Kevin J. Kelly
Curriculum Vitae

PERSONAL DETAILS

Location	Texas A&M University, Mitchell Institute for Fundamental Physics and Astronomy
Address	MIST M519
Phone	+1 (248) 635-4238
E-mail	kjkelly [at] tamu.edu

EMPLOYMENT

Assistant Professor **2022-Present**
Texas A&M University (Department of Physics and Astronomy)
Senior Research Fellow **2021-2022**
CERN (Department of Theoretical Physics)
Postdoctoral Research Associate **2018-2021**
Fermi National Accelerator Laboratory (Theory Group)

EDUCATION

PhD Physics **2013-2018**
Northwestern University, Advisor: Prof. André de Gouvêa
BSc. Physics, Mathematics **2009-2013**
University of Notre Dame, Summa Cum Laude. Advisor: Prof. Michael Hildreth

COMMUNITY SERVICE

Journal Referee
Physical Review Letters, Physical Review D, Journal of High Energy Physics, Physics Letters B, European Journal of Physics C, Modern Physics Letters A
Texas A&M University Physics & Astronomy Festival
2023, 2024, 2025 volunteer: outreach & demos attended by over 5,500 people in the community.
Departmental Committees (TAMU Physics & Astronomy)
2022-present: Marketing
2022-2024: Diversity and Climate
2025-present: Graduate Admissions
Mitchell Conference on Collider, Dark Matter, and Neutrino Physics
Organizer, 2023-2025
MIPEP Summer Program
Lecturer, 2024, 2025
TREND Summer Program
Lecturer, 2024, 2025
Davidson Young Scholars Symposium
Lecturer, 2023
TAMU Saturday Morning Physics Lecturer
2022: "A Deep Dive into Particle Physics"
Snowmass 2021

Snowmass Early Career Convener: BSM with Neutrinos (NF03) & Neutrino Theory (TF11).
White-paper contribution on self-interacting neutrinos: Co-Led.
Mini-Workshop on Neutrino Theory: Co-Organized.

EuCAPT Symposium 2022
May 2022. Organizer, particle astrophysics

Fermilab Neutrino University
2019 – Lecture series organizer, Fermilab, June-August 2019
2021 – Speaker: "Beyond the Standard Model Physics with Neutrinos," Virtual, July 2021
2023 – Speaker: "What do we do with neutrino data?" August 2023

Fermilab Undergraduate Lecture Series
Summer 2020, speaker: "Introduction to Particle Physics"

Fermilab Saturday Morning Physics
2019-2020 sessions: lectures on special relativity

Fermilab Office of Education and Public Engagement
Various outreach events: Superheroes in STEM, Ask-A-Scientist, etc.

KICP Lifelong Learning Institute
Outreach talks, October 2019

Hidden Sector Fixed Target Experiments at Fermilab Sympsium
Organizer, Fermilab, September 2019

Physics Opportunities at the Near DUNE Detector Hall (PONDD) 2018
Organizer, Fermilab, December 2018

Physics & Astronomy Graduate Student Council
Northwestern University – Secretary (2016), Teaching Assistant Committee Head (2016-2017)

Society of Physics Students
University of Notre Dame - Vice President (2012-2013)

TEACHING EXPERIENCE

PHYS 418 Lecturer **Fall '25**
High-Energy Physics, Texas A&M University

PHYS 689 Lecturer **Spring '25**
Modern Tools for Particle Physics & Astronomy, Texas A&M University

PHYS 202 Lecturer **Spring '23, '24**
College Physics (Electricity & Magnetism, Modern Physics), Texas A&M University

PHYS 201 Lecturer **Fall '22, '23, '24**
College Physics (Classical Mechanics), Texas A&M University

PHYS 135-1 Substitute Lecturer **Oct.-Dec. '17**
Classical Mechanics, Northwestern University

PHYS 412-2 Guest Lecturer **Mar. 2016**
Graduate Quantum Mechanics, Northwestern University

PHYS 135-3 Teaching Assistant **Spring 2018**
Modern Physics, Prof. Zosia Krusberg

PHYS 135-1 Teaching Assistant **Fall 2017**
Classical Mechanics, Prof. Zosia Krusberg

PHYS 135-3 Teaching Assistant **Spring 2017**
Modern Physics, Prof. Deborah Brown

PHYS 135-2 Teaching Assistant **Winter 2017**
Electricity & Magnetism, Prof. Deborah Brown

