”
22. University of Michigan (SPC), 21-June-2002, “HERMES Spin Physics”
23. University of Michigan, 24-March-2003, “Recent Results from HERMES”
24. University of Michigan (SPC), 11-July-2003, “Pentaquarks - A new form of matter?”
25. Hong Kong University of Science and Technology, 18-Dec-2003, “Shedding Light on Dark Energy with the SuperNova/Acceleration Probe”
26. Duke University, 14-Oct-2004, “Shedding Light on Dark Energy with the SuperNova/Acceleration Probe”
27. Old Dominion University, Colloquium, 1-Mar-2005, “Shedding Light on Dark Energy with the SuperNova/Acceleration Probe”
28. Caltech, 4-Mar-2005, “Shedding Light on Dark Energy with the SuperNova/Acceleration Probe”
29. University of Michigan, Department Colloquium, 26-Oct-2005, “Pentaquarks: Do they exist?”
30. Simon Fraser University, Department Colloquium, 12-Feb-2007, “New Eyes on the Expanding Universe: The SuperNova/Acceleration Probe (SNAP)”

31. Ann Arbor District Library Public Lecture Series, Ann Arbor, MI (September 20, 2007), Public Lecture on “The Dark Side of the Universe”
32. Ann Arbor News (local newspaper), 5-Nov-2007, “The physics of a great tackle”
33. Fermilab, 17-August-2010, Joint seminar with Alan Krisch on ”Hard collisions of polarized protons: past, present & future” and “Polarized Drell-Yan at Fermilab’s Main Injector”
34. Peking University, 23-August-2010, “Exploring Nucleon Structure with Drell-Yan Scattering at Fermilab”
35. Shanghai Jiaotong University, seminar, 3-September-2010, “NIR detectors for astronomical observations”
36. William & Mary, Colloquium, 22-April-2011, “Shedding Light on Dark Energy: The Dark Energy Survey”
37. DESY, seminar, 13-June-2013, “Polarized Drell-Yan at Fermilab”
38. Peking University, 1-November-2013, “Drell-Yan Scattering at Fermilab: SeaQuest and Beyond”
39. University of Michigan, UROP seminar, , 5-Nov-2013, “Search for Dark Matter”
40. Los Alamos National Laboratory, seminar, 17-February-2014, “Polarized Drell-Yan at Fermilab”
41. University of Michigan, Society of Physics Students, 4-Nov-2014, “SeaQuest and Beyond: Studying Subatomic Physics at Fermilab”
42. Fermilab, seminar, 4-Mar-2015, “Search for Dark Matter with PandaX”
43. University of Michigan, Chi-Epsilon Honors Society, 28-Oct-2015, “Shedding Light on Dark Matter with LZ”
44. Ann Arbor Math Olympiad Club, 21-Nov-2015, “A Career in Physics”
45. University of Michigan, Donor Symposium, 30-Mar-2016, “Shedding Light on The Dark Side of the Universe with LZ”
46. SLAC KIPAC Tea seminar series, 1-Sep-2017, “PandaX-II latest results”
47. Universidad Nacional Autónoma de México, Mexico City, Mexico, 23-November-2017, Colloquium on “Shedding Light on The Dark Side of the Universe with LZ”
48. SLAC Experimental Seminar series, 26-June-2018, “The MUSE experiment: addressing the proton radius puzzle via elastic muon scattering”
49. Ann Arbor Math Olympiad Club, 20-Oct-2018, “A Career in Physics”
50. University of Hawaii Seminar series, 23-Oct-2018, “The Proton Radius Puzzle”
51. Saturday Morning Physics, 10-Nov-2018, “The Proton Radius Puzzle”
52. Peking University, seminar, 22-August-2019, “The MUSE experiment: addressing the proton radius puzzle via elastic muon scattering”
53. Fermilab, seminar, 25-Oct-2019, “Sivers Function: Status + Plans”
54. University of Michigan, HEP seminar, 8-Mar-2021, “The Asymmetry of Antimatter in the Proton”
55. University of Michigan, Society of Physics Students seminar series, 30-Mar-2023, “A physics Journey: from cosmic to nuclear scales”
56. Riken, Saitama, Japan, Colloquium, 1-May-2023, “The search for Dark Matter with the LZ experiment”
57. University of South Carolina, Colloquium, 21-September-2023, “The search for Dark Matter with the LZ experiment”
58. University of Zürich, seminar, 18-Mar-2025, ”The MUSE experiment at PSI: Status and Plans”

