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Education

1992	Ph.D., Physics, University of Chicago Dissertation: "Search for $W' \to e\nu$ and $W' \to \mu\nu$ in $p\bar{p}$ Collisions at $\sqrt{s} = 1.8$ TeV" Advisor: Melvyn Shochet
1987	Master of Advanced Study in Mathematics, Cambridge University, England
1986	B.A. *summa cum laude*, Physics, Carleton College

Professional Experience

2025-	Dean, College of Arts and Sciences, Case Western Reserve University
2025-	Professor of Physics, Case Western Reserve University
2025-	Professor Emeritus of Physics and Astronomy, University of Michigan
2024-25	Chair, Michigan Society of Fellows
2019-2024	Chair, Department of Physics, University of Michigan
2016-2025	Professor of Astronomy, University of Michigan
2016-19	Associate Chair for Undergraduate Education, Department of Physics
2009-12	Executive Committee, College of Literature, Science, and the Arts
2008-2025	Professor of Physics, University of Michigan
2008-09	Associate Chair for Research and Facilities, Department of Physics
2007-2025	Arthur F. Thurnau Professor, University of Michigan
2002-08	Associate Professor of Physics, University of Michigan
2004	Guest Scientist, Lawrence Berkeley National Laboratory
2004	Visiting Scientist, Laboratoire d'Astrophysique de Marseille
1998-2002	Assistant Professor of Physics, University of Michigan
1998-99	Visiting Assistant Professor, Department of Physics and Astronomy, Johns Hopkins University
1996-98	Assistant Professor, Department of Physics and Astronomy, Johns Hopkins University
1994	Lecturer in Physics, University of Michigan
1992-95	Research Fellow, Department of Physics, University of Michigan
1990-92	Research Assistant, Department of Physics, University of Chicago

Awards and Honors

2024	Asteroid 208117 Davidgerdes named by the International Astronomical Union
2021-25	Senior Fellow, Michigan Society of Fellows
2015	Fellow of the American Physical Society
2012	Provost's Teaching Innovation Prize (with T. McKay, A. Evrard)
2007	Arthur F. Thurnau Professorship (for "outstanding contributions to undergraduate education")
2006	University Undergraduate Teaching Award
2005-07	Honors Faculty Fellow
2003	Excellence in Education Award, College of Literature, Science, and the Arts
1997-2003	CAREER Award, National Science Foundation
1996-98	Outstanding Junior Investigator Award, U.S. Department of Energy
1987-91	National Science Foundation Graduate Research Fellowship

1987	General Electric Foundation Graduate Fellowship
1986-87	Winston Churchill Foundation Scholarship (to Cambridge University, England)

Sponsored Research

2024-27	Faster, Better, DEEPer: Discovery and Study of the Faintest Kuiper Belt Objects using Novel Computational Tools (PI), NSF Astronomy and Astrophysics, $597,879
2023-25	Citizen Science for 2024: The Dynamic Eclipse Broadcast Initiative (co-I), NASA Heliophysics Citizen Science Investigations, $314k, $88k to UM
2022-24	New Horizons Kuiper Extended Mission 2: Beyond the Kuiper Belt (PI), Southwest Research Institute, $75k
2022-23	Project Hail Mary: A Ten Trillion Yard Touchdown Pass (PI), Southwest Research Institute, $118k
2022-23	James Webb Space Telescope: The First Near-IR Spectroscopic Survey of Neptune Trojans (PI), Space Telescope Science Institute, $190,104
2020-2023	DEEP Drilling into the Kuiper Belt: The Deep Ecliptic Exploration Project (PI), NSF Astronomy, $428k
2020-23	Search for New Horizons Distant KBO Targets with DECam (PI) Southwest Research Institute, $91k
2020-23	The Deep Ecliptic Exploration Project (DEEP): An NOAO Survey Program to explore the faint outer Solar System (PI), NASA Solar System Observations, $258k
2017-20	Search and Discovery in the trans-Neptunian Solar System using the Dark Energy Survey (PI, co-I Fred Adams), NASA Solar System Observations NNX17AF21G, $474k
2015-18	Collaborative Research: Characterizing the Trans-Neptunian Solar System with the Dark Energy Survey (PI, co-I Fred Adams), NSF Astronomy, $95,940
2015-16	High Energy Physics, Task I: Dark Energy (Co-PI, with G. Tarlé), $510k
2014-15	High Energy Physics, Task I: Dark Energy (Co-PI, with G. Tarlé; co-I's G. Evrard and T. McKay). U.S. Department of Energy, $475,000
2013-14	High Energy Physics, Task I: Dark Energy (Co-PI, with G. Tarlé; co-I's G. Evrard and T. McKay). U.S. Department of Energy, $450,000
2012-13	High Energy Physics, Task I: Dark Energy (Co-PI, with G. Tarlé; co-I's G. Evrard and T. McKay). U.S. Department of Energy, $445,000
2011-12	High Energy Physics, Task I: Dark Energy (Co-PI, with G. Tarlé; co-I's G. Evrard and T. McKay). U.S. Department of Energy, $425,000 (11-months)
2010-11	High Energy Physics, Task I: Dark Energy (Co-PI, with G. Tarlé; co-I's W. Lorenzon and T. McKay): Bridge Funding, U.S. Department of Energy, $175,000.
2009-10	High Energy Physics, Task I: Dark Energy (Co-Investigator, with G. Tarlé, W. Lorenzon, and T. McKay), U.S. Department of Energy, $485,000
2010-11	Whitaker Stage I Award: Institutionalizing Assessment as Part of Introductory Course Reform in Physics(with T. McKay, G. Evrard), University of Michigan, $15,000.
2009-10	DECam Fermilab funding for research and development (PI), Fermilab, $45,025.
2009-10	High Energy Physics, Task I: Dark Energy (Co-Investigator, with G. Tarlé, W. Lorenzon, and T. McKay), U.S. Department of Energy, $443,000 + $40,000 supplement
2008-09	High Energy Physics, Task I: Dark Energy (Co-Investigator, with G. Tarlé and T. McKay), U.S. Department of Energy, $349,000
2007-08	High Energy Physics, Task I: Dark Energy (Co-Investigator, with G. Tarlé and T. McKay), U.S. Department of Energy, $366,000
2006-07	High Energy Physics, Task C: Hadron Collider Physics at CDF (Co-Investigator, with D. Amidei and M. Campbell), U.S. Department of Energy, $536,000
2006-07	Whittaker Stage II Award: Renewing the Introductory Physics Labs: Aligning The Curriculum and Improving Student Understanding, University of Michigan (Co-Investigator, with T. McKay, J. Wells, A. Tomasch), University of Michigan, $15,000
2006-07	High Energy Physics, Task I: Dark Energy (Co-Investigator, with G. Tarlé and T. McKay), U.S. Department of Energy, $411,000

2006-07	High Energy Physics, Task C: Hadron Collider Physics at CDF (Co-Investigator, with D. Amidei and M. Campbell), U.S. Department of Energy, $537,000
2005-06	High Energy Physics, Task I: Dark Energy (Co-Investigator, with G. Tarlé and T. McKay), U.S. Department of Energy, $345,000
2005-06	High Energy Physics, Task C: Hadron Collider Physics at CDF (Co-Investigator, with D. Amidei and M. Campbell), U.S. Department of Energy, $685,000
2004	Fall Research Leave: SuperNova/Acceleration Probe, Lawrence Berkeley National Laboratory, $31,627
2004-05	High Energy Physics, Task I: SuperNova/Acceleration Probe (Co-Investigator, with G. Tarlé and T. McKay), U.S. Department of Energy, $561,207
2004-05	High Energy Physics, Task C: Hadron Collider Physics at CDF (Co-Investigator, with D. Amidei and M. Campbell), U.S. Department of Energy, $740,000
2003-04	High Energy Physics, Task C: Hadron Collider Physics at CDF (Co-Investigator, with D. Amidei, M. Campbell, and J. Chapman), U.S. Department of Energy, $825,000
2002-03	High Energy Physics, Task C: Hadron Collider Physics at CDF (Co-Investigator, with D. Amidei, M. Campbell, and J. Chapman), U.S. Department of Energy, $800,000
2001-02	High Energy Physics, Task C: Hadron Collider Physics at CDF (Co-Investigator, with D. Amidei, M. Campbell, and J. Chapman), U.S. Department of Energy, $834,500
2000-01	High Energy Physics, Task C: Hadron Collider Physics at CDF (Co-Investigator, with D. Amidei, M. Campbell, and J. Chapman), U.S. Department of Energy, $810,000
2000-01	Linear Collider Simulation and Physics Studies (Principal Investigator), Stanford Linear Accelerator Center, $35,075
1999-2000	High Energy Physics, Task C: Hadron Collider Physics at CDF (Co-Investigator, with D. Amidei, M. Campbell, J. Chapman), U.S. Department of Energy, $825,000
1999	Construction of CDF Central Outer Tracker Mezzanine Cards (Principal Investigator), Fermi National Accelerator Laboratory, $143,554
1998-99	High Energy Physics, Task C: Hadron Collider Physics at CDF (Co-Investigator, with D. Amidei, M. Campbell, and J. Chapman), U.S. Department of Energy, $731,000
1997-98	Construction of CDF Central Outer Tracker High Voltage Fs (Principal Investigator), Fermi National Accelerator Laboratory, $188,594
1997-2002	CAREER Award: Studies in Hadron Collider Physics (Principal Investigator), National Science Foundation, $360,000
1996-98	Outstanding Junior Investigator Award: Top Quark Physics with an Upgraded CDF Tracking System, U.S. Department of Energy, $240,000
1998	Studies in Elementary Particle Physics (Co-Investigator, with B. Barnett), NSF, $365,000
1997	Studies in Elementary Particle Physics (Co-Investigator, with B. Barnett), NSF, $405,000
1997-98	vBNS Connectivity for Johns Hopkins University (Co-Investigator, with A. Szalay *et al.*), NSF, $350,000
1997	Scalable High Performance Computing Applications (Co-Investigator, with A. Szalay *et al.*), Intel Corporation, $1,700,000
1996	Studies in Elementary Particle Physics (Co-Investigator, with B. Barnett), NSF, $255,000

Observing Proposals Awarded

"Probing the color and size distributions of L5 Jovian Trojans down to sub-km size" (Co-I), Magellan 6.5-meter, 2024B, 6 half-nights

"Probing the color and size distributions of L5 Jovian Trojans down to sub-km size" (Co-I), CTIO Blanco 4-meter, NOAO 2024B-416996, 6 half-nights

"A Deep Search for High Inclination L5 Neptune Trojans down to $r \sim 26.5$" (Co-I), CTIO Blanco 4-meter, NOAO 2023A-423737, 10 nights

"A Magellan survey of colors of trans-Neptunian objects from the DECam Ecliptic Exploration Project (DEEP)" (co-PI) Magellan Baade 2022B, 2.5 nights

"Neptune Trojan Optical Color Survey: Rare Colors Follow-up" (Co-I), Magellan Baade 2022B, 2.0 nights

"The First Near-IR Spectroscopic Survey of Neptune Trojans," (co-I, graduate student Larissa Markwardt is PI), James Webb Space Telescope Cycle 1 Guest Observer Program, 24.1 hours (2022)

"New Horizons in the Distant Kuiper Belt: Searching for Observable Targets" (PID 83/2021B_N88) (co-I), Keck 2 (DEIMOS), 3 half-nights, 2021B

