Sarah Eno

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Physics

PERSONAL INFORMATION

Educational Background

- 1990, Ph.D., Physics, University of Rochester
- 1986, M.A., Physics, University of Rochester
- 1984, B.A., Gettysburg College

Academic Appointments at UMD

- 2005, Professor of Physics
- 1999 - 2005, Associate Professor of Physics
- 1993 - 1999, Assistant Professor of Physics

Administrative Appointments at UMD

- 2012 - 2014, Associate Chair for Graduate Education, Physics Department

Other Employment

- 1992 - 1993, Research Scientist, Enrico Fermi Institute, University of Chicago
- 1989 - 1992, Research Associate, Enrico Fermi Institute, University of Chicago

RESEARCH, SCHOLARLY AND CREATIVE ACTIVITIES

Chapters

Books

- 1998, M. Carena, R. L. Culbertson, S. Eno, H. J. Frisch, and S. Mrenna, "The Search for Supersymmetry at the Tevatron Collider"*, Perspectives on Supersymmetry*, Gordon L. Kane, Editor
- 1998, S. Eno, "On the Importance of Mentoring for New Faculty Members"*, Essays on Quality Learning*, Steven Selden, Editor
- 1996, H. Aihara., J. L. Siegrist, S. Eno, N. Hadley and A Skuja, "Experimental Issues At Hadron Colliders"*, Electroweak Symmetry Breaking and New Physics at the TeV*

Scale, T.L. Barklow, S. Dawson, H.E.Haber, J.L. Siegrist, Editors, 650-688, (1996) (Advanced Series on Directions in High Energy Physics. 16)

Refereed Journals

- 2021, lead author HCAL section of CMS Run 3 detector paper "The evolution and performance of the CMS detector at the CERN LHC" (to be submitted 2022)
- 2021, Particle Data Group. Co-lead author (with M. Hamel) of "Organic Scintillators" in "Particle Detectors at Accelerators", https://pdg.lbl.gov/2021/reviews/contents_sports.html
- 2021, "Measurements of the electroweak diboson production cross sections in proton-proton collisions at sqrt(s)=5.02 TeV using leptonc decays", Phys. Rev. Lett. 127 (2021) 191801
- 2021, A. Belloni et al, Test beam study of SiPM-on-Tile configurations, arxiv.org/abs/2102.08499, JINST 16 (2021) P07022
- 2020, M.T. Lucchini et al., New perspectives on segmented crystal calorimeters for future colliders, JINST 15, P11005
- 2020, A.M. Sirunyan et al, Calibration of the CMS hadron calorimeters using proton-proton collision data at sqrt(s)=13 TeV, JINST 15, P05002
- 2020, A.M. Sirunyan et al., Measurements with silicon photomultipliers of dose-rate effects in the radiation damage of plastic scintillator tiles in the CMS hadron endcap calorimeter, JINST 15, P06009
- 2019, A.M. Sirunyan et al., Search for new particles decaying to a jet and an emerging jet, Journal of High Energy Physics, 2019, 179, direct contribution
- 2016, M. Amouzegar et al., Liquid scintillator tiles for calorimetry, Journal of Instrumentation, Volume 11, November 2016, direct contribution
- 2016, V. Khachatryan et al., Dose rate effects in the radiation damage of the plastic scintillators of the CMS hadron endcap calorimeter, Journal of Instrumentation, Volume 11, Oct 2016, direct contribution.
- 2015, CMS collaboration, Performance of the missing transverse energy reconstruction by the CMS experiment in √s = 8 TeV, Journal of Instrumentation, 10, 02, P02006, direct contribution
- 2015, CMS collaboration, Search for new resonances decaying via WZ to leptons in proton-proton collisions at √s=8 TeV, Phys. Lett. B740: 83-104 (2015), arXiv:1407.3476. CMS-EXO-12-025. CERN-PH-EP-2014-160, editorial contribution/internal reviewer
- 2015, CMS collaboration, Search for Resonances in the Dilepton Mass Distribution in pp collisions at sqrt(s) = 8 TeV, JHEP 04 *2015) 025, editorial contribution/internal reviewer
- 2015, CMS collaboration, Search for leptonic decays of W' bosons in pp collisions at sqrt(s) = 8 TeV, Phys. Rev. D91 (2015) 092005, editorial contribution/internal reviewer
- 2014, D0 collaboration, Measurement of the W boson mass with the D0 detector, Phys.Rev., D89(1):012005, 2014, direct contribution
- 2014, CMS collaboration, Search for pair production of third-generation scalar leptoquarks and top squarks in proton-proton collisions at sqrt(s) = 8 TeV, Phys.Lett., 739:229, 2014, direct contribution
- 2014, CMS collaboration, Search for excited quarks in the gamma + jet final state in proton-proton collisions at sqrt(s) = 8 TeV, Phys.Lett., B738:274-293, 2014, Editorial contribution/internal reviewer
- 2014, CMS collaboration, Search for W' to tb decays in the lepton + jets final state in pp collisions at √s = 7 TeV, JHEP, 1405:108, 2014, editorial contribution/internal reviewer

- 2013, CMS collaboration, Search for pair production of third-generation leptoquarks and top squarks in pp collisions at √s = 7 TeV, Phys.Rev.Lett., 110:081801, 2013, direct contribution
- 2013, CMS collaboration, Search for a W ’ boson decaying to a bottom quark and a top quark in pp collisions at √s = 7 TeV, Phys.Lett., B718:1229–1251, 2013, editorial contribution/internal reviewer
- 2013, CMS collaboration, Search for excited leptons in pp collisions at √s = 7 TeV, Phys.Lett., B720:309–329, 2013, editorial contribution/internal reviewer
- 2011, CMS collaboration, Search for Pair Production of First-Generation Scalar Leptoquarks in pp Collisions at √s = 7 TeV, Phys.Rev.Lett., 106:201802, 2011, direct contribution
- 2011, CMS collaboration, Search for Stopped Gluinos in pp collisions at √s = 7 TeV, Phys.Rev.Lett., 106:011801, 2011, direct contribution
- 2011, CMS collaboration, A search for excited leptons in pp Collisions at √s = 7 TeV, Phys.Lett., B704:143–162, 2011, editorial contribution/internal reviewer
- 2011, CMS collaboration, Search for New Physics with Jets and Missing Transverse Momentum in pp collisions at √s = 7 TeV, JHEP, 1108:155, 2011, editorial contribution/internal reviewer
- 2011, CMS collaboration, Search for Supersymmetry in pp Collisions at 7 TeV in Events with Jets and Missing Transverse Energy, Phys.Lett., B698:196–218, 2011, editorial contribution/internal reviewer
- 2011, CMS collaboration, Missing transverse energy performance of the CMS detector, JINST, 6:P09001, 2011, direct contribution
- 2011, CMS collaboration, Search for First Generation Scalar Leptoquarks in the evjj channel in pp collisions at √s = 7 TeV, Phys.Lett., B703:246–266, 2011, direct contribution
- 2010, D0 collaboration, Measurement of the normalized Z/γ∗− > μ+μ− transverse momentum distribution in $p\bar{p}$ collisions at √s = 1.96 TeV, Phys.Lett., B693:522–530, 2010, Editorial contribution/internal reviewer
- 2010, CMS collaboration, Identification and Filtering of Uncharacteristic Noise in the CMS Hadron Calorimeter, JINST, 5:T03014, 2010, direct contribution
- 2010, CMS collaboration, Commissioning of the CMS High-Level Trigger with Cosmic Rays, JINST, 5:T03005, 2010, editorial contribution/internal reviewer
- 2009, D0 collaboration, Measurement of the W boson mass, Phys.Rev.Lett., 103:141801, 2009, direct contribution
- 2009, D0 collaboration, A novel method for modeling the recoil in W boson events at hadron collider, Nucl.Instrum.Meth., A609:250–262, 2009, direct contribution
- 2009, D0 collaboration, Direct measurement of the W boson width, Phys.Rev.Lett., 103:231802, 2009, direct contribution
- 2009, D0 collaboration, Measurement of trilinear gauge boson coupling, Phys.Rev., D80:053012, 2009, editorial contribution/internal reviewer
- 2007, D0 collaboration, Measurement of the shape of the boson rapidity distribution for $p\bar{p}$ → Z/gamma∗ → e+e− + X events produced at √s of 1.96-TeV, Phys.Rev., D76:012003, 2007, direct contribution