ASTRON 120 Teaching Assistant **Fall 2016**
Highlights of Astronomy, Prof. David Meyer

ASTRON 220 Teaching Assistant **Spring 2016**

Introduction to Astrophysics, Prof. David Meyer

PHYS 135-2 Teaching Assistant **Winter 2016**
Electricity & Magnetism, Prof. Deborah Brown

PHYS 135-1 Teaching Assistant **Fall 2015**
Classical Mechanics, Prof. Deborah Brown

PHYS 136-1,2,3 Laboratory Assistant **Summer 2015**
General Physics Laboratories, Prof. Arthur Schmidt

ASTRON 111 Teaching Assistant **Spring 2015**
Introduction to Astrobiology, Prof. David Meyer

ASTRON 101 Teaching Assistant **Winter 2015**
Modern Cosmology, Prof. Michael Smutko

ASTRON 120 Teaching Assistant **Fall 2014**
Highlights of Astronomy, Prof. David Meyer

HONORS AND AWARDS

Texas A&M University
2025 Henry Primakoff Award for Early-Career Particle Physics – American Physical Society
Fermilab
Lab Directed R&D (LDRD) Award Co-Investigator: "Accelerator-based Dark Matter Initiatives at Fermilab"
Northwestern University
Weinberg College Outstanding Graduate Student Teacher Award (2015-2016), Physical Sciences
Fermilab Neutrino Physics Center (NPC) Scholar, Fall 2017
University of Notre Dame
Outstanding Physics Major Award, Notre Dame Department of Physics (Spring 2013)
George Kolettis Award in Mathematics (Spring 2013)

PUBLICATION LIST

For a complete and up-to-date listing of publications, see my InspireHEP profile (link).
Note that publications as a member of the SBND and DUNE collaborations, as well as contributions to the 2022 Snowmass process, have been omitted from this list, but are available on my InspireHEP profile.

62. $L_\mu - L_\tau$ **gauge bosons in beam dumps and supernovae**
Nikita Blinov, Patrick J. Fox, **KJK**, Ryan Plestid, and Tao Zhou.
Submitted for publication. arXiv:2511.09619

61. **Radiative Correction from Secret Neutrino Interactions and Implications for Neutrino-Scattering Experiments**
Saeid Foroughi-Abari, **KJK**, and Yue Zhang.
Submitted for publication. arXiv:2510.15023

60. **Beyond-the-Standard-Model Physics in the Neutrino Sector**
KJK.
To appear in Encyclopedia of Particle Physics. arXiv:2510.08437

59. **Towards a Robust Confirmation or Refutation of the Sterile-Neutrino Explanation of Short-Baseline Anomalies**
Ohana Benevides Rodrigues, Matheus Hostert, **KJK**, Bryce Littlejohn, Pedro A.N. Machado, and Tao Zhou.
Phys. Rev. **Lett. 135** (2025) no. 8, 081801. arXiv:2503.13594

58. **Dirt/Detector/Dump: Complementary BSM production at Short-Baseline Neutrino Facilities**
Bhaskar Dutta, Debopam Goswami, Aparajitha Karthikeyan, **KJK**.
JHEP 05 (2025) 240. arXiv:2501.09840

57. **Enabling Strong Neutrino Self-Interactions with an Unparticle Mediator**
Saeid Foroughi-Abari, **KJK**, Mudit Rai, Yue Zhang.
Phys. Rev. **Lett. 134** (2025) no. 18, 181001. arXiv:2501.02049

56. **On T-Invariance Violation in Neutrino Oscillations and Matter Effects**
Olivia M. Bitter, André de Gouvêa, **KJK**.
Phys. Rev. **D111** (2025) no. 5, 055023. arXiv:2412.13287

55. **Neutrino-Portal Dark Matter Detection Prospects at a Future Muon Collider**
Jyotismita Adhikary, **KJK**, Felix Kling, Sebastian Trojanowski.
Phys. Rev. **D111** (2025) no. 7, 7. arXiv:2412.10315

54. **Long-lived vectors from electromagnetic cascades at SHiP**
Tao Zhou, Ryan Plestid, **KJK**, Nikita Blinov, Patrick J. Fox.
JHEP 02 (2025) 107. arXiv:2412.01880

53. **Mass Reconstruction of Heavy Neutral Leptons from Stopped Mesons**
Gustavo F.S. Alves, P.S. Bhupal Dev, **KJK**, Pedro A.N. Machado.
Phys. Rev. **D111** (2024) no. 1, 015017. arXiv:2409.04394