## Talks & Seminars by Students and Postdocs (since 2022)

1. M. Arthurs, invited talk on “Status of the LZ Experiment”, Lake Louise Winter Institute, Lake Louise, Canada, February 2022.
2. S. Lunkenheimer, ”Feasibility Studies for Measuring the Astrophysical S-Factor of the Reaction  $^{12}\text{C}(\alpha, \gamma)^{16}\text{O}$  via Electro-Disintegration at MAGIX”, APS April Meeting, New York, NY, April 2022.
3. C. Amarasinghe, “LZ Preliminary Sensitivity to Effective Field Theory Couplings”, APS April Meeting, New York, NY, April 2022.
4. Z. Yang, “The Liquid Hydrogen target for TPEX”, APS April Meeting, New York, NY, April 2022.
5. M. Arthurs, “Dimensional Reduction as a Tool for Investigating Anomalous Data”, APS April Meeting, New York, NY, April 2022.
6. S. Steinfeld, “Ultra-Low energy nuclear recoil calibration in liquid xenon using the MiX detector”, APS April Meeting, New York, NY, April 2022.
7. I. Lavruchin, “TPEX@DESY - A Two-Photon Exchange Experiment at DESY Test Beam”, APS April Meeting, New York, NY, April 2022.
8. G. Rischbieter, “Detector Modeling for a WIMP Search Using LZ Data and NEST”, APS April Meeting, New York, NY, April 2022.
9. N. Wuerfel, invited talk on “SpinQuest and Beyond”, Transversity 2022, Pavia, Italy, May 2022.
10. C. Amarasinghe, “The Underground Quest for Dark Matter”, Saturday Morning Physics, Ann Arbor, MI, April 2022.
11. C. Amarasinghe, “Application of Machine Learning to Find Anomalous Events in LZ Data”, Conference on Science at SURF 2022, South Dakota Mines, SD, May 2022.
12. D. Huang, “A proposal for direct detection of Migdal Effect using thermal neutron capture in LXe”, DARWIN/LZ Grassroots meeting, online, May 2022.
13. G. Rischbieter, “Status of the LUX-ZEPLIN Experiment”, SUSY 2022, Ioannina, Greece, June 2022.
14. I. Lavruchin, invited talk on “The SpinQuest project: Status and Perspectives”, IWHSS-2022, CERN, Switzerland, July 2022.
15. D. Huang, “Backgrounds for the first LZ WIMP search results”, CIPANP 22, Lake Buena Vista, FL, August/September 2022.
16. E. Hazelton, “SpinQuest Scaler DAQ FPGA Upgrade”, APS DNP, New Orleans, LA, October 2022.
17. H. Reid, “Path length reconstruction for MUSE”, APS DNP, New Orleans, LA, October 2022.
18. N. Wuerfel, “Nuclear Modification of J/Psi Production in Fermilab E906 SeaQuest Data”, APS DNP, New Orleans, LA, October 2022.
19. C. Amarasinghe, “Simulation results for a low energy NR yields measurement in liquid xenon using the MiX detector”, LIDINE, Warsaw, Poland, September 2022.
20. I. Lavruchin, invited talk on “Status of MUSE”, APS Topical GHP-2023, Minneapolis, MN, April 2023.
21. D. Huang, “First Results from the LZ Dark Matter Experiment”, WIN2023, Zhuhai, China, July 2023.
22. G. Rischbieter, “The TESSERACT Project: Sub-GeV Dark Matter Direct Detection”, European Physical Society Conference on High Energy Physics (EPS 2023), Hamburg, Germany, August 2023.