- 2007, CMS collaboration, CMS Physics Technical Design Report, Volume II: Physics Performance, Journal of Physics G: Nuclear and Particle Physic, 34(6):995, 2007, directcontribution
- 2006, CMS collaboration, The CMS high level trigger, Eur.Phys.J., C46:605–667, 2006, direct contribution
- 2004, D0 collaboration and CMS collaboration, Combination of CDF and DØ results on W boson mass and width, Phys.Rev., D70:092008, 2004 direct contribution
- 2000, D0 collaboration, Extraction of the width of the W boson from measurements of $\sigma(p\bar{p} \rightarrow W + X) \times B(W \rightarrow e\nu)$ and $\sigma(p\bar{p} \rightarrow Z + X) \times B(Z \rightarrow ee)$ and their ratio, Phys.Rev., D61:072001, 2000, direct contribution
- 1999, D0 collaboration, The dijet mass spectrum and a search for quark compositeness in $p\bar{p}$ collisions at $\sqrt{s} = 1.8$ TeV, Phys.Rev.Lett., 82:2457–2462, 1999, editorial contribution/internal reviewer
- 1999, D0 collaboration, Search for squarks and gluinos in single-photon events with jets and large missing transverse energy in $p\bar{p}$ collisions at $\sqrt{s} = 1.8$ TeV, Phys.Rev.Lett., 82:29–34, 1999,editorial contribution/internal reviewer
- 1999, D0 collaboration, Search for squarks and gluinos in events containing jets and a large imbalance in transverse energy, Phys.Rev.Lett., 83:4937–4942, 1999, editorial contribution/internal reviewer
- 1999, D0 collaboration, Search for R−parity violating supersymmetry in the dielectron channel, Phys.Rev.Lett., 83:4476–4481, 1999, editorial contribution/internal reviewer
- 1999, Marcela S. Carena, R.L. Culbertson, S. Eno, Henry J. Frisch, and S. Mrenna, The search for supersymmetry at the Tevatron collider, Rev.Mod.Phys., 71:937–981, 1999, direct contribution
- 1998, D0 collaboration, Measurement of the shape of the transverse momentum distribution of W bosons produced in $p\bar{p}$ collisions at $\sqrt{s} = 1.8$ TeV, Phys.Rev.Lett., 80:5498–5503, 1998, editorial contribution/internal reviewer
- 1998, D0 collaboration, Search for charge 1/3 third generation leptoquarks in $p\bar{p}$ collisions at $\sqrt{s} = 1.8$TeV, Phys.Rev.Lett., 81:38–43, 1998, editorial contribution/internal reviewer
- 1995, CDF Collaboration, Measurement of the W boson mass, Phys.Rev.Lett., 75:11–16, 1995, Direct contribution
- 1995, CDF Collaboration, Measurement of the W boson mass, Phys.Rev., D52:4784–4827, 1995, Direct contribution
- 1994, CDF Collaboration, Measurement of the ratio $\sigma B(W \rightarrow e\nu)/\sigma B(Z0 \rightarrow e+e-)$ in $p\bar{p}$ collisions at $\sqrt{s} = 1.8$ TeV, Phys.Rev.Lett., :220–224, 1994, editorial contribution/internal reviewerr
- 1992, K. Ueno, H.W. Zheng, C. Back, D. Blanis, S. Eno, et al., The Design of the AMY central drift chamber and performance in a 3-T magnetic field, Nucl.Instrum.Meth., A323:601–610,1992, supporting contribution
- 1992, F. Abe et al., The dijet angular distribution in $p\bar{p}$ collisions at $\sqrt{s} = 1.8$ TeV, Phys.Rev.Lett., 9:2896–2900, 1992, editorial contribution/internal reviewer

- 1992, F. Abe et al., A Measurement of the production and muonic decay rate of W and Z bosons in $p\bar{p}$ collisions at $\sqrt{s}$ = 1.8 TeV, Phys.Rev.Lett., 9:28–32, 1992, direct contribution
- 1991, F. Abe et al., Search for W' → eν and W' → μν in $p\bar{p}$ collisions at $\sqrt{s}$ = 1.8 TeV, Phys.Rev.Lett., 67:2609–2613, 1991, editorial contribution/internal reviewer
- 1989, S. Eno et al., Search for a Fourth Generation Charge -1/3 Quark, Phys.Rev.Lett., 63:1910, 1989, direct contribution
- 1989, Y. Fujii, K. Abe, S. Eno, D.H. Han, H. Harada, et al., An X-Ray Detector as a Detector for Electron Identification, Nucl.Instrum.Meth., A283:665–672, 1989, direct contribution
- 1988, H. Harada, S. Eno, R. Poling, N.M. Shaw, E.H. Thorndike, et al., Electron Identification using Synchrotron Radiation, Nucl.Instrum.Meth., A265:141–149, 1988, direct contribution

Published Conference Proceedings

Non-Refereed Conference Proceedings

- 2014, S. Eno, Searches for Dark Matter and Extra Dimensions at the LHC, Proceedings of the 49th Recontres de Moriond, "2014 QCD and High Energy Interactions", E. Auge, J. Dumarchex and J.T.T. Van, Editors, (2014)
- 2003, S. Eno, Updated Measurements of the W Mass and Width from the Tevatron, Proceedings of the "International Conference on High Energy Physics, conference
- 1999, S. Eno, Measurement of the Production and Decay Propeties of Gauge Bosons from the Tevatron, Proceedings of the "Results and Perspective in Particle Physics, conference, M. Greco, editor, INFN Laboratori Nationali di Frascati SIS Ufficio Pubbicazioni
- 1997, S. Eno and H. Baer, Searching for Contact Interactions and Exotic new Particles at the VLHC, Proceedings of the VLHC Worksship
- 1997, S. Eno, Search for New Phenomena at D0, Proceedings of Beyond the Desert 1997:Acelerator and NonAccelerator Approaches, Institute of Physics Publishing, H. V. Klapdor-Kleingrothaus and H. Pas, editors
- 1996, S. Eno, Non-SUSY Particle Searches at D0, Proceedings of the 28th International Conference on High Energy Physics, World Scientific, Z. Ajduk and A. K. Wroblewski, editors
- 1996, S. Eno, Probing the Standard Model at the Tevatron, Proceedings of the 14th International Conference on Particles and Nuclei, World Scientific, Carl E. Carlson and John J. Domingo, editors
- 1995, S. Eno, D0 Search for New Phenomena, Proceedings of the XXXth Recontres De Moriond, J. Tran Thanh Van, editor, Editions Frontiers
- 1994, S. Eno, The D0 Upgrade Trigger, Proceedings of the 8th Meeting of the Division of Particles and Fields of the American Physical Society, World Scientific Singapore, Sally Seidel, editor

- 1989, S. Eno, Recent Results from the AMY Experiment, Proceedings of the Fourth Lake Louise Winter Institute, "Frontiers in Physics From Colliders to Cosmology, World Scientific, Singapore, . Astbury, B. A. Campbell, W. Israel, A. N. Kamal, and F. C. Khanna, Editors