"Deep L5 Neptunian Trojan Survey" (co-I), NOAO 2021A-0062, CTIO Blanco 4-meter, 5 half-nights

"New Horizons Kuiper Belt Extended Mission Target Search 2020 and Beyond" (PI), NOAO 2020A-0266, CTIO Blanco 4-meter, 8 half-nights (Canceled due to COVID-19 observatory closure)

"Monitoring the first known interstellar Comet 2I/Borisov" (Co-I, PI is my postdoc Ed Lin), MDM 2.4-meter, 2019-B, 2 nights

"Follow-up Observations in the Search for New Horizons Kuiper Belt Long-Range Targets" (PI), Magellan 6.5-meter, 2019B, 2 nights

"A DECam Search for Earth Trojans" (Co-I, PI is my student Larissa Markwardt), NOAO 2019B-0319, CTIO 4-meter, 1 hour per evening for 8 nights

"The DECam Ecliptic Exploration Project (DEEP)" (co-PI), NOAO 2019A-0337, CTIO Blanco 4-meter, 47.5 nights, 2019-2022

"Recovery, Tracking, and Dynamical Classification of Trans-Neptunian Objects" (PI), MDM 2.4 meter, 2017B, 6 nights

"Measuring the Size of a Distant New Dwarf Planet Candidate" (PI), ALMA sub-millimeter array (Director's discretionary time), 8 hours, 2016B

Selected Journal Publications (from over 560 SPIRES entries; complete list available separately)

"An Extremely Deep Rubin Survey to Explore the Extended Kuiper Belt and Identify Objects Observable by New Horizons", J.J. Kavelaars et al. 2025, doi:arXiv:2503.02765, submitted to ApJS

"The DECam Ecliptic Exploration Project (DEEP). VII. The Strengths of Three Superfast Rotating Main-belt Asteroids from a Preliminary Search of DEEP Data", Strauss, R. *et al.* (DEEP Collaboration), 2024, AJ 168, 184

"Candidate Distant Trans-Neptunian Objects Detected by the New Horizons Subaru TNO Survey", Fraser, W. C. *et al.* 2024, arXiv:2407.21142, accepted by Planet. Sci. J

"Michael J. Longo memoriam", Physics Today, vol. 2024, issue 08, id. 43559, 10.1063/pt.vagy.veff

"Can Neptune's Distant Mean Motion Resonances Constrain Undiscovered Planets in the Solar System? Lessons from a Case Study of the 9:1 Resonance", Porter, M. W., Gerdes, D. W., Napier, K. J., Lin., H. W., and Adams, F. C. 2024, Planet. Sci. J. 5, 61. doi:10.3847/PSJ/ad2201

"Designing an Optimal DECam Kilonova Search for Gravitational Wave Events," Bom, C. R., Annis, J., Garcia, A., et al. 2024, ApJ, 960, 122. doi:10.3847/1538-4357/ad0462

"The DECam Ecliptic Exploration Project (DEEP): I. Survey description, science questions, and technical demonstration", Trilling, D. E., Gerdes, D. W., Juric, M., et al. 2024, AJ 167, 132. doi:10.3847/1538-3881/ad1529

"The DECam Ecliptic Exploration Project (DEEP) II. Observational Strategy and Design", Trujillo, C. A., Fuentes, C., Gerdes, D. W., et al. 2023, AJ 167, 133. doi:10.3847/1538-3881/ad1523

"The DECam Ecliptic Exploration Project (DEEP) III: Survey characterization and simulation methods" Bernardinelli, P. H., Smotherman, H., Langford, Z., et al. 2023, AJ 167, 134. doi: 10.3847/1538-3881/ad1527

"The DECam Ecliptic Exploration Project (DEEP) IV: Constraints on the shape distribution of bright TNOs", Strauss, R., Trilling, D. E., Bernardinelli, P. H., et al. 2023, AJ 167, 135. doi:10.3847/1538-3881/ad1526

"The DECam Ecliptic Exploration Project (DEEP): V. The Absolute Magnitude Distribution of the Cold Classical Kuiper Belt", Napier, K. J., Lin, H.-W., Gerdes, D. W., et al. 2023, Planet. Sci. J. 5, 50. doi:10.3847/PSJ/ad1528

"The DECam Ecliptic Exploration Project (DEEP) VI: first multi-year observations of trans-Neptunian objects", Smotherman, H., Bernardinelli, P. H., Portillo, S. K. N., et al. 2023, AJ 167, 136. doi:10.3847/1538-3881/ad1524

"First Near-IR Spectroscopic Survey of Neptune Trojans: Distinct Surface Compositions of Red vs.

Ultra-Red Neptune Trojans," L. Markwardt, B. Holler, H.-W. Lin, D. Gerdes, F. Adams, R. Malhotra, and K. J. Napier, 2023, submitted to ApJ Letters

"Photometric Survey of Neptune's Trojan Asteroids I: The Color Distribution," L. Markwardt, H.-W. Lin, D. .W. Gerdes, F. Adams, 2023, Planet Sci. J 4 135, doi:10.3847/PSJ/ace528

"Photometric Properties of Jupiter Trojans Detected by the Dark Energy Survey,", J. Pan, H.-W. Lin, D. W. Gerdes, J. Wang et al. 2022, Planet. Sci. J. 3 269 doi:10.3847/PSJ/aca4d1

"Long-term stability of Six Neptunian Trojans," H.-W. Lin, L. Markwardt, K. .J. Napier, D. W. Gerdes et al. 2022, Research Notes of the American Astronomical Society, 6, 79. doi:10.3847/2515-5172/ac6752

"A Collision Mechanism for the Removal of Earth's Trojan Asteroids," K. Napier, F. Adams, L. Markwardt, D. W. Gerdes, H.-W. Lin 2022, Planet. Sci. J. 3, 121, doi:10.3847/PSJ/ac6958

"Orbits and Occultation Opportunities of Fifteen TNOs Observed By New Horizons," S. B. Porter *et al.* (2022) Planet Sci. J 3, 23

"C/2014 UN_{271} (Bernardinelli-Bernstein): The Nearly Spherical Cow of Comets," P. Bernardinelli *et al.* (2021), ApJ Letters 921, L37

"A search of the full six years of the Dark Energy Survey for outer Solar System objects," P. Bernardinelli *et al.* (2021), arXiv: 2109.03758, submitted to AAS journals

"No Evidence for Clustering in the Extreme Trans-Neptunian Objects," K. J. Napier, D. W. Gerdes, H.-W. Lin et al. (2021), Planet. Sci. J 2, 59, arXiv:2102:05601

"Trans-Neptunian Objects Detected in the First Four Years of the Dark Energy Survey," P. Bernardinelli et al. AJ Suppl. 247, 1, 32 (2020), arXiv:1909.01478

"Detection of Diatomic Carbon in 2I/Borisov," H.-W. Lin, C. S. Lee, D. W. Gerdes, F. Adams, J. C. Becker, L. Markwardt, K. Napier, ApJ Letters 889, L30 (2020) arXiv:1912.06161

"Dynamical Classification of Trans-Neptunian Objects Observed by the Dark Energy Survey," T. Khain, D. Gerdes, H.-W. Lin, J. C. Becker, F. C. Adams et al., AJ 159, 4, 133 (2020)

"Search for L5 Earth Trojans with DECam," L. Markwardt, D. Gerdes, R. Malhotra, J. C. Becker, S. J. Hamilton, F. C. Adams (2019), MNRAS 492, 4, 6105 (2020)

"Evidence for Color Dichotomy in the Primordial Neptunian Trojan Population," H.-W. Lin, D. Gerdes, S. Hamilton, F. Adams , Icarus 321, 426; arXiv:1806.09696

"Acceleration of Coronal Mass Ejection Plasma in the Low Corona as Measured by the Citizen CATE Experiment," M. Penn *et al.* 2020, *PASP* 132, 014201, doi:10.1088/1538-3873/ab558c

"Discovery and Dynamics of Three Closely Associated Extreme Trans-Neptunian Objects," T. Khain, J. C. Becker, F. Adams, D. Gerdes, S. Hamilton *et al.*, (2018) AJ 156, 276

"Deep Drilling Fields for Solar System Science," D. Trilling, M. Bannister, C. Fuentes, D. Gerdes, M. Mommert, M. E. Schwamb, C. Trujillo, White Paper submitted in response to the Call for LSST Cadence Optimization White Papers (2018), arXiv:1812.09705

"Discovery and Dynamical Analysis of an Extreme Trans-Neptunian Object with a High Orbital Inclination," J. C. Becker, T. Khain, S. Hamilton, F. Adams, D. Gerdes *et al.*, 2018, AJ 156, 2, 81

"Large Synoptic Survey Telescope Solar System Science Roadmap," M. Schwamb *et al.*, arXiv:1802.01783 Feb. 2018

"Evaluating the Stability of Outer Solar System Objects in the Presence of Planet Nine," J. C. Becker, F. Adams, T. Khain, S. Hamilton, and D. Gerdes, AJ 154, 2, 61 (2017), arxiv:1706.06609

"A gravitational-wave standard siren measurement of the Hubble constant," LIGO Scientific Collaboration *et al.*, *Nature* 551, 85 (2017)

"Multi-Messenger Observations of a Binary Neutron-Star Merger," Abbott, B. P., Abbott, R., Abbott, T. D., et al. 2017, ApJ Letters 848, L12

"The Electromagnetic Counterpart of the Binary Neutron Star Merger LIGO/Virgo GW170817. I. Discovery of the Optical Counterpart Using the Dark Energy Camera," M. Soares-Santos *et al.*, ApJL has 848 L16 (2017).

"Dark Energy Survey Year 1 Results: Cosmological Constraints from Galaxy Clustering and Weak Lensing," T. M. Abbott *et a.* (DES Collaboration), arXiv:1708.01530 (Aug. 2017)

"Dark Energy Survey Year 1 Results: A Precise H0 Measurement from DES Y1, BAO, and D/H Data, T. M. Abbott *et a.* (DES Collaboration), arXiv:1711.00403 (Aug. 2017)

"Discovery and Physical Characterization of a Large Scattered Disk Object at 92 AU," D. Gerdes *et al.* (DES Collaboration), ApJL 839, 1, L15 (2017), arXiv:1702:00731