23. G. Rischbieter, “Results and Status of the LUX-ZEPLIN Experiment”, European Physical Society Conference on High Energy Physics (EPS 2023), Hamburg, Germany, August 2023.
24. H. Reid, “Luminosity Determination at MUSE”, APS DNP, Hawaii, HI, November 2023.
25. I. Lavrukhin, “Status of MUSE Experiment Analysis”, APS DNP, Hawaii, HI, November 2023.
26. I. Lavrukhin, “SpinQuest/E1039 Status”, pre-meeting workshop of APS/JPS DNP, Hawaii, HI, November 2023.
27. E. Hazelton, “SpinQuest Scaler DAQ FPGA Upgrade”, poster at APS DNP, Hawaii, HI, November 2023.
28. G. Rischbieter, invited talk on “New Results from LUX-ZEPLIN: Beyond Spin-Independent WIMPs”, Rencontres de Moriond, ElectroWeak 2024. La Thuile, Italy, March 2024.
29. Ruide Xu, “A tracking Algorithm for Straw tube Trackers Based on a Cellular Automaton”, APS April Meeting, Sacramento, CA, April 2024.
30. I. Lavrukhin, “Probing the Proton’s Inner Structure”, seminar at University of South Carolina, Columbia, SC USA, February 2024.
31. I. Lavrukhin, invited talk on “SpinQuest/E1039 Report”, 57th Annual Users Meeting, Fermi National Accelerator Laboratory, Batavia, IL, July 2024.
32. H. Reid, plenary talk on “Status of the MUon Scattering Experiment (MUSE) at PSI”, BEACH 2024, Charleston, SC, June 2024.
33. I. Lavrukhin, “Exploring Hadron Dynamics with the Polarized Drell-Yan Process at Fermilab: Current Progress and Future Directions”, CFNS Seminar Series, Stony Brook University and Brookhaven National Laboratory, Stony Brook, NY, October 2024.

### International/Professional Memberships, Services

2025 - present	Member, Publication Board, LZ collaboration
2022 - 2023	Member, AMBER Spokesperson Search committee
2021	Member, DOE/SC Status Review of the MOLLER Project (TJNAF)
2021	Member, DOE Dark Matter New Initiative Status Review Panel
2021 - 2023	Member, AMBER PubCom committee
2021	Member, AMBER MOU Drafting committee
2021	Member, SoLID Spectrometer Director’s Review (TJNAF)
2020 - present	Member, Steering Committee, SpinQuest collaboration
2020	Member, DOE/SC CD-1 Review of the MOLLER Project (TJNAF)
2020	Member, DOE Cosmic Frontier Grants Comparative Review Panel
2019 - 2020	Member, COMPASS++/AMBER Temporary Steering Board and Bylaw Drafting committee
2019	Member, DOE Early Career Program Review committee
2019 - present	Chair, Speakers Board, SpinQuest collaboration
2019	Reviewer, Subatomic Physics Proposals, BSF
2018 - 2020	Member, Speakers Board, LZ collaboration
2018	Member, International Advisory Committee for XeSAT2018 conference in Japan
2017 - 2018	Member, Task Force for LZ Radon Distillation
2017	Chair, Task Force for LZ Service Work
2016	Member, NSF Nuclear Physics Proposal Review Panel
2016	Chair, Technical Design Review for LZ (SLAC)
2013 - 2016	Member, Jefferson Lab Program Advisory Committee

2009 - 2020 Reviewer, Subatomic Physics Proposals, NSERC  
 2008 - 2010 Member, Natural Sciences and Engineering Research Council, NSERC, of Canada  
 2008 - present Member, Michigan (now Leinweber) Center for Theoretical Physics  
 2008 Referee, engineering design report for beam polarimetry at the ILC  
 2008 Member, NSF Nuclear Physics Proposal Review Panel  
 2007 - 2012 Chair, Nominating Committee (HERMES experiment)  
 2007 - 2010 Chair, Task Force on Precision Electron Polarimetry (EIC Collaboration)  
 2005 - 2012 Member, HERMES editorial board (HERMES experiment)  
 2005 - present Reviewer, Nuclear Science Proposals, Department of Energy  
 2001 - 2007 Member, HERA Polarization Steering Board (DESY laboratory)  
 2005 - 2006 Reviewer, W.H. Freeman & Company, Textbooks  
 2001 - 2006 Consultant for Ann Arbor Hands On Museum  
 2000 - 2018 Reviewer, Netherlands Organization for Scientific Research, NWO, Proposals  
 1999 - 2000 Reviewer, Prentice Hall, Textbooks  
 1998 - present Referee, Physical Review and Physical Review Letters  
 1997 - present Reviewer, Intermediate Energy Nuclear Science Proposals, National Science Foundation  
 1989 - present Member, American Physical Society  
 1986 - 1989 Member, Swiss Physical Society