Conferences, Workshops and Talks

Invited Talks

- 2022 "Publishing your work", CMS "Data Analysis School", FNAL
- 2021, "letters of recommendation", CMS collaboration workshop on management training
- 2020, Crystal dual readout calorimetry for electron positron colliders, America's workshop on linear colliders (virtual)
- 2020, Calorimeters for high energy physics, 2020 hadron collider physics summer school, (virtual)
- 2020, Crystal dual readout electromagnetic calorimetry for lepton colliders, International workshop on the CEPC (virtual)
- 2020, Crystal dual readout calorimetry for future lepton collider, U. Maryland high energy physics seminar
- 2020, Collider Physics, Calorimeters, and the CMS HGCAL, First Year Intensive Research experience (virtual)
- 2020, Experimental Particle Physics, Foundations and Frontiers seminar U. Maryland,
- 2020, Dual Readout calorimetry for electron positron colliders, Snowmass instrumentation frontier meeting (virtual)
- 2020, Implementation of "Team-Up" recommendations at U. Maryland, delta phi "Teamp-up repot: the time is now – charting a course to 2030" webinar, APS
- 2020, Is there an electron positron collider in your future", LPC topic of interest seminar series, FNAL
- 2019, Radiation damage in plastic scintillators, HGCAL workshop, CERN
- 2019, Crystal Calorimetry, 2019 International Workshop on the High Energy Circular Electron Positron Collider, IHEP, Beijing
- 2019, Highlights and future perspective of the CEPC detector, 2019 International Workshop on the High Energy Circular Electron Positron Collider, IHEP, Beijing
- 2019, Alternative Calorimetry for e+e- colliders, Chicago Workshop on the Circular Electron Positron Collider, U. Chicago
- 2019, Future Colliders, U. Maryland seminar
- 2018, The HL-LHC Upgrade and Physics Program, IASHEP 2019, Hong Kong
- 2018, Segmented Crystal EM Calorimetry, IASHEP 2019, Hong Kong
- 2018, CMS publication procedure, FNAL
- 2017, Status of Searches for New Physics by CMS and ATLAS, 45th SLAC Summer Institute.
- 2017, More than you should have to know about plastic scintillators, Fermi National Accelerator Lab
- 2016, More than you should have to know about plastic scintillators, Rutgers
- 2016, Plastic scintillators in detectors for high energy physics, NIST
- 2015, What is a Higgs and how do you discover one?, Villanova University
- 2014, LPC turns 10: In the Beginning, Fermi National Accelerator Lab
- 2014, Searches for Dark Matter and Extra Dimensions at the LHC, Recontres de Moriond, QCD
- 2012, The LHC: Results from the Energy Frontier, U. Michigan

- 2011, SUSY Results from CMS, LHC at BNL Workshop, Brookhaven National Lab
- 2010, Physics with CMS - the Next Two Years, CMS January School lecture, Fermi National Accelerator Lab
- 2010, Missing-Transverse-Energy-Based Searches at Colliders: Gateway to Dark Matter in the Laboratory, APS April meeting, Washington, D.C.
- 2010, Report of the HEPAP Informal Working Group on the HEP University Program, APS DPF, Washington, D.C, town hall meeting
- 2010, Status of (Undergraduate Research at) the Large Hadron Collider, Gordon Conference, Mount Holyoke, MA
- 2009, LHC Status and SUSY Search Preparation, "Shedding Light on Dark Matter" conference, U. Maryland
- 2009, Road to Discovery, joint CERN/FNAL Hadron Collider Physics school, CERN, three invited lectures
- 2009, Report of the HEPAP Informal Working Group on the HEP University Program, HEPAP meeting
- 2009, Searches for Exotic Particles with the CMS Detector, University of Pennsylvania
- 2009, The Standard Model at the Tevatron, Tata Institute, Mumbai India, four invited lectures
- 2008, The LHC adventure, Johns Hopkins U.
- 2006, Precision electroweak physics at the Tevatron, Yale
- 2006, Drell Yan interactions, Summer School lecture, CTEQ school, Rhodes Greece
- 2005, Results from the D0 experiment, Ohio State University
- 2005, Studying the electroweak force, Foundations and Frontiers Series at UMD
- 2004, New (QCD) results from the tevatron, D.I.S. Conference, Slovakia
- 2002, W mass and width at the Tevatron, Intl. Conf. on HEP, Amsterdam, Netherlands
- 1999, Results, Fermilab, Batavia, IL
- 1999, Measurements of the production and decay properties of gauge bosons from the Tevatron, Les Recontres de physique de la vallee d'aoste, LaThuile, Aosta Valley, Italy
- 1998, Searches for New Phenomena at the Tevatron, APS spring meeting, Columbus OH
- 1998, The Physics of the Very Large Hadron Collider, APS spring meeting, Columbus OH
- 1998, The D0 and CDF Run II Detectors, Fermilab Run II Higgs and SUSY Workshop, Fermilab, Batavia, Il
- 1998, Mentoring, APS New Faculty Workshop, Seminar
- 1997, D0 search for new phenomena, Beyond the Desert, Tegernsee, Germany
- 1997, D0 search for leptoquarks, Max Planck Institute, Seminar
- 1997, S. Eno, J. Layman, PHYS115, University of Maryland, Seminar
- 1997, Searches for leptoquarks, Deutsch electron-synchrotron, DESY
- 1997, Mentoring, APS New Faculty Workshop
- 1996, Probing the Standard Model at the Tevatron, 14th Intl. Conf. on Particles and Nuclei, Williamburg, Virginia
- 1996, Non-SUSY particle searches at D0, 28th Int. Conf. on HEP, New Mexico, Invited Talk
- 1996, Results from the D0 experiment, Johns Hopkins U.

- 1996, Results from the CDF experiment, Cornell
- 1995, D0 search for new phenomena, XXXth Recontres De Moriond
- 1994, The D0 Upgrade Trigger, APS/DPF
- 1992, Recent Results from the CDF experiment, Aspen Winter Conf.
- 1989, Recent Results from the AMY experiment, Lake Louise Winter Inst.

Posters

- 2016, Radiation damage to scintillators in the CMS experiment, ICHEP, Chicago

Colloquia

- 2016, What do we know about the Higgs boson?, Catholic University
- 2014, How many physicisits does it take to discover a new particle: the Higgs boson and big science, Distinguished Scholar-Teacher lecture, U. Maryland
- 2013, What is a Higgs and How do you find one?, Rowan University
- 2013, What is a Higgs and how do you discover one?, Goddard Astrophysics Colloquium
- 2013, Results from the energy frontier, Princeton University
- 2012, The LHC: Results from the Energy Frontier, Colloquium at the Laboratory for Physical Sciences, University of Maryland
- 2011, The LHC: Results from the Energy Frontier, Goddard Space Flight Center
- 2010, The Startup of the Large Hadron Collider, Fermi National Accelerator Lab
- 2010, The Startup of the Large Hadron Collider, U. Maryland
- 2010, The Startup of the Large Hadron Collider, Rutgers
- 2010, CMS Results from the 2009-2010 Running, SLAC, California, invited Colloquium, 6 Apr. 2010
- 2010, The LHC: Results from the Energy Frontier, Texas A&M
- 2009, Searching for New Particles at the LHC, Boston University
- 2009, The FNAL LHC Physics Center, Wine & Cheese Colloquium, FNAL
- 2009, The Startup of the Large Hadron Collider, Tata Institute, India
- 2008, The LHC adventure, Colloquium, Goddard Space Flight Center
- 2006, New Results from D0 on the W width, charge asymmetry and on gauge couplings, “Wine and Cheese” talk at FNAL
- 2005, The LHC adventure, U. Virginia
- 2004, Precision electroweak physics at the Tevatron, Colloquium, U. Maryland
- 1998, New particle searches in high energy proton-antiproton collisions, U. Maryland
- 1997, New particle searches in high energy proton-antiproton collisions, Colloquium, U. Maryland
- 1997, Results from the D0 experiment, Colloquium, Brown University