"The Pan-STARRS I Discoveries of Five New Neptune Trojans," H. W. Lin *et al.* arXiv:1609.04677 (2016), accepted by Astronomical Journal, 152, 147 (2016).
"Joint analysis of galaxy-galaxy lensing and galaxy clustering: Methodology and forecasts for Dark Energy Survey," Park, Y. *et al.* (DES Collaboration), PRD 94, 063533 (2016)
"Cosmology Constraints from Shear Peak Statistics in Dark Energy Survey Science Verification Data", T. Kacprzak *et al.* (DES Collaboration), MNRAS, 463, 3653 (2016).
"A Dark Energy Camera Search for Missing Supergiants in the LMC After the Advanced LIGO Gravitational Wave Event GW150914," J. Annis *et al.* (DES Collaboration), ApJL, 823, L34 (2016)
"A DECam Search for an Optical Counterpart to the First Advanced LIGO Gravitational Wave Event GW150914," C. Cowperthwaite *et al.* (DES Collaboration), ApJL 826, L29 (2016)
"The Dark Energy Survey: More than Dark Energy – An Overview," T. Abbott *et al.* (DES Collaboration), MNRAS 460, 1270 (2016)
"Observation of Two New L4 Neptune Trojans in the Dark Energy Survey Supernova Fields," D. Gerdes *et al.* (DES Collaboration), AJ 151, 39 (2016)
"Galaxies in X-Ray Selected Clusters and Groups in Dark Energy Survey Data. I. Stellar Mass Growth of Bright Central Galaxies since $z \sim 1.2$," Y. Zhang *et al.* (DES Collaboration), ApJ 816, 2, 98 (2016)
"The Difference Imaging Pipeline for the Transient Search in the Dark Energy Survey," R. Kessler *et al.* (DES Collaboration), AJ 150, 6, 172 (2015)
"The Dark Energy Camera," B. Flaugher *et al.* (DES Collaboration), AJ 150, 5, 150 (2015)
"Eight Ultra-Faint Galaxy Candidates Discovered in Year Two of the Dark Energy Survey," A. Drlica-Wagner *et al.* (DES Collaboration), ApJ 813, 2, 109 (2015)
"Automated Transient Identification in the Dark Energy Survey," D. Goldstein *et al.* (DES Collaboration), AJ 150, 3, 82 (2015)
"Search for Gamma Ray Emission from DES Dwarf Spheroidal Galaxy Candidates with Fermi-LAT Data," A. Drlica-Wagner *et al.* (DES Collaboration), ApJL 809, 1, L4 (2015)
"Eight New Milky Way Companions Discovered in First-Year Dark Energy Survey Data,", K. Bechtol *et al.* (DES Collaboration) ApJ 807, 1, 50 (2015)
"Cosmology from Cosmic Shear with DES Science Verification Data," T. Abbott *et al.* (DES Collaboration), arXiv:1507.05552 (2015)
"DES13S2cmm: The First Superluminous Supernova from the Dark Energy Survey," A. Papadopoulos *et al.* (DES Collaboration), MNRAS 449, 2, 1215 (2015)
"Modeling the Transfer Function for the Dark Energy Survey," C. Chang *et al.* (DES Collaboration), ApJ 801, 2, 73 (2015)
"Combining Dark Energy Survey Science Verification Data with Near Infrared Data from the ESO VISTA Hemisphere Survey," M. Banerji *et al.* (DES Collaboration), MNRAS 446, 2523 (2015)
"Photometric Redshifts in the Dark Energy Survey Science Verification Data," C. Sanchez *et al.* (DES Colaboration), MNRAS 445, 1482 (2014)
"Mass and galaxy distributions of four massive galaxy clusters from Dark Energy Survey Science Verification Data," P. Melchior *et al.* (DES Collaboration), MNRAS 449, 3, 2219
"'Status of the Dark Energy Survey Camera (DECam) Project", B. Flaugher *et al.*, Ground-based and Airborne Instrumentation for Astronomy IV 8446 (2012)
"The BigBoss Experiment," D. Schlegel *et al.*,, arXiv:1106.1706 (June, 2011).
"Reducing Zero-point Systematics in Dark Energy Supernova Experiments," L. Faccioli *et al.,* AstroPart. Phys. **34**, 847 (2011).
"A GMBCG Galaxy Cluster Catalog of 55,424 Rich Clusters from SDSS DR7," J. Hao *et al.*, Ap. J. Sup. **191**, 254 (2010).
"PHAT: PHoto-z Accuracy Testing," H. Hildebrandt *et al.*, Astronomy & Astrophysics **523**, A31 (2010).
"ArborZ: Photometric Redshifts Using Boosted Decision Trees," arXiv:0908.4085, D. Gerdes *et al.,* Ap. J. **715**, 823 (2010).
"Precision Measurements of the Cluster Red Sequence using an Error Corrected Gaussian Mixture Model," J. Hao *et al.*, Ap. J. **702**, 745 (2009).
"Measurement of W-Boson Polarization in Top-quark Decay in $p\bar{p}$ Collisions at $\sqrt{s} = 1.96$ TeV," T. Aaltonen *et al.*, arXiv:1003.0224, submitted to Phys. Rev. Lett. (2010).
"Measurement of the Top Pair Production Cross Section in the Dilepton Decay Channel in $p\bar{p}$ Collisions

at $\sqrt{s} = 1.96$ TeV," T. Aaltonen *et al.*, arXiv:1002.2919, submitted to Phys. Rev. D (2010).
"Inclusive Search for Standard Model Higgs Boson Production in the WW Decay Channel using the CDF II Detector," T. Aaltonen *et al.*, arXiv:1001.4468, submitted to Phys. Rev. Lett. (2010).
"Combination of Tevatron searches for the standard model Higgs boson in the W+W- decay mode," T. Aaltonen *et al.*, Phys. Rev. Lett. **104**, 061802 (2010).
"A Search for the Higgs Boson Produced in Association with Z —¿ l+ l- Using the Matrix Element Method at CDF II," T. Aaltonen *et al.*, Phys. Rev. D **80**, 071101 (2009).
"First Observation of Electroweak Single Top Production," T. Aaltonen *et al.*, Phys. Rev. Lett. **103**, 092002 (2009).
"Global Search for New Physics with 2.0 fb^{-1} at CDF," T. Aaltonen *et al.*, Phys. Rev. **D79**, 011101 (2009).
"Bringing the Classroom to the Web: Effects of Using New Technologies to Capture and Deliver Lectures," E. L. Dey, H. E. Burn, and D. Gerdes, Res. High. Educ. **50**, 4 (2009).
"Search for a Higgs Boson Decaying to Two W Bosons at CDF," T. Aaltonen *et al.*, Phys. Rev. Lett. **102** 021802 (2009).
"Search for the Higgs boson produced with $Z \to \ell^+\ell^-$ in $p\bar{p}$ collisions at $\sqrt{s} = 1.96$ TeV," T. Aaltonen *et al.*, Phys. Rev. Lett. **101** 251803 (2008).
"Search for Standard Model Higgs Boson Production in Association with a W Boson at CDF," T. Aaltonen *et al.*, Phys. Rev. **D78**, 032008 (2008).
"Search for Standard Model Higgs Bosons Produced in Association with W Bosons,", T. Aaltonen *et al.*, Phys. Rev. Lett. **100**, 041801 (2008).
"Limits on the Production of Narrow $t\bar{t}$ Resonances in $p\bar{p}$ Collisions at $\sqrt{s} = 1.96$ TeV" T. Aaltonen *et al.*, Phys. Rev. **D77**, 051102 (2008).
"Search for Higgs Bosons in Events with Missing Transverse Energy and b Quark Jets Produced in $p\bar{p}$ Collisions at $\sqrt{s} = 1.96$ TeV," T. Aaltonen *et al.*, Phys. Rev. Lett. **100**, 211801 (2008).
"Measurement of the Cross Section for W Boson Production in Association with Jets in $p\bar{p}$ Collisions at $\sqrt{s} = 1.96$ TeV," T. Aaltonen *et al.*, Phys. Rev. **D77**, 011108 (2008). Rapid Communications (2007).
"First Observation of the Heavy Baryons Σ_b and Σ_b^*," T. Aaltonen *et al.*, Phys. Rev. Lett. **99** 202001 (2007).
"Precise Measurement of the Top Quark Mass in the Lepton + Jets Topology at CDF II, " A. Abulencia *et al.*, Phys. Rev. Lett. **99**, 182002 (2007).
"Cross Section Constrained Top Quark Mass Measurement from Dilepton Events at the Tevatron," T. Aaltonen *et al.*, Phys. Rev. Lett **100**, 062005 (2007).
"Measurement of the Top Quark Mass using Missing-E_T Plus Jets Events with Secondary Vertex b-tagging at CDF II," T. Aaltonen *et al.*, Phys. Rev. **D75**, 111103 (2007).
"Precision Measurement of the Top Quark Mass from Dilepton Events at CDF II," A. Abulencia *et al.*, Phys. Rev. D **75**, 031105 (2007).
"Top Quark Mass Measurement from Dilepton Events at CDF II with the Matrix-Element Method," A. Abulencia *et al.*, Phys. Rev. D **74**, 032009 (2006).
"Measurement of the Helicity of W Bosons in Top-Quark Decays," A. Abulencia *et al.*, Phys. Rev. **D73**, 111103 (2006).
"Measurement of the $t\bar{t}$ Production Cross Section in $\bar{p}p$ Collisions at $\sqrt{s} = 1.96$ TeV using Lepton + Jets Events with Jet Probability b-tagging, A. Abulencia *et al.*, Phys. Rev. D **74**, 072006 (2006), hep-ex/0607035.
"Search for Large Extra Dimensions Using Dielectron and Diphoton Events in $\bar{p}p$ Collisions at $\sqrt{s} = 1.8$ TeV," D. Gerdes, S. Murgia, J. Carlson, R. Blair, J. Huston, and D. Berebitsky, Phys. Rev. D **73**, 112008 (2006).
"Top Quark Mass Measurement from Dilepton Events at CDF II," A. Abulencia *et al.*, Phys. Rev. Lett. **96**, 152002 (2006).
"Measurement of the $t\bar{t}$ Production Cross Section in $p\bar{p}$ Collisions at $\sqrt{s} = 1.96$ TeV Using Missing-E_T Plus Jets Events with Secondary Vertex b-Tagging, A. Abulencia *et al.*, Phys. Rev. Lett. **97**, 082004 (2006).
"Precision Top Quark Mass Measurement in the Lepton + Jets Topology in $p\bar{p}$ Collisions at $\sqrt{s} = 1.96$ TeV," A. Abulencia *et al.*, Phys. Rev. Lett. **96**, 022004 (2006).
"Measurement of the $t\bar{t}$ Production Cross Section in $p\bar{p}$ Collisions at $\sqrt{s} = 1.96$ TeV Using Lepton + Jets Events with Secondary Vertex b-tagging," D. Acosta *et al.*, Phys. Rev. D **71**, 052003 (2005).
"Measurement of $\mathcal{B}(t \to Wb)/\mathcal{B}(t \to Wq)$ at the Collider Detector at Fermilab," D. Acosta *et al.*, Phys. Rev. Lett. **95**, 102002 (2005).