52. **ν_μ and ν_τ elastic scattering in Borexino**
KJK, Nityasa Mishra, Mudit Rai, Louis E. Strigari.
Phys. Rev. **D110** (2024) no. 11, 113004. arXiv:2407.03174

51. **Decaying sterile neutrinos at short baselines**
Matheus Hostert, **KJK**, Tao Zhou.
Phys. Rev. **D110** (2024) no. 7, 075002. arXiv:2406.04401

50. **Dark fluxes from electromagnetic cascades**
Nikita Blinov, Patrick J. Fox, **KJK**, Pedro A.N. Machado, Ryan Plestid.
JHEP 07 (2024) 022. arXiv:2401.06843

49. **Non-standard neutrino interactions mediated by a light scalar at DUNE**
Bhaskar Dutta, Sumit Ghosh, **KJK**, Tianjun Li, Adrian Thompson, Ankur Verma.
JHEP 07 (2024) 213. arXiv:2401.02107

48. **Broad Sterile Neutrinos & the Reactor/Gallium Tension** Hannah Banks, **KJK**, Matthew McCullough, Tao Zhou.
JHEP 04 (2024) 096. arXiv:2311.06352

47. **Keeping it Simple: Simplified Frameworks for Long-Lived Particles at Neutrino Facilities**
Brian Batell, Wenjie Huang, **KJK**.
JHEP 08 (2023) 092. arXiv:2304.11189

46. **There and back again: Solar cycle effects in future measurements of low-energy atmospheric neutrinos**
KJK, Pedro A.N. Machado, Nityasa Mishra, Louis E. Strigari, Yi Zhuang.
Phys. Rev. **D108** (2023) no. 12, 123019. arXiv:2304.04689

45. **More Ingredients for an Altarelli Cocktail at MiniBooNE**
KJK, Joachim Kopp.
JHEP 05 (2023) 113. arXiv:2210.08021

44. **How Broad is a Neutrino?**
Hannah Banks, **KJK**, Matthew McCullough.
JHEP 02 (2023) 136. arXiv:2209.11270

43. **First Constraints on Heavy QCD Axions with a Liquid Argon Time Projection Chamber using the ArgoNeuT Experiment**
The ArgoNeuT Collaboration, including **KJK**
Phys. Rev. **Lett. 130** (2023) no. 22, 221802. arXiv:2207.08448

42. **Very Light Sterile Neutrinos at NOvA and T2K**
André de Gouvêa, Giancarlo Jusino Sánchez, **KJK**.
Phys. Rev. **D106** (2022) no. 5, 055025. arXiv:2204.09130

41. **MicroBooNE and the ν_e Interpretation of the MiniBooNE Low-Energy Excess**
C.A. Argüelles, I. Esteban, M. Hostert, **KJK**, J. Kopp, P.A.N. Machado, I. Martinez-Soler, Y.F. Perez-Gonzalez.
Phys. Rev. **Lett. 128** (2022) no. 24, 241802. arXiv:2111.10359

40. **Probing Neutrino-Portal Dark Matter at the Forward Physics Facility**
KJK, Felix Kling, Douglas Tuckler, Yue Zhang.
Phys. Rev. **D105** (2022) no. 7, 075026. arXiv:2111.05868

39. **DUNE atmospheric neutrinos: Earth Tomography**
KJK, Pedro A.N. Machado, Iván Martinez-Soler, Yuber F Perez-Gonzalez.
JHEP 05 (2022) 187. arXiv:2110.00003

38. **Characterizing Heavy Neutral Fermions via their Decays**
André de Gouvêa, Patrick J. Fox, Boris Kayser, **KJK**.
Phys. Rev. **D105** (2022) no. 1, 015019. arXiv:2109.10358

37. **New constraints on tau-coupled Heavy Neutral Leptons with masses $m_N = 280 - 970$ MeV**
The ArgoNeuT Collaboration, including **KJK**.
Phys. Rev. **Lett. 127** (2021) no. 12, 121801. arXiv:2106.13684

36. **The MicroBooNE Experiment, the NuMI Absorber, and Heavy Neutral Leptons**
KJK, Pedro A.N. Machado.
Phys. Rev. **D104** (2021) no. 5, 055015. arXiv:2106.06548

35. **Millicharged Particles from the Heavens: Single- and Multiple-Scattering Signatures**
Carlos A. Argüelles Delgado, **KJK**, Victor Muñoz.
JHEP 11 (2021) 099. arXiv:2104.13924

34. **Light, Long-Lived $B - L$ Gauge and Higgs Bosons at the DUNE Near Detector**
P.S. Bhupal Dev, Bhaskar Dutta, **KJK**, Rabindra N. Mohapatra, Yongchao Zhang.
JHEP 07 (2021) 166. arXiv:2104.07681.