Professional and Extension Publications

- 2007, CMS collaboration, Search for New High-Mass Resonances Decaying to Muon Pairs in the CMS Experiment, Technical Report, CMS-PAS-SBM-07-002, CERN, Geneva, 2007. editorial contribution/internal reviewer
- 2008, CMS collaboration, Discovery Potential of W' → eν at CMS, Technical Report, CMS-PAS-EXO-08-004, CERN, 2008. Geneva, Jul 2008. editorial contribution/internal reviewer
- 2009, CMS collaboration, Search for Mono-Jet Final States from ADD Extra Dimensions, Technical Report, CMS-PAS-EXO-08-011, CERN, Geneva, Aug 2009, editorial contribution/internal reviewer
- 2009, CMS collaboration, Search for high mass resonance production decaying into an electron pair in the CMS experiment, Technical Report, CMS-PAS-EXO-08-001, CERN, Geneva, Feb 2009, editorial contribution/internal reviewer
- 2009, CMS collaboration, Searching for Stopped Gluinos during Beam-off Periods at CMS, Technical Report, CMS-PAS-EXO-09-001, CERN, Geneva, Jul 2009, direct contribution
- 2009, CMS collaboration, Search for Pair Production of First Generation Scalar Leptoquarks at the CMS Experiment, Technical Report, CMS-PAS-EXO-08-010, CERN, Geneva, Jul 2009, direct contribution
- 2010, CMS collaboration, First Results on the Search for Stopped Gluinos in pp collisions at sqrt s = 7 TeV, Technical Report, CMS-PAS-EXO-10-003, CERN, Geneva, 2010, direct contribution
- 2010, CMS collaboration, Search for Pair Production of First Generation Scalar Leptoquarks Using Events Containing Two Electrons And Two Jets Produced in pp Collisions at sqrt s = 7 TeV, Technical Report, CMS-PAS-EXO-10-005, CERN, Geneva, 2010, direct contribution
- 2010, CMS collaboration, Missing ET in 0.9 and 2.36 TeV pp Collisions, Technical Report, CMS-PAS-JME-10-002, CERN, Geneva, 2010, direct contribution
- 2010, CMS collaboration, CMS. Missing Transverse Energy Performance in Minimum-Bias and Jet Events from ProtonProton Collisions at √s, Technical Report, CMS-PAS-JME-10-004, CERN, Geneva, 2010, direct contribution
- 2010, CMS collaboration, CMS MET Performance in Events Containing Electroweak Bosons from pp Collisions at sqrt(s)=7 TeV, Technical Report, CMS-PAS-JME-10-005, CERN, Geneva, 2010, Direct contribution
- 2011, CMS collaboration, Search for Heavy Stable Charged Particles, Technical Report, CMS-PAS-EXO-11-022, CERN, Geneva, 2011, direct contribution
- CMS Search Plans and Sensitivity to New Physics using Dijets, Technical Report, CMS, CMSPAS-SBM-07-001, CERN, Geneva. editorial contribution/internal reviewer
- 2013, CMS collaboration, Search for Large Extra Spatial Dimensions in Dielectron Production with the CMS Detector, Technical Report, CMS-PAS-EXO-12-031, CERN, Geneva, 2013, editorial contribution/internal reviewer
- 2013, CMS collaboration, Search for Extra Dimensions in Dimuon Events in pp Collisions at sqrt(s) = 8 TeV, Technical Report, CMS-PAS-EXO-12-027, CERN, Geneva, 2013. editorial contribution/internal reviewer.

- 2013, CMS collaboration, Search for leptonic decays of W' bosons in pp collisions at sqrt(s)=8 TeV, Technical Report, CMS-PAS-EXO-12-060, CERN, Geneva, 2013, editorial contribution/internal reviewer
- 2013, Search for dark matter in the mono-lepton channel with pp collision events at center-of-mass energy of 8 TeV, Technical Report, CMS-PAS-EXO-13-004, CERN, Geneva, 2013, editorial contribution/internal reviewer
- 2014, CMS collaboration, MUSiC, a Model Unspecific Search for New Physics, in pp Collisions at square root of s = 8 TeV, CMS-PAS-EXO-14-016, ARC member
- 2015, CMS collaboration, Search for dark matter with jets and missing transverse energy at 13 TeV, CMS-PAS-EXO-15-003, ARC chair
- 2016, CMS collaboration, Search for pair-production of second-generation scalar leptoquarks in pp collisions at sqrt{s}= 13 TeV with the CMS detector, CMS-PAS-EXO-16-007, ARC chair
- 2016, Search for Dark Matter and Large Extra Dimensions in the gamma+MET final state in pp collisions at sqrt{s}=13 TeV, CMS-PAS-EXO-16-014, ARC chair
- 2017, The Phase-2 Upgrade of the CMS endcap calorimeter", CMS collaboration, CERN-TDR-17-007
- 2017, The Phase-2 Upgrade of the CMS Barrel Calorimeters, CMS Collaboration, CERN-TDR-17-002

Book Reviews, Notes and Other Contributions

Book Reviews

- 2001, S. Eno, "Review of Introduction to High Energy Physics, by D. H. Perkins"*, Physics Today*, June, pg. 60

Sponsored Research and Programs

- 2021 CalVison grant from DOE $20k (PI of collaboration of many institutions, including national labs)
- 2017, G&V grant from FNAL, $5k
- 2015, MOU between U. Maryland and Notre Dame to sponser a Chemistry teacher to learn about the LHC, NSF, Anita Chernowitz
- 2000, MOU between University of Maryland and Notre Dame to send teacher to CERN, NSF, $6000
- 1996, To Study and Develop a "Prototype for a Muon Scintillator Trigger for the D0 Experiment, DOE Grant, $29,250/year
- 1995, Physics with the D0 Detector and D0 Upgrade at the University of Maryland, DOE Grant, $75,000/year, 1995-1999
- 1995, Outstanding Junior Investigator, DOE, 1995-1999, about $60k/year
- 1989, High Energy Accelerator and Collidering Beam User Group at the University of Maryland, DOE, ongoing, approximately $1.5M/year

TEACHING, MENTORING AND ADVISING

Courses Taught

- PHYS485/685, Research Electronics, Fall 2021
- PHYS276, Experimental Physics II: Electricity and Magnetism, Spring 2021
- PHYS276, Experimental Physics II: Electricity and Magnetism, Fall 2020
- PHYS375, Experimental Physics III: Electromagnetic Waves, Optics and Modern Physics, Spring 2020
- PHYS276, Experimental Physics II: Electricity and Magnetism, Fall 2019
- PHYS375, Experimental Physics III: Electromagnetic Waves, Optics and Modern Physics, Spring 2019
- PHYS276, Experimental Physics II: Electricity and Magnetism, Fall 2018, 15 students
- PHYS276, Experimental Physics II: Electricity and Magnetism, Spring 2018, 15 students
- PHYS499A, Spec. Prob. in Phys., fall 2018, 1 student
- PHYS276, Experimental Physics II: Electricity and Magnetism, Fall 2017, 15 students
- PHYS276, Experimental Physics II: Electricity and Magnetism, Spring 2017, 15 students
- PHYS105, Physics for Decision Makers: the Global Energy Crisis, Fall 2016, 87 students
- PHYS276, Experimental Physics II: Electricity and Magnetism, Spring 2016, 15 students
- PHYS398, Independent Studies Seminar, Spring 2016, 1 student
- PHYS398, Independent Studies Seminar, Fall 2016, 1 student
- PHYS499A, Spec. Prob. in Phys., Spring 2016, 1 student
- PHYS105, Physics for Decision Makers: the Global Energy Crisis, Fall 2015, 93 students
- ENEE499, Senior Projects in Electrical and Computer Engineering, spring 2015, 1 student
- PHYS758E, Cosmic Ray Physics, spring 2015, 2 students
- PHYS499A, Spec. Prob. in Phys., Spring 2015, 5 students
- PHYS276, Experimental Physics II: Electricity and Magnetism, Spring 15, 21 students
- PHYS499A, Spec. Prob. in Phys., Fall 2015, 6 students
- PHYS499A, Spec. Prob. in Phys., Fall 14, (3 students)
- PHYS105, Physics for Decision Makers: the Global Energy Crisis, Fall 14, (83 students)
- PHYS751, Elementary Particle Physics Survey, Fall 13, (3 students)
- PHYS751, Elementary Particle Physics Survey, Fall 12
- PHYS751, Elementary Particle Physics Survey, Fall 11
- PHYS375, Experimenta Physics III: Electromagnetic Waves, Optics, and Modern Physics, Spring 11
- PHYS399, Special problems in Physics (Michael Kossin), Fall 10
- PHYS141, Principles of Physics, Spring 10
- PHYS751, Elementary Particle Physics Survey, Fall 10
- PHYS276, Experimental Physics II: Electricity and Magnetism, Fall 09
- PHYS141, Principles of physics, Spring 09
- PHYS276, Experimental Physics II: Electricity and Magnetism, Fall 08
- PHYS276, Experimental Physics II: Electricity and Magnetism, Spring 07
- PHYS276, Experimental Physics II: Electricity and Magnetism, Fall 07
- PHYS276, Experimental Physics II: Electricity and Magnetism, Fall 06