## Internal Service

### Departmental:

2023 - 2024 Faculty Search Committee, member  
 2022 - 2024 PI, DOE HEP Cosmic Frontier Umbrella Grant  
 2022 - 2024 Faculty Awards committee, member  
 2022 Promotion Committee, chair (Björn Penning)  
 2021 Distinguished Faculty Achievement Award Nomination committee, co-chair (Tim Chupp)  
 2020 Sloan Research Fellow Nomination committee, chair (Björn Penning)  
 2020 - 2024 Undergraduate Awards (4 awards) committee, chair  
 2020 - 2024 Honors Senior Thesis and Williams Award Committee, chair  
 2019 - 2022 Department Executive Committee, member  
 2019 - 2021 Editorial Advisory Board / WWW page committee, chair  
 2019 Promotion Committee, chair (Christine Aidala)  
 2019 Honors Senior Thesis Reader and Williams Award committee, chair  
 2019 APS Mentoring Award Nomination committee, chair (Tim Chupp)  
 2019 Distinguished Faculty Achievement Award Nomination committee, co-chair (Tim Chupp)  
 2018 - 2019 Faculty Search, co-chair  
 2018 - 2019 Astro & HEP Seminar Committee, co-chair  
 2018 LS&A Collegiate Chair Nomination Committee, co-chair (Tim Chupp)  
 2018 Promotion Committee, member (Vanessa Shi)  
 2018 Promotion decision making committee, member (David Lubensky)  
 2018 - 2020 Introductory Physics Committee, member  
 2016 - 2017 Graduate Admissions and Fellowships, member  
 2015 - 2020 Junior Faculty Mentor for Joshua Spitz  
 2015 - 2016 Graduate Admissions and Fellowships, member  
 2014 Promotion Committee, chair (Christine Aidala)

2014 - 2015 Graduate Admissions and Fellowships, member  
 2014 Third year review committee, member (Christine Aidala)  
 2014 Promotion Committee, member (Aaron Pierce)  
 2013 - 2014 Graduate Admissions and Fellowships, member  
 2012 - 2016 Junior Faculty Mentor for Christine Aidala  
 2012 - 2013 Graduate Admissions and Fellowships, member  
 2012 - 2013 Introductory Physics Committee, member  
 2012 Promotion Committee, member (Michael Schubnell)  
 2011 - 2012 Graduate Admissions and Fellowships, member  
 2011 - 2012 Introductory Physics Committee, member  
 2011 - 2012 Examiner for Oral English Test (formerly ELI Test)  
 2011 Promotion Committee, member (Jim Liu)  
 2011 Williams Award and Honors Senior Theses Reader, chair  
 2011 Weidenbeck Award Committee, chair  
 2010 - 2011 FRIB Science Cluster Hire Proposal Committee, chair  
 2010 - 2011 Graduate Admissions and Fellowships, member  
 2010 Promotion Committee, member (Dan Levin)  
 2010 Weidenbeck Award Committee, chair  
 2009 - 2010 FRIB Science Cluster Hire Proposal Committee, chair  
 2009 - 2010 Graduate Admissions and Fellowships, member  
 2009 Spin Physics Symposium Committee, chair  
 2009 Weidenbeck Award Committee, chair  
 2013 - 2014 Introductory Physics Committee, member  
 2008 - 2009 Department Executive Committee, member  
 2008 - 2009 AAPT Teaching Assistant Award Committee, co-chair  
 2008 Promotion Committee, member (Shawn McKee)  
 2008 Weidenbeck Award Committee, chair  
 2007 - 2010 Introductory Physics Committee, member  
 2007 - 2008 Computing Committee, chair  
 2006 - 2007 Computing Committee, chair  
 2006 - 2007 Saturday Morning Physics Committee, co-chair  
 2006 Promotion Committee, chair (David Reis)  
 2005 - 2006 Graduate Admissions and Fellowships, member  
 2005 - 2006 Editorial Advisory Board and Web Page, member  
 2005 Graduate student mini-colloquium, fall term  
 2004 Graduate student mini-colloquium, fall term  
 2004 Leff Scholarship Committee, Chair, winter term  
 2003 - 2004 Instructional Technology Oversight Team  
 2002 Williams Award Prize Committee, Chair  
 2001 - 2002 HEP Spin Seminar  
 2001 - 2002 Editorial Advisory Board / WWW Page, member  
 2001 Graduate student mini-colloquium, fall term  
 2001 Terwilliger Prize Committee, Chair  
 2001 Graduate student mini-colloquium, winter term  
 2000 - 2001 HEP Spin Seminar  
 2000 Terwilliger Prize Committee, Chair  
 1999 - 2000 HEP Spin Seminar  
 1999 - 2000 Computing Committee, Member



1998 - 1999 Subcommittee for Research Computing, Chair  
 Society of Physics Students (SPS) advisor  
 1997 Graduate student mini-colloquium

College:

2017 - 2020 NextProf initiative, mentor

University:

2016 - 2017 Concur ExpenseIt Pilot Committee, member  
 2014 - 2015 Concur Travel & Expense Focus Group Committee, member  
 2012 Promotion Committee, member (Michael Hartman, NERS, CoE)  
 2007 - 2009 Senate Assembly, alternate member

**Faculty Mentees**

Assistant Professor: Scott Haselschwardt 9/2024 – present  
 Assistant Professor: Björn Penning 9/2020 – 7/2023  
 Assistant Professor: Joshua Spitz 9/2015 – 7/2021  
 Assistant Professor: Christine Aidala 9/2012 – 7/2016

**Research Scientists**

Assistant Research Scientist Emeritus: Richard Raymond 7/2008 – present  
 Associate Research Scientist: Vladimir Luppov 7/2003 – 9/2003  
 Assistant Research Scientist: Alexander Borissov 1/2001 – 10/2002

**Postdoctoral Associates**

1. Haley Reid	6/2024	–	present
2. Greg Rischbieter <sup>  </sup>	9/2023	–	present
3. Ievgen Lavrukhin <sup>‡</sup> <sup>b</sup>	2/2020	–	12/2024
4. Stefan Lunkenheimer	1/2022	–	12/2023
5. Dongqing Huang <sup>†</sup>	11/2019	–	4/2023
6. Marshall Scott	9/2020	–	12/2020
7. Daniel Morton	7/2019	–	9/2019
8. Minjung Kim <sup>‡</sup>	3/2019	–	3/2021
9. Priyashree Roy <sup>*</sup>	11/2016	–	5/2019
10. Takahiro Sawada	10/2016	–	3/2018
11. Andrew Chen	3/2015	–	6/2016
12. Kirill Pushkin	7/2013	–	9/2018
13. Maria Leonova	7/2011	–	12/2011
14. Chiranjib Dutta	6/2010	–	7/2012
15. Lara DeNardo	1/2009	–	12/2009
16. Avetik Airapetian	12/2002	–	4/2008
17. Alexander Borissov	1/1999	–	10/2002
18. Andreas Most	10/1995	–	11/1998
19. Michael Spengos	9/1994	–	12/1995

<sup>||</sup> convener for the LZ Calibration Analysis Group (2023 – 2024)

<sup>‡</sup> deputy spokesperson MUSE experiment (2020 – 2024)

<sup>b</sup> recipient of 2021 URA Visiting Fellow Award

<sup>†</sup> convener for the LZ Background Working Group (2020 – 2023)

<sup>‡</sup> recipient of 2020 Fermilab Intensity Frontier Fellow Award

\* winner of 2016 JLab Thesis Prize

### Dissertation Committees (current)

<u>Name</u>	<u>Candidacy</u>	<u>Comm. Chair</u>	<u>Duration</u>
1. Sky Shi		X	Sep 2023 – present
2. Devon Loomis			Aug 2023 – present
3. Harvey Birch	F22		Sep 2022 – present
4. Michael Williams	S21	X	Aug 2021 – June 2024
5. Desmond Shangase	S20		Aug 2020 – present
6. Dillon Fitzgerald	W20		Nov 2019 – present
7. Haley Reid	F20	X	Jun 2019 – June 2024
8. Eva Krägeloh	S19		Jul 2019 – present