33. **Three-Body Decays of Heavy Dirac and Majorana Fermions**
André de Gouvêa, Patrick J. Fox, Boris Kayser, **KJK**.
Phys. Rev. **D104** (2021) no. 1 ,015038. arXiv:2104.05719

32. **LEvEL: Low-Energy Neutrino Experiment at the LHC**
KJK Pedro A.N. Machado, Alberto Marchionni, Yuber F. Perez-Gonzalez.
JHEP 08 (2021) 87. arXiv:2103.00009.

31. **Heavy Axion Opportunities at the DUNE Near Detector**
KJK, Soubhik Kumar, Zhen Liu.
Phys. Rev. **D103** (2021) no. 9, 095002. arXiv:2011.05995.

30. **Intimate Relationship Between Sterile Neutrino Dark Matter and $\Delta N_{\text{eff.}}$**
KJK, Manibrata Sen, Yue Zhang.
Phys. Rev. **Lett. 127** (2021) no. 4, 041101. arXiv:2011.02487.

29. **Current and Future Neutrino Oscillation Constraints on Leptonic Unitarity**
Sebastian A. R. Ellis, **KJK**, Shirley Weishi Li.
JHEP 12 (2020) 068. arXiv:2008.01088.

28. **Back to (Mass-)Square(d) One: The Neutrino Mass Ordering in Light of Recent Data**
KJK, Pedro A. N. Machado, Stephen J. Parke, Yuber F. Perez-Gonzalez, Renata Zukanovich Funchal.
Phys. Rev. **D103** (2021) no. 1, 013004. arXiv:2007.08526.

27. **Origin of Sterile Neutrino Dark Matter via Vector Secret Neutrino Interactions**
KJK, Manibrata Sen, Walter Tangarife, Yue Zhang.
Phys. Rev. **D101** (2020) no. 11, 115031. arXiv:2005.03681.

26. **Leptonic Unitarity Triangles**
Sebastian A.R. Ellis, **KJK** Shirley Weishi Li.
Phys. Rev. **D102** (2020) no. 11, 115027. arXiv:2004.13719.

25. **Searches for Decays of New Particles in the DUNE Multi-Purpose Near Detector**
Jeffrey M. Berryman, André de Gouvêa, Patrick J. Fox, Boris J. Kayser, **KJK**, Jennifer L. Raaf.
JHEP 02 (2020) 174. arXiv:1912.07622.

24. **Prospects of Measuring Oscillated Decay-at-Rest Neutrinos at Long Baselines**
Roni Harnik, **KJK**, Pedro A.N. Machado.
Phys. Rev. **D101** (2020) no. 3, 033008. arXiv:1911.05088.

23. **White Paper on New Opportunities at the Next-Generation Neutrino Experiments (Part 1: BSM Neutrino Physics and Dark Matter)**
C.A. Argüelles et. al. (incl. **KJK**)
arXiv:1907.08311.

22. **Neutrino Non-Standard Interactions: A Status Report**
P.S. Bhupal Dev, K.S. Babu, Peter B. Denton, Pedro A.N. Machado et. al. (incl. **KJK**)
SciPost Phys. Proc. 2 (2019) 001. arXiv:1907.00991.

21. **Constraining the Self-Interacting Neutrino Interpretation of the Hubble Tension**
Nikita Blinov, **KJK**, Gordan Z. Krnjaic, Samuel D. McDermott.
Phys. Rev. **Lett. 123** (2019) no. 19, 191102. arXiv:1905.02727.

20. **Physics with Beam Tau-Neutrino Appearance at DUNE**
André de Gouvêa, **KJK** G.V. Stenico, Pedro Pasquini.
Phys. Rev. **D100** (2019) no. 1, 016004. arXiv:1904.07265.

19. **Sub-GeV Atmospheric Neutrinos and CP-Violation in DUNE**
KJK Pedro A.N. Machado, Iván Martinez-Soler, Stephen J. Parke, Yuber F Perez-Gonzalez.
Phys. Rev. **Lett. 123** (2019) no. 8, 081801. arXiv:1904.02751.