- PHYS142, Principles of Physics, II, Spring 06
- PHYS174, Physics Laboratory Intro., Fall 05
- PHYS499A, Independent study, Spring 05, (Shawn Kwang)
- PHYS142, Principles of Physics, II, Spring 05
- PHYS174, Physics Laboratory Intro, Fall 04
- PHYS142, Principles of Physics, II, Spring 04
- PHYS174, Physics Laboratory Intro., Fall 03
- PHYS142, Principles of Physics, II, Spring 03
- PHYS115, Physics for Elementary Education Majors, Spring 02
- PHYS115, Physics For Elementary Education Majors, Fall 02
- PHYS115, Physics for Elementary Education Majors, Spring 01
- PHYS115, Physics for Elementary Education majors, Fall 00
- PHYS174, Physics Laboratory Introduction, Spring 99
- PHYS174, Physics Laboratory Introduction, Fall 99
- PHYS117A, Physics for Elementary Education Majors, Fall 98
- PHYS107, Laboratory on Light Optics for Liberal Arts Students, Spring 98
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- PHYS117A, Physics for Elementary Education Majors, Spring 97
- PHYS117A, Physics for Elementary Education Majors, Fall 97
- PHYS161, Mechanics for Engineering Majors, Spring 96
- PHYS117A, Physics for Elementary Education Majors, Fall, 96
- PHYS107, Laboratory on Light & Optics for Liberal Arts Students, Spring, 95
- PHYS107, Laboratory on Light & Optics for Liberal Arts Students, Spring, 95
- PHYS420, Quantum Mechanics for Engineering Majors, Fall 95
- PHYS107, Laboratory on Light & Optics for Liberal Arts Students, Fall, 94
- PHYS107, Laboratory on Light & Optics for Liberal Arts Students, Spring, 94

Teaching Innovations

Course or Curriculum Development

- 2021 major redesign of PHYS485/685 “Research Electronics”
- 2020 New version of PHYS276 for COVID that used kits from Analog devices to allow the students to learn electronics at home. Completely new versions of all labs.
- 2018, won opportunity to develop a physics “FIRE” (first year innovation and research experience) course, Simulating Particle Detection” https://fire.umd.edu/streams-SPD.html, hired the instructor and worked with her to develop this 3 course sequence.
- 2015, Many revisions to PHYS276 lab manual
- 2015, Developed two new courses, HON268N and HONR269L, including writing text book,
- 2011, Many revisions to PHYS375 (lab course)
- 2009, Major revision on Lab II with Tom Baldwin for 276
- 2008, New lab on transistors for 276 (F2008) New review lab for first day of class for 276
- 2005, Complete revision of 142 lab manual, (only 2 labs from old manual retained)

- 2005, Major rewrite (including new experimental apparatus) for lab 2 of 174 manual
- 2004, Small revisions for 174 lab manual
- 2003, Small revisions for 174 lab manual
- 2001, Revised lab manual for Physics 115 in general
- 2001, Wrote instructors manual for lab manual for lab manual for Physics 115
- 1999, Created new Lab for Physics 174
- 1999, Revised 174 Lab Manual
- 1999, Updated lab manual for Physics 115 for new computer system
- 1995, Revised Physics 107 lab manual

Advising: Research or Clinical

Undergraduate

- 2021 Hannah Anderson, Vanderbilt University as part of U.Mich REU on LHC physics
- 2020 Kate Sturge. Won Virtual Physics Undergraduate Research Showcase poster contest
- 2019 Tesse Gonzalez
- 2019 Lena Franklin
- 2019 Duan Shiyuna
- 2019 Sara Negussie
- 2019 Tyler McDonnell
- 2018 Alan Horst
- 2018 Claire Hinrich
- 2018 Cameron Sylber
- 2018 Colin Yancey
- 2018 James Muessig
- 2018 Jonah Freeman
- 2017 Jacob Prinz
- 2017 David Creegan
- 2015-2016 Aaron Hunt
- 2015-2016 Jesse Coldsmith
- 2015-2016 Avi Kahn
- 2015-2019, Ruhi Perez
- 2015 Vineet Pande
- 2015-2016 Zach Thomas
- 2015 - 2016, Yao Yao, (2015)
- 2014-2016, Mahnegar Amouzegar, won poster contest at Undergraduate women in physics conference, Rutgers
- 2014-2016, Zishuo Yang, won physics department undergraduate research poster contest with Joshua Samuel
- 2014-2015, Fall 2015, Jeff Calderon
- 2015, Fall 2015, Victor Meszaros
- 2014, Fall 2015, Adam Zeitlin
- 2015, Julie Schnurr, U. Hawaii
- 2015, Nirmarta Kaur

- 2015, YouChaun Wang
- 2012, 2015, Joseph Mariano
- 2014, 2015, Joshua Samuel, won physics department undergraduate research poster contest, with Zishuo Yang
- 2013, , Guillaume Cheron
- 2013, Julie Rose
- 2013-2012 Erin Uhlfelder
- 2012-2013, Nicholas Zube
- 2012 Oliver Pierson
- 2012-2015 Katie Hergenreder
- 2011-2012 Roland Jeannier
- 2011 Uchenna (Ike) Chukwu
- 2011 Hannalore Gerling-Dunsmore
- 2011 Noah Mandell
- 2010 Ethan Cowan
- 2009-2010 Jonathan Wonders
- 2009 Issac Carruthers
- 2003 Christie Chew
- 2000-2003, Shawn Kwang
- 2000 Juan Delgado
- 1998, Tommy Landers
- 1996, Kevin Scaldeferri
- 1995, Anil Jayanna

Master's

- Fall 2006, Young Ho Shin
- Fall 1996, Spring 1998, Emmanuel Gouveia
- Fall 1993, Spring 1995, Jay Han

Doctoral

- Fall 2018, ongoing, Christos Papapgeorgakis
- Fall 2019, ongoing YiHui Lai (moved to new faculty member Christ Palmer)
- Spring 2017, ongoing, Sara Nabili
- Fall 2011, Spring 2014, Kevin Pedro, Search for pair production of third-generation scalar leptoquarks and R-parity violating top squarks in proton-proton collisions at sqrt(s) = 8 TeV, FNAL
- Fall 2007, Spring 2011, Dinko Ferencek, Search for pair production of first-generation scalar leptoquarks in pp collisions at sqrt(s) = 7 TeV using the CMS detector at the CERN LHC, Ph.D. 2011, Rutgers
- Fall 2007, Spring 2011, Ken Rossato, A search for long-lived gluinos with the CMS experiment during beam-off periods of the Large Hadron Collider, (with Andris Skuja), Red Hat
- Spring 2010, Ellie Lockner, Ph.D. 2010, (with Drew Baden), Ventura Solutions