### Dissertation Committees (past)

<u>Name</u> UMich:	<u>Candidacy</u>	<u>Degree</u>	<u>Comm. Chair</u>	<u>Occupation</u>
2. Haley Reid	F20	S24	X	Postdoc at PSI
3. Noah Wuerfel <sup>♣</sup> <sup>◇</sup>	W19	S23	X	Postdoc at MIT
4. Chamindu Amarasinghe	F19	S23	X	Postdoc at UCSB
5. Luke Korley	S21	F22		unknown
6. Youjia Wu	-	F22		Bosch Industries in China
7. Maris Arthurs <sup>‡</sup> , <sup>§</sup>	S18	S22	X	Postdoc at SLAC
8. Kristofer Ogren	S20	F21		Postdoc at Los Alamos
9. Jordan Roth	F18	-		deceased
10. Marshall Scott	S17	S20	X	Postdoc at GW
11. Catherine Ayuso	W17	W20		Postdoc at MSU
12. Alec Tewsley-Booth	S15	F19		Postdoc at U-M
13. Daniel Morton <sup>‡</sup>	S15	S19	X	Data Scientist Sift5.io
14. Midhat Farooq	F15	W19		Outreach Coordinator NSF
15. Taylor Baildon	-	-		failed candidacy
16. Natasha Sachdeva		F18		Postdoc LANL
17. Noah Steinberg <sup>§</sup>	F17		X	Postdoc at Fermilab
18. Matthew Marcath	S16	S18		staff at LANL
19. Joe Osborn	F14	S18		Postdoc at U-M
20. Bryan Ramson	S13	F17		Postdoc at FNAL
21. Pengwei Xie		S17		External reviewer for SJTU
22. Skyler Degenkolb	S12	F16		Postdoc at JILA
23. Scott Stephenson <sup>#</sup>	S12	F14	X	CEO DeepGram.com
24. Zhongming (Franklin) Qu	S12	-	X	Software Expert at Huawei (Beijing)
25. Matthew Bales	F10	W14		postdoc at NIST
26. Tomasz Biesiadzinski	S09	S13		research scientist at SLAC
27. Cheng Peng		W12		unknown
28. Stephen Gliske <sup>‡</sup>	W08	S11	X	Assist. Prof. in Neurosurgery (UNL)
29. Eric Tardiff	F04	S09		unknown

30. Monisha Sharma	F05	S08		Sen Product Engin. Manager (TDK)
31. Wouter Deconinck †	F04	W08	X	Associate Prof. (UMANITOBA)
32. Sarah Nuss-Warren	F04	-		R&D Manager (Savant Group)
33. Carol Scarlett *	W01	S02	X	Associate Prof. (Florida A&M U)
34. Svetlana Gladychева		W00		Assistant VP for Research (Duke U)
35. Todd Smith		F97		Assoc. Prof. (U Dayton)
36. Sergey Rudnitsky	F95	S97	X	Chicago Mercantile Exchange
37. Douglas A. Smith		F95		unknown
38. Farrukh A. Azfar		F95		unknown
39. Ming-Hsu Kao		F95		unknown
40. Doug Koltenuk	F95			unknown

♣ recipient of 2020 URA Visiting Scholar Award

◇ recipient of 2021 DOE SCGSR Award

§ recipient of Rackham Merit fellowships from 2016-2021

‡ recipient of 2017 DNP Travel and Registration Award

§ recipient of 2017 the Physics Department Barnett Award

‡ recipient of 2014 Helmut Baer Fellowship

‡ recipient of 2013 Rackham Centennial Fellowship

‡ recipient of 2007 DNP Travel and Registration Award

† winner of Sokol Award, Cornwell Prize, and Distinguished Dissertation Award

\* recipient of Rackham, Rackham Merit, and Sloan fellowships from 1996-1998

### Masters, Senior and Honors Thesis Committees (Physics)

<u>Name</u>	<u>Masters</u>	<u>Senior Thesis</u>	<u>Honors Thesis</u>	<u>Comm. Chair</u>
1. Ethan Hazelton §			W24	X
2. Al Kucich		W24		X
3. Zhuoheng Yang			W23	X
4. Michael Reh			W19	X
5. Evan Chang			W19	X
6. Yuhan Wang			W18	X
7. Callum Aldred		W17		X
8. Jonathan Haefner ‡			W16	X
9. Noah Shutty ‡			W15	X
10. Robert Newman			F09	X
11. Anastasia Karabina		W08		X
12. Nathaniel Barron †			F04	X
13. Michael Borysow *		W04		X
14. Justin J. Schnettler		W00		
15. Sergey Rudnitsky (UPenn)	F95			X

§ winner of 2024 Williams Thesis Award

‡ recipient of 2015 Goldwater Scholarship  
and recipient of 2016 LSA Jerome and Isabella Karle Physical Sciences Award

‡ recipient of 2014 Otho Lyle Tiffany & Mary Lois Tiffany Fellowship  
and recipient of 2015 LSA Jerome and Isabella Karle Physical Sciences Award