"First Measurements of Inclusive W and Z Cross Sections from Run II of the Tevatron Collider," D. Acosta *et al.*, Phys. Rev. Lett. **94**, 091803 (2005).
"Supernova Acceleration Probe: Studying Dark Energy with Type Ia Supernovae," J. Albert *et al.* (SNAP Collaboration), astro-ph/0507459 (2005).
"Seeing the Nature of the Accelerating Physics: It's a SNAP," J. Albert *et al.* (SNAP Collaboration), astro-ph/0507458 (2005).
"Search for Anomalous Kinematics in $t\bar{t}$ Dilepton Events at CDF II," D. Acosta *et al.*, Fermilab-Pub-04-396-E, submitted to Phys. Rev. Lett. (Dec. 2004).
"Supernova/Acceleration Probe: A Satellite Experiment to Study the Nature of the Dark Energy," G. Aldering *et al.*, (SNAP Collaboration), astro-ph/0405232, submitted to PASP (2004).
"Top Quark Physics at the Tevatron," D. Gerdes, Journal of the Korean Physical Society **45**, S268 (2004).
"Observation of the Narrow State $X(3872) \to J/\psi\pi^+\pi^-$ in $p\bar{p}$ Collisions at $\sqrt{s} = 1.96$ TeV," Phys. Rev. Lett. **93**, 072001 (2004).
"Weak Lensing from Space. 1. Instrumentation and Survey Strategy," J. Albert *et al.* (SNAP Collaboration), Astroparticle Physics **20**, 377 (2004).
"The CDF Central Outer Tracker," T. Affolder *at al.*, Nucl. Instrum. Methods Phys. Res. **A** 42586 (2004).
"Search for Single Top Quark Production in $p\bar{p}$ Collisions at $\sqrt{s} = 1.8$ TeV," D. Acosta *et al.*, Phys. Rev. D **65**, 091120 (2002)
"Executive Summary of the Snowmass 2001 Working Group (P1), 'Electroweak Symmetry-Breaking'," M. Carena, D. Gerdes, H. Haber, A. Turcot, and P. Zerwas, hep-ph/0203229, MCTP-02-16, published in the proceedings of the Snowmass 2001 "Future of High Energy Physics" workshop (2002).
"The Snowmass Points and Slopes: Benchmarks for SUSY Searches," B.C. Allanach *et al.*, hep-ph/0202233, Eur. J. Phys. **C25**, 113 (2002).
"Limits on Extra Dimensions and New Particle Production in the Exclusive Photon and Missing Energy Signature in $p\bar{p}$ Collisions at $\sqrt{s} = 1.8$ TeV," D. Acosta *et al.*, Phys. Rev. Lett. **89**, 281801 (2002)
"Linear Collider Physics Resource Book for Snowmass 2001," Chapter on Top Quark Physics (co-written with Ulrich Baur, SUNY-Buffalo), The American Linear Collider Working Group (T. Abe *et al.*), BNL-52627, CLNS 01/1729, Fermilab-Pub-01/058-E, LBNL-47813, SLAC-R-570, UCRL-ID-143810-DR, LC-REV-2001-074-US, June, 2001.
"An Online Track Processor for the the Collider Detector at Fermilab," E. Thomson *et al.*, IEEE Trans. Nucl. Sci. **49**, 1063 (2002).
"The Case for a 500 GeV Linear Collider," J. Bagger *et al.*, SLAC-PUB-8495, BNL-67545, Fermilab-Pub-00-152, LBNL-046299, UCRL-ID-139524, LBL-46299, July 2000, hep-ex/0007022
"Search for a Fourth Generation Quark More Massive than the Z^0 Boson in $p\bar{p}$ Collisions at $\sqrt{s} = 1.8$ TeV," T. Affolder *et al.*, Phys. Rev. Lett. **84**, 835 (2000), hep-ex/9909027.
"Measurement of the Helicity of W Bosons in Top Quark Decays at CDF," T. Affolder *et al.*, Phys. Rev. Lett. **84**, 216 (2000), hep-ex/9900042
"Search for a W' Boson via the Decay $W' \to \mu\nu$ in $p\bar{p}$ Collisions," F. Abe *et al.*, Phys. Rev. Lett. **84**, 5716 (2000), hep-ex/9901004
"Online Track Processor for the CDF Upgrade," C. Ciobanu *et al.*, IEEE Trans. Nucl. Sci. **46**, 933 (1999).
"Measurement of the Top Quark Mass with the Collider Detector at Fermilab," F. Abe *et al.*, Phys. Rev. Lett. **82**, 271 (1999).
"Measurement of the CP-Violation Parameter $\sin 2\beta$ in B_d^0-$\bar{B}_d^0 \to J/\psi\, K_s$ Decays," F. Abe *et al.*, Phys. Rev. Lett. **81**, 5513 (1998); Phys. Rev. D **61**, 072005 (1999).
"Observation of the B_c Meson in $p\bar{p}$ Collisions at $\sqrt{s} = 1.8$ TeV," F. Abe *et al.*, Phys. Rev. Lett. **81**, 2432 (1998).
"Observation of Hadronic W Decays in $t\bar{t}$ Events with the Collider Detector at Fermilab," F. Abe *et al.*, Phys. Rev. Lett. **80**, 5720 (1998).
"Measurement of the Top Quark Mass," F. Abe *et al.*, Phys. Rev. Lett. **80**, 2767 (1998).
"Search for Flavor-Changing Neutral Current Decays of the Top Quark," F. Abe *et al.*, Phys. Rev. Lett. **80**, 2525 (1998).
"Measurement of the $t\bar{t}$ Production Cross Section in $p\bar{p}$ Collisions at $\sqrt{s} = 1.8$ TeV" F. Abe *et al.*,

Phys. Rev. Lett. **80**, 2773 (1998).

"First Observation of the All-Hadronic Decays of $t\bar{t}$ Pairs," F. Abe *et al.*, Phys. Rev. Lett. **79**, 1992 (1997).

"Observation of Top Quark Production with the Collider Detector at Fermilab," F. Abe *et al.*, Phys. Rev. Lett. **74**, 2626 (1995).

"Shower Maximum Trigger for Electrons and Photons at CDF," K. Byrum *et al.*, Nucl. Instrum. Methods Phys. Res., Sect. **A364**, 144 (1995).

"Search for Charged Bosons Heavier than the W in $p\bar{p}$ Collisions at $\sqrt{s} = 1.8$ TeV," F. Abe *et al.*, Phys. Rev. Lett. **74**, 2900 (1995).

"Direct Measurement of the W Boson Width," F. Abe *et al.*, Phys. Rev. Lett. **74**, 341 (1995).

"Evidence for Top Quark Production in $p\bar{p}$ Collisions," F. Abe *et al.*, Phys. Rev. D **50**, 2966 (1994).

"Evidence for Top Quark Production in $p\bar{p}$ Collisions," F. Abe *et al.*, Phys. Rev. Lett. **73**, 225 (1994).

"A Study of Four-Jet Events and Evidence for Double Parton Interactions in $p\bar{p}$ Collisions at $\sqrt{s} = 1.8$ TeV," F. Abe *et al.*, Phys. Rev. D **47**, 4857 (1993).

"A Measurement of the Production and Muonic Decay Rate of W and Z Bosons at $\sqrt{s} = 1.8$ TeV," F. Abe *et al.*, Phys. Rev. Lett. **69**, 28 (1992).

"A Search for New Gauge Bosons in $p\bar{p}$ Collisions at $\sqrt{s} = 1.8$ TeV," F. Abe *et al.*, Phys. Rev. Lett. **68**, 1463 (1992).

"Search for $W' \to e\nu$ and $W' \to \mu\nu$ in $p\bar{p}$ Collisions at $\sqrt{s} = 1.8$ TeV," F. Abe *et al.*, Phys. Rev. Lett. **67**, 2609 (1992).

"Comment on 'Neutron Star Masses as a Constraint on the Nuclear Compression Modulus'," J. Cooperstein, E. A. Baron, D. Gerdes, and S. Kahana, Phys. Rev. Lett. **60**, 68 (1988).

Book Chapters

"Solar System Science", in *The Dark Energy Survey: The Story of a Cosmological Experiment*, O. Lahav, L. Calder, J. Mayers, and J. Frieman eds., World Scientific, 2020, pp. 309-19 `https://doi.org/10.1142/q0247`

Professional Memberships

American Physical Society
American Astronomical Society
Phi Beta Kappa
Sigma Xi

Professional Activities and Service

2024-25	Faculty Affiliate, Michigan Institute for Data and AI in Society (MIDAS)
2024	External Review Committee, Department of Physics, University of Texas - Austin
2022	Scientific consultant, "Star Chasers of Senegal", documentary produced for PBS Nova by Terra Mater Studios, Vienna, Austria
2022	Session Chair: The Sun and the Solar System II, 240th meeting of the American Astronomical Society, Pasadena, CA, June 13-17, 2022
2021	Big Ten Academic Alliance Department Executive Officers Seminar fellowship
2021	College of LSA Reboot and Reimagine Task Force: Faculty Academic Affairs
2021	NSF Graduate Research Fellowship review panelist, Astronomy and Astrophysics
2019	Session Chair: Detecting and Protecting the Earth from Earth-Crossing Asteroids American Physical Society April Meeting, Denver, CO
2019-	Member, New Horizons Kuiper Extended Mission Science Team
2018-	Co-I, Deep Ecliptic Exploration Project (DEEP), awarded 47.5 nights on DECam
2018-21	Member, NASA Small Bodies Assessment Group Steering Committee
2018	NASA proposal review panelist
2017-	Member, LSST Solar System Science Collaboration

2016-17	Co-Investigator, BLanco Imaging of the Southern Skies (BLISS) Survey
2016	PI: ALMA Director's Discretionary Proposal 2015.A.00023.S, "Measuring the Size of a Distant New Dwarf Planet Candidate", 6 hours awarded
2015-19	Co-chair, Dark Energy Survey Transients and Moving Objects science working group
2014	DoE Institutional Review of Brookhaven National Laboratory
2014-15	Proposal reviewer, Natural Sciences and Engineering Research Council of Canada
2012-16	DES Run Manager (on-site at CTIO: Nov. 2012, Jan. 2013, Jan. 2014, Jan. 2015, Dec. 2015)
2012-	Referee, MNRAS
2010-2018	Member, BigBOSS / DESI Collaboration
2011-13	Member, PandaX Collaboration
2010	NSF external review panelist, Michigan State University high energy / particle astrophysics group
2009-10	Co-chair, Project Director Search Committee, Dark Energy Survey Collaboration
2009	NSF review panel, LHC2009
2008-09	AAPT 2009 Summer Meeting Local Organizing Committee
2008-2015	Chair, Membership Committee, Dark Energy Survey Collaboration
2007	NSF review panel, Experimental Particle Physics 2008
2006	"Perception of the Extreme Unseen," artistic collaboration with physicist Gordon Kane and artist Jan-Henrik Andersen. An illustration from this work was featured on the cover of the National Research Council's EPP2010 report.
1990-2009	Member, the Collider Detector at Fermilab (CDF) Collaboration
2005-	Member, Management Committee, Dark Energy Survey Collaboration
2005-	Member, Dark Energy Survey Collaboration (DES) (Michigan Co-PI)
2003-2009	Member, SuperNova/Acceleration Probe (SNAP) Collaboration
2006-2008	Sub-project leader, CDF Analysis Diskpool project
2006	External Reviewer for Dept. of Energy, Indiana University High-Energy Physics grant
2005	Co-organizer, DES Collaboration Meeting, Ann Arbor, Oct. 28-29, 2005.
2005	Co-organizer, Top Quark Symposium, University of Michigan, April 7-8, 2005
2005	Reviewer, Department of Energy Outstanding Junior Investigator proposals
2003-05	Referee, Nuclear Instruments and Methods
2002-2014	Member, Michigan Center for Theoretical Physics
2002	Co-convener, CDF W+jets working group
2002	Winston Churchill Foundation, national scholarship selection committee
2002-04	Member, American Linear Collider Physics and Detector Executive Committee
2001-03	Member, Fermilab Linear Collider Physics and Detector Advisory Committee
2001	Co-convener, Working Group on Electroweak Symmetry Breaking, Snowmass 2001: The Future of Particle Physics. Snowmass, Colorado, June 30-July 21, 2001
2001	Member, National Science Foundation CAREER proposal review committee for experimental particle physics
2000	Local Organizing Committee, International Workshop on the Physics and Technology of Linear e^+e^- Colliders, Fermilab, October 2000
2000	Organizing Committee, Workshop on Physics and Detectors for Future e^+e^- Colliders, Berkeley, CA, March 2000
1999-2000	Co-leader, CDF Tracking Group
1999	Local Organizing Committee, Physics In Collision Conference, Ann Arbor, MI, June 1999
1999	Organizing Committee, Workshop on Physics and Detectors for Future Electron-Positron Linear Colliders, Ann Arbor, MI, March 1999
1998-99	International Organizing Committee, Physics and Experiments with Future Linear e^+e^- Linear Colliders, Barcelona, Spain, April-May 1999
1998-2003	Leader, Working Group on Top Quark Physics, North American Study of Physics and Detectors for Future Electron-Positron Linear Colliders
1998-99	Member, Fermi National Accelerator Laboratory Director search committee
1998	Working group leader, U.S. Department of Energy "Energy Research Themes and Strategic Directions" planning group
1998-	Proposal reviewer, U.S. Department of Energy