- Fall 2001, Spring 2009, Matt Wetstein, Measurement of the W boson mass and width using a novel recoil model, Ph.D. 2009, U. Chicago
- Fall 2002, Spring 2007, Lei Wang, Measurement of Z boson transverse momentum in proton-antiproton collisions at sqrt(s)=1.96 TeV, Ph.D., 2007, Barclays Capital
- Fall 2000, Spring 2004, Junjie Zhu, Direct measurement of the W boson decay width in proton-antiproton collisions at sqrt(s)=1.96 TeV, (joint with N. Hadley), U. Michigan
- Term not known, Spring 1999, Gervasio Gomez, Extraction of the Width of the W Boson from a Measurement of the Ratio of the W and Z Crosssections, U. Santander

Post-doctoral

- 2018- ongoing Markus Seidel
- 2019-ongoing Long Wang
- 2016-2019 Francesca Ricci-Tam
- 2015-2018 Geng Yuan Jeng
- 2011- 2016 Ted Kolberg
- Fall 2014, 2015, Sung Woo Youn
- Fall 2011, 2014, Matthieu Marrionneau, ETH, Zurich
- Fall 2007, Spring 2011, .Francesco Santanastatio, Rome "La Sapienza" University
- Fall 2007, Spring 2011, Paolo Rumerio, U. Alabama
- Fall 2004, Spring 2007, Terry Toole, photodiagnostic systems
- Fall 2004, Fall 2006, Michiel Sanders, Radbound University, Netherlands
- 2001, 2005, Marco Verzocchi, Fermi National Accelerator Laboratory
- Fall 2001, Spring 2004, Salavat Abdullin, FNAL
- Fall 1999, Spring 2002, Dave Toback, Texas A&M
- Term not known, Spring 2002, Isa Dumanoglu, Cukurova U, Turkey
- Fall 1999, Spring 2000, Greg Graham, FNAL
- Fall 1993, Spring 1999, Joey Thompson, Alara Captial
- Spring 2007, Jeff Temple, (April 2007 present), Ventura Solutions

Other

- Sum I 2015, Sum II 2015, Eshan Tewari, high school student
- Sum I 2015, Sum II 2015, Anita Chernowitz, high school teacher
- 2017, Sultan Sahil Bal, visiting faculty member from Bitlis Ern University, Turkey
- 2017, Nabil El Faramawy, visiting faculty member from Ain Shams University, Egypt

SERVICE AND OUTREACH

Editorships, Editorial Boards and Reviewing Activities

Reviewing Activities for Journals and Presses

- 2021 – ongoing reviewer, JINST 2021 (1)
- 2021 – ongoing, reviewer Dyes and Pigments 2021 (1)

- 2017 – ongoing, reviewer EPJC, 2017 (1)
- 2016 – Ongoing, Reviewer New Journal of Physics, 2016 (1)
- 2013 - Ongoing, Reviewer, Physics Letters, Review, 2013 (1)
- 2012 - Ongoing Reviewer, Physics Letters B, Review, 2012 (1)
- 2010 - Ongoing, Reviewer, Nuclear Instrumentation and Methods, Review, 2010 (1)
- 2008 - Ongoing, Reviewer, PRD, Review: 2008 (1), 2011 (1), 2013 (1), 2015 (2), 2016 (1), 2017 (1), 2018 (1), 2021 (1)
- 1999 - Ongoing, Reviewer, PRL, Review: 1999(1), 2002 (2), 2003 (2), 2004 (1), 2005 (2), 2006 (1), 2007 (1), 2008 (1), 2009 (2), 2010 (1), 2011 (3), 2012 (2), 2014 (1), 2015 (2), 2016 (1)

Reviewing Activities for Agencies and Foundations

- 2021 reviewer for DOE small business funds (mrc)
- 2021 reviewer for UKRI Future Leaders Fellowships
- 2021 reviewer for French National Research Agency
- 2021 review for DOE 3 intensity frontier grants
- 2020 -review for DOE 2 grants energy frontier 2 grants instrumentation frontier
- 2019 – review for DOE cosmic frontier -3 grants
- 2019 – EpsCor proposal review for DOE
- 2019 – reviewer NSF 4 proposals
- 2019 – review fir Israel science foundation
- 2018 – review committee for the journal PRD
- 2017 – reviewer for European research council.
- 2016 - 2016, review committee for DOE, comparative review of experimental particle physics proposals, Member, fall 2016
- 2015 - 2015, Reviewer, Reviewer for for John C. Polanyi award, Canada
- 2013 - 2013, review committee for NSF, comparative review of experimental particle physics proposals, Member, Feb 2013
- 2013 - 2013, review committee for DOE, comparative review of experimental particle physics proposals, Member, Nov 2013
- 2012 - 2012, Reviewer, review committee for DOE and NSF of operations of the CMS and ATLAS detectors
- 2012 - 2012, Reviewer, Agence National de la Research, France “Discovery Grants”
- 2011 - 2011, Reviewer, review committee for Argonne National Laboratory
- 2011 - 2011, Reviewer, Reviewer for Canadian HEP program:, 1 in 2011
- 2009 - 2009, Other, Chair of the federal High Energy Physics Advisory Panel (HEPAP) Informal Working Group of University Issues
- 2007 - Ongoing, Reviewer, ORAU EPSCOR, 1 in 2007
- 2007 - 2009, Reviewer, Federal High Energy Physics Advisory Panel (HEPAP)
- 2007 - 2007, Reviewer, PPARC grants (British), 1 in 2007
- 2006 - 2007, Reviewer, Committee to select recipient of the LHC Theory initiative Fellowships, F06 and F07
- 2005 - 2009, Reviewer, Fermi National Accelerator Laboratory Program Advisory Panel

- 2005 - Ongoing, Reviewer, Selection committee for the DOE Outstanding Junior Investigator award, Spring 2005 and Spring 2006
- 2005 - 2005, Reviewer, Selection Committee for joint DOE/NSF Linear Collider Detector R&D proposals
- 2004 - Ongoing, Reviewer, NSF grants, 2 in 2004, 2 in 2007, 2 in 2009, 1 in 2010, 2 in 2012, 1 in 2013, 3 in 2014, 3 in 2015, 2 in 2016
- 2002 - Ongoing, Reviewer, DOE grants, 2002, 2 in 2003, 1 in 2004, 2 in 2005, 2 in 2006, 3 in 2007, 2 in 2008, 5 in 2009, 1 in 2011, 1 in 2012, 1 in 2013,
- 2002 - Ongoing, Reviewer for DOE "Outstanding Junior Investigator or "Career" applications:, 3 in 2002, 3 in 2011
- 2001 - 2001, Review Panel for NSF/DOE for "Quarknet, an outreach program for high school teachers