† winner of 2006 Franco Nori Prize

\* winner of 2004 Williams Thesis Award

## Undergraduates Supervised in Research

<u>Name</u>	<u>Duration</u>
1. William Szegda	Sep 24 - present
2. Peter Mourad	Aug 24 - present
3. Andrew Kiesling	Sep 23 - present
4. Andrew Yang	Oct 23 - Nov 24
5. Jessica Brandt <sup>+</sup>	May 23 - Oct 24
6. Ruide Xu <sup>◇</sup>	Apr 23 - Oct 24
7. Al Kucich <sup>  </sup>	Mar 22 - Jul 24
8. Ethan Hazelton <sup>b</sup>	Jan 22 - Apr 24
9. Samara Steinfeld <sup>§</sup>	May 21 - Jul 24
10. Zhuoheng Yang <sup>‡</sup>	Jan 21 - Apr 23
11. Ilyas Adnane	Aug 20 - Apr 23
12. Ruben Coronel	Feb 20 - Aug 22
13. Yi Liu	Nov 19 - Jun 22
14. Zoe Wong	May 21 - Dec 21
15. Lorenz Hoernel	Jun 21 - Aug 21
16. Matthew Dimond	Feb 19 - May 20
17. Ryan Hennessey	Sep 18 - Apr 19
18. Evan Chang	May 18 - May 19
19. Sabrina Corsetti <sup>†</sup>	Dec 17 - Jan 19
20. Luc LePottier <sup>#</sup>	Dec 16 - Jan 19
21. Michael Reh	Sep 16 - Jul 19
22. Minjie Lei	Sep 16 - Apr 18
23. Yuhan Wang	Jan 16 - Apr 18
24. John Schaefer	Sep 16 - Apr 18
25. Erick Rossi De La Fuente	Sep 16 - Aug 17
26. Divyanish Saini	Sep 16 - Apr 17
27. Dhayaa Anbajagane	Sep 16 - Apr 17
28. Matthew Okunawo	Jan 16 - Aug 16
29. Aaron Sander(UROP)	Sep 15 - Apr 16
30. Callum Aldred <sup>‡</sup>	May 14 - Mar 17
31. Jonathan Haefner	Aug 13 - May 16
32. Elizabeth Batista	May 15 - Dec 15
33. Noah Shutty	Oct 13 - Jul 15
34. Rebecca Peterson-Hall	Sep 14 - Dec 14
35. Shangnan Zhou	Sep 14 - Dec 14
36. Yugeng He	Apr 13 - Aug 13
37. Elliot MacNeille	Nov 12 - Jan 13
38. Zachary Jackson(UROP)	Sep 12 - Apr 13
39. Mykola Murskyj	May 12 - Apr 13
40. Andrew Smith	May 11 - Dec 12
41. Joseph Hendrickson	Sep 11 - Apr 12
42. Khalid Jawed	Jan 11 - Apr 12

43. Mike Howe	Jan 11 - Aug 11
44. Josh Larson	Jan 11 - Apr 11
45. Michael Stewart	Sep 09 - Apr 11
46. Samuel Cohen	May 09 - Aug 10
47. Nicholas Ledezma (UROP)	Oct 09 - Apr 10
48. Jasim Khan (UROP)	Oct 09 - Dec 09
49. Robert Newman	Apr 08 - Dec 09
50. Zimu Li	Sep 08 - Aug 09
51. Celia Cunningham	Sep 07 - Apr 08
52. Celia Cunningham	Sep 08 - Aug 09
53. Brian Ball*	May 07 - Aug 09
54. Tim Raben	Apr 08 - Aug 08
55. Anastasia Karabina (REU)	May 06 - Jun 08
56. Cesar Palma (REU)	Mar 07 - Aug 07
57. Dylan Moreland (REU)	May 05 - Aug 05
58. Nathaniel Barron (REU)	Apr 03 - May 05
59. Michael Borysow (REU)	Apr 02 - Apr 04
60. Joseph A. Paul (REU)	Apr 03 - Aug 03
61. Joseph Raisenen	Sep 01 - Apr 02
62. Justin J. Schnettler	Jan 01 - Jul 01
63. Justin J. Schnettler	Sep 99 - Apr 00
64. Anand Rajagopalan	Sep 98 - Dec 99

+ 2024 (Boston) APS DNP CEU Lodging and Registration Award

◇ recipient of 2022 Tiffany Fellowship, and of 2024 Patrick Dahlin Memorial Award

|| recipient of 2023 Patrick Dahlin Memorial Award, and of 2024 Tiffany Fellowshi

♭ recipient of 2022 (New Orleans) APS DNP CEU Lodging and Registration Award  
and of 2023 (Hawaii) APS DNP CEU Lodging and Registration Award  
and of 2023 Tiffany Fellowship

§ recipient of 2022 Patrick Dahlin Memorial Award  
and of 2023 Tiffany Fellowship, and of 2024 Cornwell Prize