1997	Member, National Science Foundation CAREER proposal review committee for experimental particle physics
1997	Member, National Science Foundation Research Experience for Undergraduates (REU) proposal review committee
1997-	Referee, Physical Review D
1997-98	Chair, Fermilab Users Executive Committee
1996-99	Member, Fermilab Users Executive Committee
1996-	Proposal Referee, National Science Foundation
1996-98	CDF Computing and Software Review Committee
1996	Top Quark Physics working group leader, Workshop on Future Directions for High Energy Physics, Snowmass, Colorado
1994-95	Co-leader, CDF B-tag Working Group
1992-2006	Godparent (CDF internal reviewer) for numerous physics analyses

Invited Talks and Conference Proceedings

2024 "Optimal Search for Hilda and L5 Lucy Targets of Opportunity," talk presented at the Lucy Science Team Meeting, Tempe, AZ, Nov. 20, 2024

2022 "DEEP Learning at the Edge of the Solar System", MIDAS AI Summit, University of Michigan, Nov. 14, 2022

2019 "New Worlds Beyond Neptune: Solar System Discoveries with DES", From Deep Learning to the Dark Universe, London, UK, April 10, 2019

2018 "What Can the Dark Energy Survey Teach Us about the $z = 10^{-14}$ Universe?", Planet Nine Workshop, Caltech, May 23, 2018

2014 "Dark Energy: Status and Outlook," review talk presented at XXXIV Physics in Collision, Indiana University, Sept. 20, 2014

2011 "Cosmology with the Dark Energy Survey," invited talk presented at the Shanghai Particle Physics and Cosmology Symposium, Shanghai, China, June 2011

2010 "Status of the Dark Energy Survey Camera (DECam) Project," B. Flaugher *et al.*, SPIE2010, FERMILAB-CONF-10-214-A

2010 " Testing the Dark Energy Camera on a Telescope Simulator," H. T. Diehl *et al.*, SPIE2010, FERMILAB-CONF-10-179-E

2009 "The Dark Side of the Universe," keynote address at Michigan SPS Undergraduate Research Conference, Wayne State University, Dec. 2009.

2006 "Introductory Laboratory Reforms at the University of Michigan," talk presented at the American Association of Physics Teachers' Summer meeting, Syracuse, NY, Aug. 2006.

2005 "Engaging Students in Large Lectures through Interactive Technology," invited talk given at "Teaching the Disciplines and the Discipline of Teaching: A Symposium Celebrating 125 Years of the Art and Science of Teaching at Michigan," School of Education, University of Michigan, June 2005.

2004 "Losing Face: The Importance of Seeing the Lecturer in Multimedia Presentations," with H. Burn and E. Dey (Center for the Study of Higher and Postsecondary Education), paper presented by H. Burn at the Annual Conference for the Association of the Study of Higher Education (ASHE), November 14-16, 2004, Kansas City, MO.

"Top Quark Physics at the Tevatron," invited talk at the 2nd International Conference on Flavor Physics, Seoul, South Korea, Oct. 2003, published in the Journal of the Korean Physical Society, vol. 45, S268 (2004).

"Teaching the Physics and Physiology of Rollercoasters," invited talk presented at the AAPT meeting, Madison, WI, August 2003.

"Measurements at the Linear Collider," invited talk to be presented at the Delhi Symposium on Linear Colliders, Delhi, India, March 2003 (cancelled due to outbreak of Iraq war).

"Detectors for the Linear Collider," invited talk at the Fermilab Users Meeting, June 2002.

"Top and QCD Physics at the Linear Collider," invited talk at Loopfest 2002, Brookhaven National Laboratory, May 2002.

"Searches for Large Extra Dimensions and Technicolor at the Tevatron," plenary talk presented at the XXXVth Rencontres de Moriond: QCD and Hadronic Interactions at High Energy, Les Arcs, Savoie, France, March 18-25, 2000, published in the proceedings (Editions Frontieres).

"Physics at Electron-Positron Linear Colliders," plenary talk given at the $\mu\mu$99 International Conference on Muon Colliders, San Francisco, Dec. 1999. hep-ph/0003046, published in the proceedings (World Scientific).

"Physics Opportunities of the Next Linear Collider," opening plenary talk given at the Next Linear Collider Lehman Review, Stanford Linear Accelerator Center, May 1999.

"Top Quark Reconstruction with Full Simulation in the Large and Small Detectors," talk at the Fourth International Workshop on Linear Colliders, Sitges, Spain, April 1999; published in the proceedings (Universitat Autonoma de Barcelona, 2000).

"Top Quark Production and Decay at the Tevatron," plenary talk at the XXIIth Rencontres de Moriond: Electroweak Interactions and Grand Unified Theories, Les Arcs, Savoie, France, March 15-22, 1997; hep-ex/9706001, published in "1997 Electroweak Interactions and Grand Unified Theories," J. Trân Thanh Vân, ed., Editions Frontieres, 1997.

"Top Quark Physics Results from CDF and DØ," plenary talk at "New Directions for High Energy Physics" workshop, Snowmass, CO June 24-July 13, 1996; hep-ph/9609013, published in the proceedings.

"Top Quark Physics: Future Measurements," plenary talk at "New Directions for High Energy Physics" workshop, Snowmass, CO June 24-July 13, 1996; hep-ph/970424, published in the proceedings.

"Observation of Top Quark Production with the CDF Detector at Fermilab," plenary talk presented at Les Rencontres de Physique de la Vallee d'Aoste, La Thuile, Italy, March 1995. Published in "Results and Perspectives in Particle Physics," M. Greco, ed., Frascati Physics Series, 1995.

"Implementation of the Shower Max Electron Trigger at CDF," K. Byrum *et al.*, published in "High Energy Physics: Proceedings of the 27th ICHEP, P.J. Bussey and I. G. Knowles, eds., IOP, 1995.

"Shower Maximum Trigger for Electrons and Photons at CDF," talk at the American Physical Society DPF '94 Meeting, Albuquerque, NM, Aug 1994. Published in "ThP05e Albuquerque Meeting: Proceedings," S. Seidel, ed., World Scientific, 1995.

"Measurement of Correlated b Quark Cross Sections at CDF," talk at the American Physical Society DPF '94 Meeting, Albuquerque, NM, Aug 1994. Published in "The Albuquerque Meeting: Proceedings," S. Seidel, ed., World Scientific, 1995.

"Prospects for Top at CDF," Invited talk at the XXVIIth Rencontres de Moriond, Les Arcs, Savoie, France, March 22-28, 1992. Published in "Perturbative QCD and Hadronic Interactions," J. Trân Thanh Vân, ed., Editions Frontieres, 1992.

Lectures, Colloquia, Posters, and Seminars

"DEEP Drilling into the Solar System: Discovering the Faintest Asteroids," Physics colloquium at Carleton College, Oct. 11, 2024

"More Phase Curves from the Kuiper Belt: Photometric Properties of Subaru-Discovered KBOs From New Horizons LORRI and HST Observations", AAS Division of Planetary Sciences meeting, Boise, ID, Oct. 2024

"An Efficient Shift-and-Stack Algorithm Applied to Detection Catalogs," S. Stelzer et al. (DEEP Collaboration), AAS Division of Planetary Sciences meeting, Boise, ID, Oct. 2024

"Spacecraft encounters with resonant populations: an optimal target search strategy", talk presented at the AAS Division of Planetary Sciences meeting, Boise, ID, Oct. 2024

"Totally Awesome: Your Guide to the Great North American Eclipse of 2024," public lecture for Saturday Morning Physics, University of Michigan, Feb. 17, 2024, https://www.youtube.com/watch?v=tN4LD059Iew

"DEEP Drilling into the Kuiper Belt: First Results from the DECam Ecliptic Exploration Project", Colloquium at NOIRLab South, La Serena, Chile, Feb. 5, 2024

"The Coolest Place in the Solar System", Colloquium at Howard University, Washington, DC, Feb. 15, 2023

"DEEP Drilling into the Kuiper Belt: Results from the DECam Ecliptic Exploration Project" Southwest Research Institute, Boulder, CO, Aug. 5, 2022

"DEEP Drilling into the Kuiper Belt: Results from the DECam Ecliptic Exploration Project" 240th meeting of the American Astronomical Society, Pasadena, CA, June 13-17, 2022

"Calibrating the Size Frequency Distribution of the Kuiper Belt with Small KBO Occultations Enabled by New Horizons," S. Porter *et al.*, American Geophysical Union fall 2021 meeting, New Orleans, LA 13-17 December 2021

"A Successful Machine Learning Approach to Detecting Kuiper Belt Objects for NASA's New Horizons Extended Mission", W. Fraser *et al.* (New Horizons GCI Science Team), 53rd Lunar and Planetary Science Conference, 7-11 March, 2022 at The Woodlands, Texas. LPI Contribution No. 2678, 2022, id.1230

"A Machine Learning Approach to Detecting Kuiper Belt Objects for NASA's New Horizons Extended Mission," W. Fraser *et al.*, American Geophysical Union fall 2021 meeting, New Orleans, LA 13-17 December 2021

"Love Letters from the Kuiper Belt," Astronomy on Tap, Ann Arbor, MI, Feb. 11, 2020

"The Great American Eclipse of 2017," public lecture for Saturday Morning Physics, University of Michigan, Feb. 4, 2018

"New Worlds Beyond Neptune with the Dark Energy Survey," Physics department colloquium at the University of Queensland, Brisbane, Australia, November 2017

"New Worlds Beyond Neptune with the Dark Energy Survey," Public lecture at the University of Queensland, Brisbane, Australia, November 2017

"The Coolest Place in the Solar System: New Worlds Beyond Neptune with the Dark Energy Survey," HEP/Astrophysics seminar at the University of Michigan, Oct. 23, 2017

Becker, J. (presenting), Adams, F., Khain, T., Hamilton, S., Gerdes, D. "Evaluating the Dynamical Stability of Outer Solar System Objects in the Presence of Planet Nine." Oct. 2017, Division of Planetary Sciences Meeting (405.07), Provo, UT

Hamilton, S. (presenting), Gerdes, D. "Detection Bias for Objects on Highly Elliptical Orbits with the Dark Energy Survey," Oct. 2017, Division of Planetary Sciences Meeting, Provo, UT

Khain, T. (presenting), Becker, J. C., Adams, F., and Gerdes, D., "Dynamics of a Possible Collisional Family of Extreme TNOs," Oct. 2017, Division of Planetary Sciences Meeting, Provo, UT

"New Worlds Beyond Neptune and the Hunt for Planet Nine," seminar at University of Sussex, UK, July 28, 2017