Committees, Professional & Campus Service

Campus Service - Department

- 2021 – member Department laboratory committee
- 2020 – member Department committee on improving climate for black students
- 2020 – chair search committee new faculty hire experimental hep
- 2019 – second reader Zishuo Yang's candidacy paper (Jawaheary advisor)
- 2019 – Appeal oral committee, Patrick Becker
- 2018 – promotion committee, Alberto Belloni
- 2017 – second reader Min-A Cho's candidacy paper (Shawhan advisor)
- 2017 – qualifier oral committee for Ruben Rojas
- 2016 – Ongoing, member, Priorities committee
- 2015 - 2015, Member, Adhoq committee on hiring Nathalie de Leon (AMO
- 2015 - 2015, Member, EEOC committee, physics department
- 2014 - 2014, Member, promotion committee, Kara Hoffman
- 2014 - 2014, Member, for WIP conference at MD, panel on graduate admissions and ``field of physics'' expert
- 2014 - 2014, Chair, Qualifier oral committee, Min A Cho
- 2012 - 2012, Member, Search Committee, HEP faculty position
- 2011 - 2012, Member, Committee to hire assistant professor in experimental fundamental physics
- 2010 - 2011, Member, Appointments, Promotions, and Tenure committee
- 2009 - 2010, Chair, Appointments, Promotions, and Tenure committee
- 2009 - 2009, Member, Promotion committee for Alessandra Buonanna
- 2009 - 2009, Member, Committee to consider hiring of R. Sundrum
- 2007 - 2011, Member, On committee to do Teaching Interviews for new faculty candidates, Interviewed 3 candidates in 2004. Interviews 14 candidates in 2005. 1 Interview in 2007. 1 in 2011
- 2007 - 2007, Chair, Arbitrary and capricious grading committee, 1 case in 2007
- 2006 - 2006, Member, Graduate admissions committee
- 2006 - 2007, Member, Faculty search committee for theory high energy physicist

- 2005 - 2005, Member, Appointments, Promotions and Tenure committee, Spring, 2005
- 2004 - 2004, Member, Committee to award George Snow Award
- 2004 - 2004, Member, Promotion committee for Michael Fuhrer, (wrote Service portion of packet)
- 2002 - 2003, Quarknet, Lead HEP group "Quarknet summer and fall program 2002, summer 2003
- 2001 - 2013, Teaching review committees, 2001 (Michael Fuhrer), 2003 (Doug Roberts), 2004 (Wolfgang Losert), 2005 (Kara Hoffman), Arthur La Porta (2010), Shabnam Jabeen (2013)
- 2001 - 2005, Member, Committee to award the "George Snow award, 2001, 2005
- 1999 - 2008, Member, Laboratory Committee, Physics Department, S99, F99, S00, F05, F08
- 1998 - Ongoing, Graded qualifier problem, winter 1998, winter 1999, winter 2003, fall 2008, winter 2010, fall 2014, winter 2016, winter 2020
- 1997 - 1999, Graduate Committee, 1997-1999
- 1996 - Ongoing, Member, Expanded Qualifer Committee, 1996-1998, 2001, 2002, 2015
- 1996 - Ongoing, Organized HEP seminars, Fall 1996, Fall 2001, Fall 2003, Fall 2006, Spring 2015, Fall 2017
- 1996 - 1996, Member, Physics 161 Text Book review committee
- 1995 - Ongoing, Ph.D. Committee, 1995 (Cynthia Dion), 1997 (Adam Lyon), 1998 (Matt Herndon, 1999 (Mel Sabela), 2003 (Amir Farbin), 2004 (Leslie Atkins), 2007 (Ken Hsieh), 2008 (Ralf Ehrlich), 2012 (Anirban Gangopadhyay), 2015 (Brian Calvert), 2016 (Chris Anelli, Chris Verhaaren), 2017 (Chris Ferraioli (chemistry), Chang Lee, SungWoo Hong, Jack Wemberley), 2018 (Min-A Cho), 2020 (Yongbin Feng), 2020 (Yiming Cai)
- 1995 - Ongoing, Wrote Qualifier Problem:, 1995, 2001, 2004, 2006, 2017
- 1995 - 1996, Physics Council, 1995-1996, 1998
- 1995 - 2008, Member, Salary Committee, 1995,1996, 2007, 2008
- 1994 - 2004, Qualifier Oral Exams, 1994, 1996, 1998, 2000, 2004

Campus Service - College

- 2014 - 2016, Member, Graduate school PCC committee
- 2013 - 2013, Member, Candidacy exam committee, Chris Ferraioli, Chemistry
- 2010 - 2010, Member, Physics chair reappointment committee
- 2005 - 2007, Member, College Appointments, Promotions, and Tenure committee
- 1999 - 1999, Member, College Senate
- 1996 - 1996, Member, Deans Teaching Award Committee

Campus Service - University

- 2021 – member distinguished dissertation award committee
- 2020 – member distinguished dissertation award committee
- 2018 – chair committee to select recipient of "Kirwan" award for outstanding contributions to undergraduate education
- 2016 – Ongoing, member, postdoc faculty advisory board, graduate school

- 2015 - 2016, Member, Distinguished Scholar Teacher Selection Committee
- 2014 - 2017 Member, University APT committee
- 2013 - 2013, Member, Judge, TREND REU
- 2013 - 2014, Member, Graduate Council
- 2013 - 2013, Member, Graduate Council TA training working group
- 2012 - 2013, Member, Flagship Fellowship Selection Committee
- 2007 - 2007, Member, Dissertation committee, Zheng Wang (Accounting)
- 2005 - 2008, Chair, NSF Fellowship representative to the National Scholarships Advisory Committee, (organized a workshop in the fall, advised and read applications of students)
- 2003 - 2003, Member, CORE review committee for CMPS courses:
- 2002 - 2001, Member, Human Relations Committee of Senate, fall 2002, Spring 2001
- 2002 - 2002, Member, Senate nominations committee
- 2001 - 2004, Member, Presidents commission on woman's issues, Presidents Commission on Womens Issues: F01-S04
- 2001 - 2001, Member, Part of a Senate Grievance committee, F01
- 2000 - 2000, Member, College Park Senate Executive Committee, 2000
- 2000 - 2000, Member, Group leader for the fall new faculty orientation
- 2000 - 2001, Member, Senate Executive Committee
- 1999 - 2001, Member, University Senate member
- 1995 - 1995, Member, Panelist for "The Digital Village"
- 1994 - 1999, Letters and Sciences Advise-5 Advisor:

Offices and Committee Memberships

- 2004 - 2007, Member, APS Division of Particles and Fields executive committee, Elected

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

- 2021 DOE ATLAS operations director's review committee
- 2021 CPAD conference committee
- 2021 program committee EIC Calorimetry workshop
- 2021 moderator Snowmass Agora on circular colliders
- 2021 organizer APS Climate committee visitation USCMS
- 2021- ongoing Blavatnik award for young scientists selection committee (New York Academy of Sciences)
- 2021 – ongoing member CERN FCC Physics, Detectors, and Experiments committee
- 2020 – member USCMS deputy operations manager selection committee
- 2020 – ongoing program committee – Americas workshop on linear colliders
- 2020 – program committee – international workshop on the CepC 2020
- 2020 – organized workshop on future electron positron colliders, DC
- 2020 – grant selection committee USCMS software and computing
- 2020 – ongoing member CMS thesis award committee
- 2019 – ongoing member HGCAL conference committee
- 2019 DOE/NSF Basic Research Needs panel - calorimetry
- 2019 USATLAS Phase II upgrade DOE/NSF review committee