♮ recipient of 2019 DNP CEU Registration Award

† recipient of 2019 Bodine Scholarship, 2019 Dahlin Award, 2020 Goldwater Award

‡ recipient of 2017 DNP CEU Travel Award

‡ recipient of 2015 DNP CEU Travel and Registration Award

\* recipient of 2009 Wiley Book Award

## Other Teaching Information

F-97	started a new course for introduction to quantum mechanics, 390 LEC
F-00	proposed a new course for honors students, 360 LEC
S-08	introduced 3 new labs for the Mechanics Intro Labs, 127/141/161
S-09	introduced 3 new labs for the Mechanics Intro Labs, 127/141/161
W-14	introduced 2 new labs for the Mechanics Intro Labs, 141/161
F-14	modified 6 labs in Phys 161 to take advantage of "inertial measurement units"
W-15	introduced 1 new lab for the Mechanics Intro Labs, 136
W-13	introduced 3 new (VPython based) labs for the Mechanics Intro Labs, 141
F-16	introduced 1 new (VPython based) lab for the Mechanics Intro Labs, 141

F-17	introduced 1 new (VPython based) lab for the Mechanics Intro Labs, 141
F-18 – W-19	started introduction of VPython for all 11 Mechanics Intro Labs, 141 (w/ Tom Finzell)
F-19 – W-20	rewrote all 241 labs using Jupiter Notebook, plus modify format to better align with 141 labs (w/ Eric Gonzalez (Lead GSI))
F-19 – F-20	introduced Tracker into all 11 Mechanics Intro Labs, 141 (w/ DIALUP team)
F-20 – W-21	converted all labs to be compatible with remote instruction
W-22	introduced 1 new lab for the E&M Intro Labs (Light Polarization)

## Teaching Assignments

F-96	140 DISC (3)	/	W-97	research leave
F-97	390 LEC	/	W-98	research leave
F-98	390 LEC	/	W-99	106 LEC
F-99	106 LEC	/	W-00	390 LEC
F-00	340 LEC	/	W-01	106 LEC
F-01	106 LEC	/	W-02	260 LEC
F-02	duty off campus	/	W-03	sabbatical leave
F-03	390 LEC	/	W-04	125 LEC
F-04	390 LEC & 125 DISC (3) 501 Mini-Coll	/	W-05	research leave
F-05	106 LEC & 501 Mini-Coll	/	W-06	390 LEC
F-06	106 LEC	/	W-07	390 LEC
F-07	127/141/161 LAB coordination 161 LEC	/	W-08	127/141/161 LAB coordination 161 LEC
F-08	127/141/161 LAB coordination 161 LEC	/	W-09	127/141/161 LAB coordination 161 LEC
F-09	127/141/161 LAB coordination 161 LEC	/	W-10	127/141/161 LAB coordination 161 LEC
F-10	sabbatical leave (1 <sup>st</sup> half)	/	W-11	136/141/161 LAB coordination 161 LEC
F-11	sabbatical leave (2 <sup>nd</sup> half)	/	W-12	136/141 LAB coordination 161 LEC
F-12	medical leave	/	W-13	240 LEC / medical leave
F-13	136/141/161 LAB coordination 161 LEC	/	W-14	136/141/161 LAB coordination 161 LEC
F-14	136/141/161 LAB coordination 161 LEC	/	W-15	136/141/161 LAB coordination 161 LEC
F-15	136/141/161 LAB coordination 161 LEC	/	W-16	136/141/161 LAB coordination 161 LEC
F-16	136/141/161 LAB coordination 161 LEC	/	W-17	136/141/161 LAB coordination 161 LEC
F-17	sabbatical leave (SLAC)	/	W-18	sabbatical leave (SLAC)
F-18	136/141/161 LAB coordination 161 LEC	/	W-19	136/141/161 LAB coordination 161 LEC
F-19	141/241/161/261 LAB coordination	/	W-20	141/241/161/261 LAB coordination

F-20	161 LEC 141/241/161/261 LAB coordination 161 LEC	/ W-21	261 LEC 141/241/161/261 LAB coordination 161 LEC
F-21	141/241/161/261 LAB coordination 161 LEC	/ W-22	141/241/161/261 LAB coordination 161 LEC
F-22	141/241/161/261 LAB coordination 161 LEC	/ W-23	141/241/161/261 LAB coordination 161 LEC
F-23	141/241/161/261 LAB coordination 161 LEC	/ W-24	141/241/161/261 LAB coordination 161 LEC
F-24	sabbatical leave (PSI / UZH)	/ W-25	sabbatical leave (UZH)