"New Worlds Beyond Neptune and the Hunt for Planet Nine," seminar at University College London, UK, July 25, 2017

"New Worlds Beyond Neptune and the Hunt for Planet Nine," seminar at Wayne State University, March 31, 2017

"The Coolest Place in the Solar System: Opportunistic Science with the Dark Energy Survey," Astronomy seminar at the University of Michigan, Feb. 9, 2016

"The Coolest Place in the Solar System: Opportunistic Science with the Dark Energy Survey," Astronomy colloquium at the University of Victoria, Oct. 21, 2015

"The Coolest Place in the Solar System: Opportunistic Science with the Dark Energy Survey," colloquium at NRC Herzberg Astronomy and Astrophysics, Victoria, British Columbia, Oct. 20, 2015

"The Coolest Place in the Solar System: Opportunistic Science with the Dark Energy Survey," Astronomy colloquium at the University of British Columbia, Oct. 19, 2015

"New trans-Neptunian Objects in the Dark Energy Survey Supernova Fields," talk presented at the Division of Dynamical Astronomy meeting, Pasadena, CA, May 5, 2015

"New trans-Neptunian Objects in the Dark Energy Survey Supernova Fields," talk presented at the APS April Meeting, Baltimore, MD, April 12, 2015

"Centaurs, Trojans, and Extreme TNOs," talk at DES collaboration-wide teleconference, Feb. 16, 2015

"Discovering trans-Neptunian Objects with the Dark Energy Survey," R. Jennings, Z. Zhang, and D. Gerdes, poster presentation at the American Astronomical Society Meeting,

Seattle, WA, Jan. 8, 2015

"Observation of new trans-Neptunian Objects in the DES Supernova Fields: mid-Y2 update," talk at the DES collaboration-wide teleconference, Nov. 17, 2014.

"Characterizing the trans-Neptunian Solar System with the Dark Energy Survey," seminar at Laboratório Interinstitucional de e-Astronomia, Rio de Janeiro, Brazil, November 13, 2014

"Exploring Nature's Dark Secrets: Cosmology (and more!) with the Dark Energy Survey," colloquium at Oakland University, Oct. 23, 2014

"Observation of New Kuiper Belt Objects in the DES Y1 Supernovae Fields," talk at the DES collaboration-wide teleconference, July 28, 2014

"First Results from the Dark Energy Survey," colloquium at the University of Toronto, May, 2013

"Opto-Mechanical Alignment of DECam", talk presented at Director's Review of DECam Operational Readiness, Fermilab, March 2013

"Shedding Light on the Dark Universe," colloquium at the University of Nebraska, Oct. 2012

"Photometric Redshifts with Boosted Decision Trees," seminar at Laboratório Interinstitucional de e-Astronomia, Rio de Janeiro, Brazil, October 2012

"Cosmology with the Dark Energy Survey," seminar at the University of Science and Technology of China (USTC), Hefei, China, June 2011

A. Cisler and D. Gerdes, "Optimization of Optical Cross-Correlation Filters for Type Ia Supernova Classification and Redshift Estimation," poster presentation at the American Astronomical Society Meeting, Seattle, WA, Jan. 2011

A. Sypniewski and D. Gerdes, Estimating Photometric Redshifts in Non-Representative Galaxy Samples using Boosted Decisions Trees," poster presentation at the American Astronomical Society Meeting, Seattle, WA, Jan. 2011

D. Gerdes, "Photometric Redshifts Using Boosted Decision Trees," poster presentation at the American Astronomical Society meeting, Long Beach, CA, Jan. 2009.

M. Weis and D. Gerdes, "Photometric Redshifts for MaxBCG Galaxy Clusters Using Boosted Decision Trees," poster presentation at the American Astronomical Society meeting, Long Beach, CA, Jan. 2009.

"Taking the Plunge: The Physics of Roller Coasters," Saturday Morning Physics, University of Michigan, April 12, 2008.

"Exploring the Accelerating Universe with The Dark Energy Survey," seminar at Duke University, Feb. 2008.

"The Dark Energy Survey," seminar at University of Illinois, Oct. 2006.

"Exploring the Dark Side of the Universe," colloquium at Brandeis University, Mar. 2006

"Exploring the Dark Side of the Universe," colloquium at Northern Illinois University, Apr. 2005

"Exploring the Dark Side of the Universe," seminar at Wayne State University, Feb. 2005

"Exploring the Dark Side of the Universe," colloquium at Santa Clara University, Nov. 2004

"Using Grisms to Study Baryon Oscillations with SNAP," talk at the SNAP collaboration meeting, Berkeley, CA, Nov. 2004

"Simulating Grisms for Space-Based Dark Energy Missions," talk at SNAP Science Meeting, Sept. 2004

"Near Infrared Detector Phase Space and Filtersets," talk at the SNAP collaboration meeting, Berkeley, CA, Nov. 2003

"Engaging Students in Large Lectures Through Peer Instruction," CRLT Seminar for Preparing Future Faculty, May 2003; CRLT Enriching Scholarship Seminar, May 2004.

"The Physics of Nothing," Saturday Morning Physics, University of Michigan, March 15, 2003.

"How Many Dimensions Does the Universe Have?", Saturday Seminar for Outstanding High School Juniors, University of Michigan, May 2002, May 2003.

"Detector Design at Linear Collliders," invited talk presented to the Fermilab Graduate Student Association, March 2002.

"Electroweak Symmetry Breaking: Outlook from Snowmass," seminar presented at the University of Maryland, October 2001; also presented as a colloquium at Fermi National Accelerator Laboratory, August, 2001.

"Physics at 10^{-18} Meters," Physics Department colloquium at the University of Michigan, Oct. 2001.

"Journey to the Center of the Proton: Physics at 10^{-18} Meters," Saturday Seminar for Outstanding High School Juniors, University of Michigan, May 2001.

Physics Colloquium, Carleton College, April 2001.

"Just-in-Time Teaching with the WWW for Upper-Division Electricity and Magnetism," talk at the American Association of Physics Teachers summer meeting, San Antonio, TX, Aug. 1999

"The Physics and Technology of the CDF Upgrade," seminar presented at Wayne State University, March 1999.

"Top Quark Physics: From the Tevatron to the Linear Collider," colloquium presented at the Stanford Linear Accelerator Center, Dec. 1998.

"Comments on 'Consilliness: Three Problems in Quantum Cosmology'," seminar presented in the Philosophy Department at Carleton College, May 1998.

"Physics with the CDF Upgrade," seminar at the University of Michigan, Feb. 1998.

"How to Stay in HEP, or How to Get What You Came for When You Came to Fermilab," lecture to the Fermilab Graduate Student Association, Sept. 1997.

"Hunting for the Top Quark at Fermilab," colloquium at Swarthmore College, Nov. 1996.

"Observation of the Top Quark," colloquia at the University of Michigan, the University of Maryland, Johns Hopkins University, the University of Toronto, and Argonne National Laboratory, March-April 1995.

"Evidence for the Top Quark Production at CDF," seminar at the University of Maryland, May 1994.

"Hunting for the Top Quark at Fermilab," colloquium at Carleton College, April 1993.

Minor Planet Electronic Circulars

These are electronic bulletins published by the Minor Planet Center to announce the discovery of "unusual minor planets." The objects below are trans-Neptunian minor planets found by me and my students in Dark Energy Survey data, DEEP survey data, and elsewhere.

MPEC 2023-X36: 2020 UT74 (Dec. 4, 2023)
MPEC 2023-X35: 2021 RN238 (Dec. 4, 2023)
MPEC 2023-X35: 2021 RN238 (Dec. 4, 2023)
MPEC 2023-X34: 2021 RM238 (Dec. 4, 2023)
MPEC 2023-X33: 2019 QF112 (Dec. 4, 2023)
MPEC 2023-X32: 2019 QE112 (Dec. 4, 2023)
MPEC 2023-X31: 2021 TK192 (Dec. 4, 2023)
MPEC 2023-X30: 2021 TJ192 (Dec. 4, 2023)
MPEC 2023-X29: 2021 TH192 (Dec. 4, 2023)
MPEC 2023-X28: 2019 QD112 (Dec. 4, 2023)
MPEC 2023-W136: Eight New TNOs (Nov. 28, 2023)
MPEC 2023-W137: 2019 SB235 (Nov. 28, 2023)
MPEC 2023-W139: Ten New TNOs (Nov. 28, 2023)
MPCE 2023-W140: 2019 QF110 (Nov. 28, 2023)
MPEC 2023-W141: 2019 QG110 (Nov. 28, 2023)
MPEC 2023-W145: Eight New TNOs (Nov. 29, 2023)
MPEC 2023-W146: 2020 UZ73 (Nov. 29, 2023)
MPEC 2023-W147: Two New TNOs (Nov. 29, 2023)
MPEC 2023-W148: Eight New TNOs (Nov. 29, 2023)
MPEC 2023-W149: Eight New TNOs (Nov. 29, 2023)
MPEC 2023-W152: Seven New TNOs (Nov. 29, 2023)
MPEC 2023-W153: Nine New TNOs (Nov. 29, 2023)
MPEC 2023-W154: 2021 RK237 (Nov. 29, 2023)
MPEC 2023-W155: Eight New TNOs (Nov. 29, 2023)
MPEC 2023-W157: Eleven New TNOs (Nov. 30, 2023)
MPEC 2023-W158: Twelve New TNOs (Nov. 30, 2023)
MPEC 2023-U28: 2014 MH105 (Oct. 16, 2023)
MPEC 2023-F106: 2014 PN70 (March 22, 2023)
MPEC 2023-F108: 2013 LU35 (March 22, 2023)
MPEC 2023-F109: 2021 LD44 (March 22, 2023)