18. **Hunting On- and Off-Axis for Light Dark Matter with DUNE-PRISM**
Valentina De Romeri, **KJK**, Pedro A.N. Machado.
Phys. Rev. **D100** (2019) no. 9, 095010. arXiv:1903.10505.

17. **Mono-Neutrino at DUNE: New Signals From Neutrinophilic Thermal Dark Matter**
KJK, Yue Zhang.
Phys. Rev. **D99** (2019) no. 5, 055034. arXiv:1901.01259.

16. **Proton Fixed-Target Scintillation Experiment to Search for Minicharged Particles**
KJK, Yu-Dai Tsai.
Phys. Rev. **D100** (2019) no. 1, 015043. arXiv:1812.03998.

15. **Dark Tridents at Off-Axis Liquid Argon Neutrino Detectors**
André de Gouvêa, Patrick J. Fox, Roni Harnik, **KJK**, Yue Zhang.
JHEP 1901 (2019) 001. arXiv:1809.06388.

14. **Multimessenger Astronomy and New Neutrino Physics**
KJK, Pedro A.N. Machado.
JCAP 1810 (2018) no.10, 048. arXiv:1808.02889.

13. **Shining light on the mass scale and nature of neutrinos with $e\gamma \to e\nu\overline{\nu}$**
Jeffrey M. Berryman, André de Gouvêa, **KJK**, Michael Schmitt.
Phys. Rev. **D98** (2018) no.1, 016009. arXiv:1805.10294.

12. **Matter Density Profile Shape Effects at DUNE**
KJK, Stephen J. Parke.
Phys. Rev. **D98** (2018) no.1, 015025. arXiv:1802.06784.

11. **Lepton-Number-Charged Scalars and Neutrino Beamstrahlung**
Jeffrey M. Berryman, André de Gouvêa, **KJK**, Yue Zhang.
Phys. Rev. **D97** (2018) no.7, 075030. arXiv:1802.00009.

10. **Neutrino versus antineutrino oscillation parameters at DUNE and Hyper-Kamiokande experiments**
André de Gouvêa, **KJK**.
Phys. Rev. **D96** (2017) no.9, 095018. arXiv:1709.06090.

9. **Dark Matter and Neutrino Mass from the Smallest Non-Abelian Chiral Dark Sector**
Jeffrey M. Berryman, André de Gouvêa, **KJK**, Yue Zhang.
Phys. Rev. **D96** (2017) no.7, 075010. arXiv:1706.02722.

8. **Searches for new physics at the Hyper-Kamiokande experiment**
KJK
Phys. Rev. **D95** (2017) no.11, 115009. arXiv:1703.00448.

7. **Lepton-number-violating searches for muon to positron conversion**
Jeffrey M. Berryman, André de Gouvêa, **KJK**, Andrew Kobach.
Phys. Rev. **D95** (2017) no.11, 115010. arXiv:1611.00032.

6. **False Signals of CP-Invariance Violation at DUNE**
André de Gouvêa, **KJK**.
arXiv:1605.09376.

5. **Imperfect mirror copies of the standard model**
Jeffrey M. Berryman, André de Gouvêa, Daniel Hernández, **KJK**
Phys. Rev. **D94** (2016) no.3, 035009. arXiv:1605.03610.

4. **Large extra dimensions at the Deep Underground Neutrino Experiment**
Jeffrey M. Berryman, André de Gouvêa, **KJK**, O.L.G. Peres, Zahra Tabrizi.
Phys. Rev. **D94** no.3, 033006. arXiv:1603.00018.

3. **Non-standard neutrino interactions at DUNE**
André de Gouvêa, **KJK**.
Nucl. Phys. **B908**, 318 (2016). arXiv:1511.05562.

2. **Sterile neutrino at the Deep Underground Neutrino Experiment**
Jeffrey M. Berryman, André de Gouvêa, **KJK**, Andrew Kobach.
Phys. Rev. **D92** (2015) no.7, 073012. arXiv:1507.03986.

1. **CP-invariance violation at short-baseline experiments in 3+1 neutrino scenarios**
André de Gouvêa, **KJK**, Andrew Kobach.
Phys. Rev. **D91** (2015) no.5, 053005. arXiv:1412.1479.