- 2018-ongoing USCMS CB deputy chair
- 2017 chair of selection committee for FNAL's LHC Physics Center
- 2017- 2019?, co-chair Standard Model Physics publication committee, CMS experiment
- 2016 - 2016. Chair, selection committee, LHC Physics Center (FNAL) co-head
- 2016 – 2018 LHC Physics Center (FNAL) advisory board
- 2016 – Ongoing, co-convener HCAL publication committee
- 2016 – 2020?, selection committee member, LHC Physics Center (FNAL) Distinguished Researchers
- 2015 - 2016, Member, USCMS Resource Allocation Advisory Board
- 2015 - 2015, Member, DOE Particle Data Group review committee
- 2013 - 2014, Co-Chair, CMS collaboration Exotica non-hadronic subgroup
- 2013 - 2013, Chair, CMS Collaboration HCAL HE radiation damage task force
- 2012 - 2017, Member, CMS collaboration publications committee, exotica subgroup
- 2012 - 2013, Co-Chair, CMS collaboration board career committee
- 2011 - Ongoing, CMS ARCs, head of ARC for excited lepton (2011), for hadronic susy (2011), excited lepton (2015), monojet (2015), second generation leptoquark (2016), monophoton (2016). member of jet energy scale arc (2015), music (2016), first generation leptoquark (2017), second generation leptoquark (2017), diboson at 5.02 (2021), monojets (2021)
- 2010 - 2010, Member, Advisory committee for Study Abroad committee
- 2010 - 2012, Member, Selection committee for "Panofsky" prize of the DPF division of APS, 2010, 2011, 2012
- 2010 - 2011, Co-Chair, CMS subgroup for studying MET
- 2009 - 2009, Chair, CMS collaboration hcal noise task force
- 2009, Chaired internal review committee for CMS public document on studies of trigger from CRAFT data, (2009)
- 2009, Chaired internal review committee for CMS public document on 2nd generation leptoquarks, (2009)
- 2009, On internal review committee for CMS public document on studies of W and Z to muons, (2009)
- 2009, On internal review committee for papers from D0 on dibosons, (2009)
- 2009 - 2011, Co-Chair, CMS "leptoquark" subgroup
- 2007 - 2009, Member, Federal High Energy Physics Advisory Panel
- 2007 - 2008, Co-Chair, CMS exotica convener
- 2006 - 2007, Co-Chair, CMS collaboration SUSY/Beyond-the-standard Model search group, The CMS collaboration contains over 2000 physicist. The analysis is done in 5 of these physics groups
- 2005 - 2005, Member, Internal FNAL review of US CMS computing and software project
- 2005 - 2007, Chair, US CMS Physics Coordinator
- 2004 - 2005, Co-Chair, Dzero Collaboration W mass working group
- 2004 - 2007, Co-Chair, LHC Physics Center, In charge of organizing U.S. participation in the analysis of Physics Data taken with the CMS experiment at the LHC. There are over 800 physicists in the US working on this experiment

- 2003 - 2005, Co-Chair, Dzero Collaboration simulation group
- 2003 - Ongoing, Sorter for APS Abstracts, April meeting,, 2003, 2004, 2005, 2006, 2008, 2012, 2013
- 2002 - 2002, Chair, Dzero Collaboration Video Task force
- 2002 - 2002, Member, D0 collaboration Video Task Force
- 2002 - Ongoing, Member, Sorting committee for APS HEP abstractions, S02, S03, S04, S05
- 2000 - 2002, Co-Chair, Fast Monte Carlo simulation group, D0 Collaboration
- 1999 - 1999, Member, D0 collaboration trigger review panel
- 1999 - 2001, Member, Computing and software review board for the CMS collaboration
- 1999 - 2002, Co-Chair, Jets and Missing ET group, CMS Collaboration, Convener, (1999-2002), This group is one of five groups responsible for the physics output of the CMS collaboration. There are approximately 1500 members of the CMS collaboration
- 1998 - 1999, Co-Chair, W and Z cross section group, D0 collaboration, This group contains approximately 10 members
- 1998 - 2000, Member, Fermilab Users Executive Committee, Elected Committee that represents the users of the Fermilab accelerator complex
- 1997 - 1997, Co-Chair, Exotics subgroup of the Very Large Hadron Collider Workshop, Fermilab
- 1997 - 1997, Member, D0 software review committee
- 1997 - 2009, Member, D0 collaboration Institutional Board, Representative
- 1996 - 1996, Member, Organizing Committee of SUSY conference at Maryland
- 1996 - 1998, Co-Chair, New Phenomena group, Co-convener, D0 collaboration (1996-1998), This group contained approximately 50 members
- 1995 - 1995, Member, International Advisory Committee Symposium on Vector Boson Self- Interactions, UCLA
- 1993 - 1993, Co-Chair, Electroweak studies group, CDF collaboration, This group contained approximately 50 members.
- 1993 - 2001, Member, D0 Authorship Committee, (1993-2001)
- 1992 - 1992, Co-Chair, W mass sub-group, CDF collaboration, This group contained approximately10 members

External Service and Consulting

Community Engagements, Local, State, National, International

- 2016, physics consultant for play "Constellation" at Studio Theater, Studio Theater
- 2016, external reader, thesis, Yale University

International Activities

- 2020, external reader, thesis. Tata Institute of Fundamental Research, India
- 2019, external reader, thesis, ETH Zurich (Giorgia Rauco)
- 2015, External reader, thesis, Tata Institute of Fundamental Research, India
- 2015, External reader and committee member, thesis, U. Toronto

Consultancies (to local, state and federal agencies; companies; organizations)

- 1994, High Energy Theory Faculty Search Committee, Michigan State University

Non-Research Presentations

Outreach Presentations

- 2020, panelist, Astroterps equity/diversity Panel
- 2019, Particle Physics 1984 til now, U. Maryland Society of Physics students
- 2018, Particle accelerators, "Nifty fifty" talk at Chesapeake Science Point school, Anne Arundel count, Maryland
- 2017, Detectors and Accelerators, Saturday morning physics, U. Maryland
- 2017, How many physicists does it take to discover a new particle?, women in science series, Catholic University
- 2016, Detectors and Accelerators, Saturday morning physics, U. Maryland
- 2016, What is a Higgs and how do you discover one?, Society of Physics students, U. Maryland
- 2015, Scintillators and the LHC Detectors, ChemLHC Workshop, Saint Anselm's Abbey School
- 2015, How many physicists does it take to discover a new particle? The Higgs Boson and Big Science, Mid-Atlantic Senior Physicists
- 2013, What is a Higgs and how do you discover one, U. Maryland, Society for Physics Students, March, 2013
- 2012, What is a Higgs and how do you find one, Talk at MD Physics Summer Girls Camp, 7 Aug 2012
- 2011, The LHC: Results from the Energy Frontier, APS Mid-Atlantic Senior Physicists group, invited Colloquium, 19 Apr. 2011

Other

- 2016, The science of energy, Georgetown University

Media Contributions

Print Media

- 2012, Guess List, Washingtonian Magazine, Sept. 2012, section
- Gettysburg College Magazine, http://www.gettysburg.edu/alumni2/explore/press-release-detail.dot?id=3376068
- http://www.sigmakappa.org/saraheno/, Sigma Kappa Magazine

Community & Other Service

- 2015, A. Chernowitz, Created and organized workshop for high school chemistry teachers on the LHC, Saint Anselm's Abbey School

AWARDS, HONORS AND RECOGNITION

Research Fellowships, Prizes and Awards

- 2014, Distinguished Scholar Teacher, University of Maryland
- 2009, India-U.S. Professorship Travel Award, $4000, 2009, (APS-IUSSTF India-U.S.a Travel Program)
- 2008, Graduate Research Board Fellowship, University of Maryland, S08, teaching buyout + $500

Teaching Awards

- 2010, Recognition from Physics chair for excellent teaching, (top 10 teachers), F10
- 2009, Recognition from Physics chair for excellent teaching, (top 10 teachers), F09
- 1985, Honorable mention citation for teaching skills, University of Rochester

Service Awards and Honors

- 2015, an "Outstanding Referee of Physical Review and Physical Review Letters", American Physical Society
- 2010, “One of the Most Valuable Reviewers” award, Nuclear Instrumentation and Methods, ($60)

Other Special Recognition

- 2021, Fellow American Association for the Advancement of Science, elected 2020
- 2009, Fellow, American Physical Society, (elected 2009)
- 1999, Outstanding Junior Investigator, Department of Energy, 1995-1999
- 1999, Young Alumni Achievement Award, Gettysburg College
- 1987, Rush Rheess Fellowship, University of Rochester, Sept. 1985-June 1987
- 1984, Salutatorian, Gettysburg College
- Phi Beta Kappa, junior standing, Gettysburg College