MPEC 2023-F110: 2021 LP44 (March 22, 2023)
MPEC 2023-F132: Six New TNOs (March 24, 2023)
MPEC 2020-L29: 2013 RT128 (June 5, 2020)
MPEC 2020-L28: 2014 SK378 (June 5, 2020)
MPEC 2020-L27: 2015 AD298 (June 5, 2020)
MPEC 2020-C51: 2018 MG13 (New Horizons target) (Feb. 3, 2020)
MPEC 2020-B309: 2018 MF13 (New Horizons target) (Jan. 31, 2020)
MPEC 2020-B289: 2004 LW31 (New Horizons target) (Jan. 30, 2020)
MPEC 2019-J91: 37 New Distant Objects (May 11, 2019)
MPEC 2019-J52: Seven New Distant Objects (May 5, 2019)
MPEC 2019-H116: Eleven New Distant Objects (Apr. 30, 2019)
MPEC 2019-H115: Eleven New Distant Objects (Apr. 30, 2019)
MPEC 2019-H113: 2016 TY94 (Apr. 30, 2019)
MPEC 2019-H112: 2016 SV58 (Apr. 30, 2019)
MPEC 2019-H111: 2016 SG58 (Apr. 30, 2019)
MPEC 2019-H110: 2016 SP56 (Apr. 30, 2019)
MPEC 2019-H109: 2016 SS55 (Apr. 30, 2019)
MPEC 2019-H108: 2015 TW361 (Apr. 30, 2019)
MPEC 2019-H107: 2013 VQ25 (Apr. 30, 2019)
MPEC 2019-H106: 2015 TK363 = 2016 SM57 (Apr. 30, 2019)
MPEC 2019-H105:2015 TJ363 = 2016 SL57 (Apr. 30, 2019)
MPEC 2019-H104: 2014 SP363 = 2014 SO364 (Apr. 30, 2019)
MPEC 2019-H101: 2003 QM91 (Apr. 29, 2019)
MPEC 2018-V144: 2016 QU89 (Nov. 11, 2018)
MPEC 2018-V143: 2016 QV89 (Nov. 11, 2018)
MPEC 2018-M77: 2014 SO350 (June 22, 2018)
MPEC 2018-J36: 2015 BP519 (May 10, 2018)
MPEC 2018-F514: 2014 WL517 (Mar. 29, 2018)
MPEC 2018-F515: 2014 WM517 (Mar. 29, 2018)
MPEC 2018-F516: 2016 PA101 (Mar. 29, 2018)
MPEC 2018-F517: 2016 SW50 (Mar. 29, 2018)
MPEC 2017-R51: 2016 QF86 (Sept. 13, 2017)
MPEC 2017-O65: 2014 QF442 (Jul. 29, 2017)
MPEC 2017-N24: 2014 UN225 (Jun. 30, 2017)
MPEC 2017-L64 : 2013 RR98 (Jun. 12, 2017)
MPEC 2017-L63 : 2013 RQ98 (Jun. 12, 2017)
MPEC 2017-G29 : 2015 UK84 (Apr. 4, 2017)
MPEC 2017-F210 : 2013 RP98 (Mar. 30, 2017)
MPEC 2017-F189 : 2014 SR250 (Mar. 28, 2017)
MPEC 2017-F98 : 2015 PL312 (Mar. 23, 2017)
MPEC 2017-F97 : 2014 SQ350 (Mar. 23, 2017)
MPEC 2017-F96 : 2014 QU442 (Mar. 23, 2017)
MPEC 2017-F95 : 2015 RS245 (Mar. 23, 2017)
MPEC 2017-F80 : 2015 PF312 (Mar. 22, 2017)
MPEC 2017-F79 : 2015 PD312 (Mar. 22, 2017)
MPEC 2016-T103 : 2014 UZ224 – dwarf planet candidate (Oct. 11, 2016)
MPEC 2016-S102 : 2014 XY40 (Sept. 30, 2016)
MPEC 2016-S17 : 2014 YL50 (Sept. 20, 2016)
MPEC 2016-Q29 : 2001 QF331 (Aug. 28, 2016)
MPEC 2016-P118: 2014 UY224 (Aug. 13, 2016)
MPEC 2016-P73: 2014 VW37 (Aug. 9, 2016)
MPEC 2016-K42: Five New Neptune Trojans (May 31, 2016)
MPEC 2016-C144: 2014 SZ348 (Feb. 12, 2016)
MPEC 2016-C117: 2014 QP441 (Feb. 10, 2016)

MPEC 2016-A102: 2014 TT85 (Jan. 10, 2016)
MPEC 2015-X117: 2015 SO20 = 2010 TF182 (Dec. 9, 2015)
MPEC 2015-X30: 2013 TJ159 (Dec. 4, 2015)
MPEC 2015-X29: 2013 RM98 (Dec. 4, 2015)
MPEC 2015-V57: 2014 SB349 (Nov. 5, 2015)
MPEC 2015-V39: 2014 QU441 (Nov. 4, 2015)
MPEC 2015-V17: 2014 QM441 (Nov. 3, 2015)
MPEC 2015-V16: 2014 QL441 (Nov. 3, 2015)
MPEC 2015-P05: 2013 TH159 (Aug. 5, 2015)
MPEC 2015-H101: 2012 YO9 (Apr. 23, 2015)
MPEC 2015-H62: 2014 UF224 (Apr. 21, 2015)
MPEC 2015-C53: 2013 RG98 (Feb. 11, 2015)
MPEC 2015-C16: 2013 RB98 (Feb. 6, 2015)
MPEC 2015-B175: 2013 SE99 (Jan. 31, 2015)
MPEC 2015-A21: 2013 RD98 (Jan. 9, 2015)
MPEC 2014-W119: 2007 TD418 (Nov. 26, 2014)
MPEC 2014-W115: 2012 VV113 (Nov. 26, 2014)
MPEC 2014-W70: 2012 VU113 (Nov. 22, 2014)
MPEC 2014-W50: 2012 WD36 (Nov. 20, 2014)
MPEC 2014-V20: 2014 QO411 (Nov. 10, 2014)
MPEC 2014-P57: 2013 TV158 (Aug. 13, 2014)
MPEC 2014-P56: 2013 QP95 (Aug. 13, 2014)
MPEC 2014-P55: 2013 QO95 (Aug. 13, 2014)
MPEC 2014-O66: 2012 VS113 (July 30, 2014)

Dissertation Committees

Name	Department	Candidacy	Degree	Committee Chair
Thomas Ruch	Physics			Y
Luis Salazar Manzano	Astronomy			Y
Felicity Hills	Physics	F20		
Kevin Napier	Physics	S20	W23	Y (Co-chair, with Prof. Fred Adams)
Larissa Markwardt	Astronomy	F18	W23	
Adam Smercina	Astronomy		W20	
Juliette Becker	Astronomy	W16	W19	
John Ware	Physics	F16	W18	
Orion Sauter	Physics	F15	F18	
Jesse Golden-Marx	Astronomy	F15	W19	
Stephanie Hamilton	Physics	W17	W19	Y
Anthony Kremin	Physics	S15	W19	Y
Santiago Carride	Physics		F15	
Eduardo Ruiz	Physics		W15	
Trisha Farooque	Physics (Toronto)		W13	external examiner
Sandor van Wassenhove	Astronomy		W13	
Adam Sypniewski	Physics	F11	W14	Y
Yuan-Yuan Zhang	Physics	W12	F15	
Andrew Eppig	Physics		W11	
Ross O'Connell	Physics		W10	
Steve Gliske	Physics	W08	W11	

Catagay Kutluhan	Mathematics		W09	
Clark Cully	Physics		F08	
Bodhitha Jayatilaka	Physics	W06	F06	Y
Mitchell Soderberg	Physics	W04	F06	Y
Matthew Brown	Physics	F04	F06	
David Moehring	Physics	F03	S07	
Joshua Davis	Physics	S03	S06	
Nathan Goldschmidt	Physics	W02	S05	Y
Erin Sheldon	Physics	W00	W02	
David Wolinski	Physics	W00	W01	
Hisham Sati	Physics	F99	W03	
John Carlson	Physics	F99	W02	Y (Co-chair, with Prof. M. Campbell)
Eugene Kushnirsky	Mathematics		F99	
João Guimarães da Costa	Physics	W96	W00	Y
Konstantin Matchev	Physics (JHU)		F97	
Kent Staley	Philosophy (JHU)		W97	
Alexander Kyatkin	Physics (JHU)		F96	
Jeff Tseng	Physics (JHU)		W96	

Postdoctoral Associates and Research Scientists

Hsing-Wen Edward Lin (2016-)
Jeeseon Song (2010-13)
Alexei Varganov (2004-08)
Kenneth Bloom (1997-2004)
Claudio Ferretti (2000-03)
Zhong Feng (1996-97)

Teaching Assignments

W24 180 The Physics of Space Flight (with astronaut Josh Cassada)
F23 501 First-year Mini-Colloquium
F22 501 First-year Mini-Colloquium
F21 501 First-year Mini-Colloquium
F20 501 First-year Mini-Colloquium
W20 260 Honors Physics II (with Camille Avestruz)
W19 260 Honors Physics II (with Tom Finzell)
F18 260 Honors Physics II
W18 240 General Physics II (with D. Winn)
F17 240 General Physics II (with D. Winn and D. Huterer)
F16 240 General Physics II (with D. Winn)
W16 240 General Physics II (with D. Winn, G. Tarlé)
F15 240 General Physics II (with D. Winn)
S15 240 General Physics II (with D. Winn)
W15 240 General Physics II (with D. Winn)
F14 240 General Physics II (with D. Winn)
S14 240 General Physics II (with D. Winn)
F13 240 General Physics II (with D. Winn)
S13 140 General Physics I (with W. Lau)
W12 235 Physics for the Life Sciences II

F11 438 Electromagnetic Radiation
F10 126 General Physics: Electricity and Light (with W. Lau)
F09 126 General Physics: Electricity and Light: LEC
S09 126 General Physics: Electricity and Light (with G. Tarlé)
F08 390 Introduction to Modern Physics: LEC
S08 126 General Physics: Electricity and Light (with G. Tarlé)
W08 261 Honors Electricity and Magnetism Laboratory
S07 126 General Physics: Electricity and Light (with G. Tarlé)
W07 261 Honors Electricity and Magnetism Laboratory
F06 993 GSI Training
F06 128 Elementary Lab
S06 126 General Physics: Electricity and Light (with G. Tarlé)
W06 128 Elementary Lab
F05 241 Elementary Lab II
F05 993 GSI Training
S05 126 General Physics: Electricity and Light (with G. Tarlé)
W04 126 General Physics: Electricity and Light: LEC(2)
F03 405 Intermediate Electricity and Magnetism: LEC
W03 405 Intermediate Electricity and Magnetism: LEC
F02 126 General Physics: Electricity and Light: LEC
W02 125 General Physics: Mechanics and Sound: LEC(2)
F01 390 Introduction to Modern Physics: LEC
W01 390 Introduction to Modern Physics: LEC
F00 125 General Physics: Mechanics and Sound: LEC(2)
W00 405 Intermediate Electricity and Magnetism: LEC
F99 125 General Physics: Mechanics and Sound: DIS(3)
W99 405 Intermediate Electricity and Magnetism: LEC
W98 171.302 Introduction to Electromagnetic Theory II (JHU)
F97 171.301 Introduction to Electromagnetic Theory I (JHU)
W97 171.302 Introduction to Electromagnetic Theory II (JHU)
F96 171.301 Introduction to Electromagnetic Theory I (JHU)
W96 171.114 Introduction to Frontier Physics (JHU)
F94 125 General Physics: Mechanics, Sound, and Heat: DIS(3)

Independent Study Students

UROP	F24	Izry Garcia-Medina, Alex Zvoch
REU	S24	Tessa Frincke (University of Toledo)
415	F23-W24	Sarah Feldman
415	W23	Elizaveta Gavrilova, Aidan Meador-Woodruff, Sanil Mittal, Ryan Walker, Alex Wingate
415	W23	Aaron Williams
	S22	Aimee Dubuque
415	W22-	Jichi Wang
415	S21-W22	Jiaming Pan
UROP	F20-F21	Christiano Beach
415	F19-W22	Gabe Gowman
415	S19-F22	Matthew Porter
415	S19-W23	Anna Simpson
415	S19-W20	Elanor Chang
HS	S19-F20	Anirudh Cowgali
REU	S17	Kevin Napier (Siena College)
415	F16-W19	Kyle Franson

415	S16-W18	Lynus Zullo
REU	S16	Colin Scheibner (St. Olaf College)
UROP	F15-W16	Zachary Felker
415	F15-W19	Tali Khain
HS	S15	Tali Khain
REU	S15	Zachary Elledge (Wayne State)
415	W15	Noah Swimmer
415	F14-W15	Jacob Goodman
UROP	F14-W15	Chris LIttle
REU	S14	Zhilu Zhang (Carleton College)
REU	S14	Ross Jennings (Carleton College)
415	S12-W13	Mykola Murskyj
REU	S12	Cody Carr (Kalamazoo College)
415	F11-W12	Kevin Smith
415	W11-W12	Aaron White
415	W11	Christine Harris
415	F10-W11	Andy Cisler
—	F09-W10	Michael Bell
—	W10	Steve Bokshan
415	F08-W09	Michael Bell (with David Baker, Dept. of Philosophy)
415	F08	Jonathan Baur
—	F07-W10	Matt Weis
REU	S07	Jeff Kritzman
415	W07	Athena Eyster
415	F06	Michelle Love
REU	S06	David Adams
REU	S06	Michelle Love
UROP	S05	Sonya Nikolaidis
496	F02,W03	Eric Thrane (senior thesis)
	S02	David Baker, Eric Thrane
REU	S01	David Baker, Eric Thrane
496	F00,W01	Daniel Berebitsky (senior thesis): 2001 Williams Prize
415	F00,W01	David Baker, Eric Thrane
REU	S00	Daniel Berebitsky
415	W00	David Baker, Eric Thrane
515	F99	Joseph Kuah
REU	S99	Deborah Weber (University of Colorado)

Other Teaching Information

2010-11 Whitaker Stage I Award: Institutionalizing Assessment as Part of Introductory Course Reform in Physics(with T. McKay, G. Evrard), University of Michigan, $15,000.