SEMINARS & COLLOQUIUA

Oklahoma University Department of Physics & Astronomy Colloquium
November 2025 – "Neutrino Facilities as New-Physics Machines"
University of Notre Dame Particle Physics Seminar

September 2025 – "Novel BSM Production Mechanisms at Neutrino Facilities & Beyond"
Fermilab Theory Seminar
August 2025 – "Neutrino physics with ill-defined states"
LAWPhysics Webinar Series
April 2025 – "What's lurking around the corner at neutrino experiments?"
UC Irvine Journal Club
March 2025 – "Novel Production of BSM Particles at Neutrino Facilities"
University of Cincinnati HEP/Astrophysics Seminar
September 2024 – "Novel Production of BSM Particles at Neutrino Facilities"
Majorana-Raychaudhuri Seminar Series
August 2024 – "Novel Searches at Neutrino Facilities"
University of New Mexico NUPAC Seminar
March 2024 – "New Physics at Neutrino Detectors: A Plethora of Possibilities"
University of Wisconsin, Madison NPAC Seminar
February 2024 – "Low-Energy Atmospheric Neutrino Oscillations"
Carleton University Physics Colloquium
January 2024 – "Neutrinos and Dark Matter on a Collision Course"
Carleton University Particle Physics Seminar
January 2024 – "New Physics at Neutrino Detectors: A Plethora of Possibilities"'
UT Arlington Physics Colloquium
April 2023 – "Neutrinos and Dark Matter on a Collision Course"
NYU CCPP HEP Seminar
March 2023 – "New Thoughts on an Old Anomaly"
LANL T2 Seminar
November 2022 – "Sterile or No? What's going on with the short-baseline anomalies"
IFIC Seminar
May 2022 – "The Future of Heavy Neutral Lepton Searches"
UCSB HEX-HET Seminar
April 2022 – "The Forward Physics Facility and New(?) Neutrino Physics"
UAB IFAE TH Seminar
March 2022 – "What we'll (hopefully) learn from Neutrino Experiments in the Next Decade"
CERN-TH BSM Forum
March 2022 – "Looking for right-handed neutrinos in all the wrong(?) places"
Wayne State University Particle-Astro-Nuclear Seminar
Remote, February 2022 – "Where we're going with Neutrino Oscillation Experiments"
HEP/Astro Results Forum
December 2021 – "Overview of Neutrino Anomalies". Slides/video available at this https URL
Fermilab Joint Experimental-Theoretical Physics Seminar (Wine & Cheese)
October 2021 – "ArgoNeuT's Search for Heavy Neutral Leptons," presented together with Patrick Green
Texas A&M University Physics & Astronomy Colloquium
Remote, April 2021 – "Neutrinos and Dark Matter on a Collision Course"
Johns Hopkins University/University of Maryland Joint Seminar
Remote, February 2021
University of Michigan LCTP Seminar
Remote, January 2021
Ohio State University CCAPP Seminar
Remote, December 2020 – "Self-Interacting Neutrinos, from the Lab to the Cosmos"
Fermilab Neutrino Seminar
Remote, December 2020
BSM PANDEMIC Seminar
Remote, November 2020 – "Neutrino Oscillations: Where we are, where we're going"

University of Pittsburgh High-Energy Physics Seminar
Remote, November 2020
University of Wisconsin High-Energy/Cosmology Seminar
Remote, November 2020
University of Minnesota High Energy Physics Seminar
Remote, October 2020 – "Heavy Neutrinos and Where to Find Them"
Korea Institute for Advanced Study High Energy Physics Seminar
Remote, July 2020 – "Self-Interacting Neutrinos, The Hubble Tension, and Sterile Neutrino Dark Matter"
SLAC Elementary Particle Physics Seminar
Remote, June 2020 – "Leptonic Unitarity from Neutrino Oscillations: Current & Future Status"
Brookhaven National Lab High Energy Theory Seminar
Remote, May 2020 – "Dark Sector Decays in the DUNE Multipurpose Near Detector"
Lawrence Berkeley National Lab Particle Physics Seminar
Berkeley, CA, December 2019
Texas A&M Mitchell Institute High Energy Seminar
College Station, TX, December 2019 – "New Physics Searches at the DUNE Near Detector"
Argonne National Lab Theory Seminar
Argonne, IL, April 2019
Fermilab Theory Seminar
Batavia, IL, March 2019
Fermilab Neutrino Seminar Series
Batavia, IL, January 2018 – "How much does matter matter at DUNE?"
Northwestern University
Evanston, IL, November 2017 – "Independent Determination of Oscillation Parameters for Neutrinos and Antineutrinos"
University of Illinois at Chicago High Energy Physics Seminar
Chicago, IL, November 2017 – "Chiral Gauge Theories for Dark Sector Construction"
Indiana University High Energy Physics Seminar
Bloomington, IN, March 2017
University of Notre Dame High Energy Physics Seminar
Notre Dame, IN, January 2017
Argonne National Lab Theory Seminar
Argonne, IL, January 2017
Fermilab Theory Seminar
Batavia, IL, September 2016 – "New Physics Searches at DUNE"
Northwestern University
Evanston, IL, 2014-2016 – "CP Violation from a Fourth Neutrino?" – "Sterile Neutrinos at DUNE" – "Non-Standard Neutrino Interactions"