2009-10 Featured in campus-wide posters encouraging students to participate in new online teaching evaluations

2006-07 Whittaker II Award: Renewing Introductory Physics Labs: Aligning the Curriculum and Improving Student Understanding, $15,000.

2004 "About Face: The Importance of Seeing the Lecturer in Multimedia Presentations," with H. Burn and E. Dey (Center for the Study of Higher and Postsecondary Education), paper presented at the Annual Conference for the Association of the Study of Higher Education (ASHE), November 14-16, 2004, Kansas City, MO.

2004 Seminar on "Engaging Students in Large Lectures through Peer Instruction," presented at CRLT Enriching Scholarship opening plenary session

2003	Seminar on "Instructional Technology in the Classroom" for CRLT Workshop on Preparing Future Faculty
2002-04	School Coordinator and Head Coach, Washtenaw Elementary Science Olympiad, Allen Elementary School, Ann Arbor
2003,04	Taught course on "Rollercoaster Physics" for Michigan Math and Science Scholars summer program for high school students
2002	Received $896 grant from LS&A Information Technology Committee for "Development of Web-Based Reading Quizzes for Introductory Physics"
2001	Undergraduate Daniel Berebitsky received the Williams Prize for his senior thesis written under my supervision and entitled "Search for Large Extra Dimensions Using High Mass Diphotons with the Collider Detector at Fermilab"
1999	Developed web-based content for upper-division Electricity and Magnetism course and integrated it with the lecture format. Presented this work in a talk at the AAPT Summer Meeting, San Antonio, TX, August 1999

Department, College, and University Service and Committees

2024-25	Chair, ProQuest Distinguished Dissertation Award Committee
2022	Schmidt Futures AI in Science fellowship reviewer
2021	LSA Reboot and Re-Imagine: Faculty Affairs
2018-21	UM STEM Scholarship Nomination Committee
2017-18	Chair, Launch committee for Assistant Professor of Economics Michael Mueller-Smith
2016-17	Chair, Launch committee for Assistant Professor of Sociology Fabian Pfeffer
2016-	Chair, Physics Dept. Undergraduate Concerns Committee
2014-16	Chair, Physics Dept. Editorial Board
2014	Major Review Committee for Lecturer Dave Winn
2014-15	Chair, Tenure Review Panel for Assistant Professor Jeff McMahon
2014-15	Chair, LSA Nominating Committee
2014	Co-chair, organizing committee for F14 LSA Theme Semester: Sport and the University
2013-15	Rackham Distinguished Dissertation Committee
2013-14	LSA Dean Search Advisory Committee
2012-	Faculty Mentor for Assistant Prof. Tom Schwarz
2012	Tenure Review Panel for Assistant Professor Kathryn Zurek
2012	Third Year Review Committee for Assistant Prof. Jeff McMahon
2011	Provost's Advisory Committee on Changes to Tenure Probationary Periods
2011	Panelist, "Teaching Large Lecture Courses," LSA Teaching Academy
2011	Provost's Long-Term Strategic Vision Committee
2010	Vocal Training with the Royal Shakespeare Company voice trainer Lynn Darnley
2010	Panelist, "The Tenure Process," Workshop on Preparing Future Faculty
2010	LSA ad-hoc faculty grievance review panel
2010, 2012	Invited speaker to a group of 25 visiting Chinese university presidents. Topic: Academic Freedom
2010-13	Faculty Mentor for Assistant Prof. Kathryn Zurek
2009-15	Faculty Mentor for Assistant Prof. Jeff McMahon
2009-12	Executive Committee, College of Literature, Science, and the Arts
2009-12	Budget Advisory Committee, College of Literature, Science, and the Arts
2009-10	Panelist, "Engaging U of M Students," LSA Teaching Academy
2008-10	Provost's Online Teaching Evaluations Steering Committee
2008-09	Faculty Search Committee, Department of Physics (hired Henriette Elvang, Jeff McMahon)
2008-09	Physics Concentration Advisor
2007-	Winston Churchill Scholarships, UM Campus Representative
2007-10	LS&A Academic Judiciary Committee
2007-	Undergraduate Concerns Committee, Dept. of Physics

2007-	Curriculum Committee, Dept. of Physics
2007-08	Thurnau Professorship Selection Advisory Committee
2006-07	Executive Committee, Department of Physics
2006-07	LS&A Nominating Committee
2005-07	Weidenbeck Prize Committee
2005-06	Outreach Committee
2005-06	LS&A Nominating Committee
2005-	Faculty Supervisor, Introductory Electromagnetism/Optics Laboratories
2002-05	Supervisor, Physics Department Office of Computing Services
2000- 2006	Chair, Physics Department Computing Committee
2002-	Campus Day faculty panel participant
2001- 2003	Saturday Seminars for Outstanding High School Juniors
2003-04	Coordinated HEP group effort to recruit Dr. Bonnie Fleming as ADVANCE hire
2003-04	Promotion committee for Prof. James Wells
2001-04	Saturday Morning Physics (Fall series organizer)
2001-04	Instructional Technology Oversight Committee
2002-03	LS&A Nominating Committee
2001-02	High Energy Theory faculty search committee (hired J. Wells)
2000-03	Graduate Admissions Committee
1999-2000	Society of Physics Students faculty advisor
1998-2000	High Energy Physics / Astrophysics weekly seminar organizer
1997-98	Computing Committee (Johns Hopkins)
1997-98	Faculty search committee, experimental high energy physics (Johns Hopkins)
1996-98	Electronics Shop faculty supervisor (Johns Hopkins)

Outreach and Community Service Activities

2023	Public lecture at Cuyahoga Astronomical Association, 9/11/23
2020	Astronomy on Tap, Ann Arbor, 2/11/20
2018	Public lecture at Grand Rapids Amateur Astronomical Society, 3/15/18
2017	Public lecture at Kalamazoo Astronomical Society, 5/5/17
2016-17	Science Communication Fellow, University of Michigan Natural History Museum
2016	Public lecture at Warren Astronomical Society, Bloomfield Hills, MI, 2/1/16
2015	"New Worlds, New Horizons," public lecture at NEXT Community Center, Birmingham, MI, 7/9/15
2014-15	Blog entries on darkenergydetectives.org
2011	Appearance on the "365 Days of Astronomy" podcast to discuss the Dark Energy Survey
2011,13	Informal talks on dark energy and the accelerating universe, Ann Arbor Science and Skeptics
2011	Faculty advisor, University of Michigan MRun running club
2010-12	FIRST Robotics team mentor, Skyline High School Team 3322
2010	Ann Arbor YMCA Strong Kids Campaign volunteer
2002-4	Science Olympiad head coach, Allen Elementary School, Ann Arbor

Selected Media Coverage

2024	Live TV appearance on WDIV Detroit to discuss the "minimoon" 2024 PD5 and comet C/2023 A3 (9/30/2024)
2024	Live TV appearance on WDIV Detroit to discuss the August 19, 2024 "Blue Supermoon"
2024	Live radio interview about the upcoming total eclipse with Mike Campbell, WWJ Detroit, March 2, 2024
2024	U-M astronomer: Get to the path of April's total solar eclipse, UM news release, Feb. 29, 2024

2023 NASA Astronaut Shares his Experience in Space with UM Physics Class, Detroit Free Press, October 8, 2023

2023 Live from the International Space Station, It's Saturday Morning Physics, University of Michigan news release, Jan. 6, 2023

2022 Appearance in Arte TV (France) documentary "Searching for Planet 9", by Florence Tran

2022 Where did Earth's Trojans go? Ask the moon, Sky and Telescope, May 5, 2022

2021 Scientific Sense podcast (The Planet 9 Debate), April 17, 2021

2021 "Signs of a hidden Planet Nine in the solar system may not hold up" *Science News*, Feb. 22, 2021

2021 "No sign of Planet Nine? Trail runs cold for hypothetical world", *Nature*, Feb. 19, 2021

2021 "Is Eight Enough? New Study Throws Planet Nine into Doubt, but Can't Kill It", *Forbes*, Feb. 17, 2021

2021 "Planet Nine may NOT exist after all: Unusual orbits detected in the outer solar system may be an ILLUSION, study claims," *Daily Mail*, Feb. 16, 2021

2021 "Claim for giant 'Planet Nine' at Solar System's edge takes a hit", *Science*, Feb. 15, 2021

2020 "When Everything Changed", Michigan Alumnus Magazine, Summer 2020

2020 "Mapping the Universe", LSA Magazine, Spring 2020

2019 "Cosmic Trip", profile in the *Ann Arbor Observer*, July 2019

2018 "Planet Nine, Show Thyself", The Atlantic, 5/22/2018

2018 "Planet Nine Evidence Grows after Scientists Find Distant Object with Extraordinary Orbit", Newsweek, 5/16/18

2018 "A New World's Extraordinary Orbit Points to Planet Nine" Quanta Magazine, 5/15/18

2018 "Looking for Planet Nine, Scientists Gaze into the Abyss", Scientific American, 3/22/18

2018 "Small Michigan Meteor Packed a Seismic Punch, Scientists Say", space.com, 1/18/2018

2018 The Michigan Meteor, LSA Instagram, 1/18/2018

2017 "In Search of the Ninth Planet", phys.org, 10/17/2017

2017 "ALMA investigates "DeeDee," a distant, dim member of the solar system", NRAO news release, 4/12/2017

2016 "A Friend for Pluto: Scientists Find New Dwarf Planet in our Solar System", feature of National Public Radio's Morning Edition, 10/11/2016

2016 "Pluto gets a buddy: A new dwarf planet is discovered in our solar system", Washington Post, 10/11/2016

2016 "New Dwarf Planet Found in Our Solar System", Scientific American, 10/12/2017

2016 "New Object Vies for Kuiper Belt Record", Sky and Telescope, 10/11/2016

2016 "We are closing in on possible whereabouts of Planet Nine", New Scientist, 4/20/2016

2016 "Mysterious Gravitational Tug on Saturn May Help Find Planet Nine", Scientific American, 2/5/2016

2015 "Dark Energy Survey Begins to Reveal New Trans-Neptunian Objects", universetoday.com, 1/7/2015