CONFERENCE PRESENTATIONS

TACOS2025
October 2025. Invited speaker: "The Sun through a neutrino lens"
International Neutrino Summer School 2025
August 2025. Invited lecturer: "BSM and Dark Sectors"
Neutrino Experiment And Theory (NEAT) 2025
May 2025. Invited speaker: "What are Heavy Neutral Leptons?"
APS Global Summit 2025
March 2025. Invited speaker: "Novel searches at neutrino facilities"
Empowering the New Vision in High Energy Physics (Aspen 2025)
March 2025. Invited speaker: "Dark Sector Searches with Neutrino Facilities"

NuSTEC Summer School 2024
June 2024. Invited lecturer: "Connections to BSM"
DPF-PHENO 2024
May 2024. Invited plenary speaker: "Recent Developments in Neutrino Theory"
LCTP Spring Symposium 2024
May 2024. Invited speaker: "Novel searches at neutrino facilities"
Neutrinos in Cosmology and Astrophysics 2024
March 2024. Invited speaker: "Neutrinos vs. Dark Matter"
TAU2023
December 2023. Invited speaker: "Neutrino & Dark Matter Connections"
MITP YoungST@RS Workshop
November 2023. Virtual speaker: "Neutrino Detectors & Dark Sectors"
Forward Physics Facility Theory Workshop
September 2023. Virtual speaker: "BSM Physics Opportunities with LHC Neutrino Beams"
WIN2023
July 2023. Virtual speaker: "Light Sterile Neutrinos at Neutrino Oscillation Experiments"
CETUP* 2023
July 2023. Speaker: "Fun with Low-Energy Atmospheric Neutrinos"
DUNE Phase II Near Detector Workshop
June 2023. Virtual speaker: "Dark Matter & Dark Sector Searches @ DUNE Phase II"
Fermilab ACE Science Workshop
June 2023. Virtual speaker: "Neutrinos Detectors & Dark Sectors"
Path to Dark Sector Discoveries at Neutrino Experiments
June 2023. Virtual speaker: "Non-Oscillation Theory at Near Detectors"
CERN Neutrino Platform Pheno Week 2023
March 2023. Virtual speaker: "Problematic Pion-Induced Photons at MiniBooNE"
Pitt PACC 2022: Nu Tools for BSM at Neutrino Beam Facilities
December 2022. Invited speaker: "MiniBooNE Anomaly: Status and BSM"
TACOS2022
October 2022. Invited speaker: "Neutrino Self-Interactions from the Lab to the Cosmos"
Snowmass22 Community Summer Study
July 2022. Invited speaker: "DUNE Phase II and Dark Matter."
Panelist: "NF02: Understanding Experimental Neutrino Anomalies."
Invisibles22 Workshop
June 2022, IJCLab (Saclay). Invited speaker: "New physics searches at neutrino facilities."
Extended Workshop NuTs 2022
May/June 2022, UAM IFT (Madrid). Invited speaker: "Going NuTs over the short baseline anomalies"
Snowmass Joint Workshop on New Physics Opportunities with Neutrino Experiments: Theoretical & Experimental Perspectives
Remote Conference, February 2022. "Decays of New-Physics Particles at the DUNE Near Detector(s)"
SBN-TH Mini-Workshop
Remote Conference, December 2021. Invited speaker: "The MiniBooNE Anomaly"
IRN Neutrino Meeting 2021
December 2021. Invited speaker: "One Theorist's Take on the Recent Short-Baseline Results"
NuTau2021 (Workshop on Tau Neutrinos from GeV to EeV 2021)
Remote conference, September-October 2021. Speaker: "Learning from Tau Neutrino Appearance at Long Baselines"
TAUP 2021 (Topics in Astroparticle and Underground Physics)
Remote conference, August-September 2021. Speaker: "Heavy Dirac/Majorana Fermion Decays," recording available at this link.
EPS-HEP 2021 (European Physical Society conference on high energy physics

Remote conference, July 2021. Speaker: "The DUNE Near Detector Complex as a Beam Dump Facility"

Forward Physics Facility Meeting #2

Remote conference, May 2021. Speaker: "Low-energy LHC Neutrinos"

Pheno2021

Remote conference, May 2021. Speaker: "Decays of Dirac/Majorana Fermions"

PIKIMO10

Remote conference, April 2021. Speaker: "LEvEL: Low-Energy Neutrino Experiment at the LHC"

Dark Matter as a Portal to New Physics 2021

Remote conference, February 2021. Invited speaker: "Searched for Dark Sectors in Neutrino Experiments"

Snowmass 2021 Artificial Neutrino Sources Meeting

Remote conference, December 2020. Invited speaker: "New-Physics Searches at Beam Dump Experiments"

LEPLAr: Low-Energy Physics in Liquid Argon

Remote conference, November 2020. Invited speaker: "MeV-Scale Features in BSM Searches"

PIKIMO9

Remote conference, October 2020. Speaker: "Decays of Dirac and Majorana Heavy Neutral Leptons"

Snowmass 2021 Community Planning Meeting

Invited speaker, parallel session on dark sector searches.

Snowmass 2021 Neutrino BSM Kick-off

Invited speaker: "Dark Sectors at Neutrino Experiments"

New Perspectives 2020

Remote conference, August 2020. Speaker: "Leptonic Unitarity: Current and Future"

PROSPECT Oscillation Workshop

August 2020. Invited speaker: "Short-baseline/Long-baseline Oscillation Measurement Interplay: A Theorist's Perspective"

Fermilab Users Meeting 2020

Remote conference, August 2020. Plenary Speaker: "Neutrino Theory Post-Nu2020"

Neutrino2020

Remote conference, June 2020. Poster Presented: "Searches for Dark Sector Mediators in the DUNE Multi-Purpose Near Detector." Associated video available here.

Neutrinos from the Lab to the Cosmos

Institute for Nuclear Theory, University of Washington, January 2020. Speaker: "New Neutrino Physics at Long-Baseline Experiments" Discussion leader: "Neutrinos and the Hubble Tension"

Precision Investigations in the Neutrino Sector (PINS) 2019

SLAC, July 2019. Speaker: "Sub-GeV Atmospheric Neutrinos and CP Violation"

SBND Collaboration Meeting 2019

Ann Arbor, June 2019. Remote speaker: "Missing Transverse Momentum Signatures in SBND"

Current Trends in Particle Theory (CTPT) 2019

Chicago, IL, June 2019

Fermilab New Perspectives Meeting 2019

Fermilab, 2019. Invited speaker: "Neutrino Theory in 10 Minutes"

New Directions in the Search for Light Dark Matter Particles

Fermilab, June 2019

NTN Workshop on Non-standard Neutrino Interactions

St. Louis, MO, May 2019. Speaker: "Light Dark Matter at DUNE"

DUNE Collaboration Meeting 2019

Fermilab, May 2019. Invited speaker: "Beyond the Standard Model Physics at the DUNE Near Detector"

LCTP Spring Neutrino Physics Symposium

Ann Arbor, MI, April 2019. Speaker: "Searches for Dark Matter with the DUNE Near Detector"

Discrete2018

Vienna, Austria, November 2018. Parallel session speaker: "Multimessenger Astronomy and New Neutrino Physics"

NuFact 2018
Blacksburg, VA, August 2018. Parallel session speaker: "Lepton-number-charged Scalars at DUNE"
Summer Institute for Neutrino Theory (SINT) 2017
Blacksburg, VA, July 2017
Pheno 2017
Pittsburgh, PA, May 2017. Parallel session speaker: "Lepton Number Violation and Muon-to-Positron Conversion"
Current Trends in Particle Theory (CTPT) 2017
Chicago, IL, March 2017. Poster presented: "Lepton Number Violation and Muon-to-Positron Conversion"
NuFact 2016
Quy Nhon, Vietnam, August 2016. Parallel session speaker: "New Physics Searches at DUNE"
Theoretical Advanced Summer Institute (TASI) 2016
Boulder, CO, June 2016
Nu@Fermilab
Batavia, IL, July 2015