Vishvas Pandey

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Current Position

June 2022 - present: Wilson Fellow Associate Scientist, Neutrino Division, Fermi National Accelerator Laboratory, Batavia, Illinois, USA.

Previous Positions

May 2019 - May 2022: Postdoctoral Research Associate, Department of Physics, University of Florida, Gainesville, Florida, USA.
Based full-time at Fermi National Accelerator Laboratory, Batavia, Illinois, USA.

October 2016 - May 2019: Postdoctoral Research Associate, Center for Neutrino Physics, Virginia Tech, Blacksburg, Virginia, USA.

Visiting Positions Held

Fermilab: Aug 2019 - May 2022 (SBND), Apr - May 2017 (ICARUS), Nov - Dec 2016 (MicroBooNE)

Los Alamos National Lab: Dec 2019, May - Aug 2019 (Coherent CAPTAIN-Mills)

CERN: Sep - Oct 2018, May - Jul 2018 (protoDUNE)

Jefferson Lab: Jan - Feb 2018, Feb - Apr 2017 (Electron-Argon Scattering Experiment [E12-14-012])

Sapienza University of Rome, Italy: June 2017 (theory work on neutrino interactions)

Ghent University, Belgium: Jul 2017, Apr - Sep 2016 (theory work on neutrino interactions)

Education

March 2016: Ph.D. in Theoretical Physics, Ghent University, Ghent, Belgium. [July 2010 - March 2016]
Full-time Ph.D. position funded by the prestigious competitive European Commission's Erasmus Mundus Ph.D. scholarship, and funding from the Belgian Science Policy Office.
Ph.D. Dissertation: Modeling electroweak quasielastic scattering off nuclei in kinematics relevant for accelerator-based neutrino-oscillation experiments.
Advisors: Prof. Dr. Natalie Jachowicz and Prof. Dr. Jan Ryckebusch.

May 2010: M.Sc. Physics, specialization in nuclear and particle physics, Indian Institute of Technology Roorkee, Roorkee, India. [July 2008 - May 2010]
Admitted to the M.Sc. program through a competitive, nationwide test entrance exam.
Master's Thesis: Neutrino masses in large volume compactifications in string theory framework.
Advisor: Prof. Dr. Aalok Misra.

May - July 2009: Summer research project as a 'Young Scientist Research Fellow', Raja Ramanna Centre for Advanced Technology, Indore, India.
Thesis: A theoretical study of stimulated Raman scattering in one dimensional Mott-Hubbard systems.
Advisors: Dr. Haranath Ghosh and Dr. Rama Chari.

May 2007: B.Sc. Physics and Mathematics, M. J. P. Rohilkhand University, India. [July 2004 - May 2007]

Grants and Scholarships

Awarded Grants and Scholarships

June 2022 - present: Wilson Fellowship awarded at Fermi National Accelerator Laboratory, Batavia, Illinois, USA.

2014 - 2015: Full-time Ph.D. position funded by Interuniversity Attraction Poles Program initiated by the Belgian Science Policy Office.

2010 - 2013: Full-time prestigious competitive Ph.D. scholarship awarded by the European Commission's initiative Erasmus Mundus External Cooperation Window (EMECW) lot 13 project.

April - June 2011: Scholarship awarded by the European Centre for Theoretical Studies in Nuclear Physics and Related Areas (ECT*, Trento, Italy) for the Doctoral Training Program on Neutrinos in Nuclear and Particle Physics.

June 2010: Ph.D. Fellowship awarded by the Council for Scientific and Industrial Research (CSIR, India) after qualifying the Nationwide Joint CSIR-UGC National Eligibility Test (NET) with high national ranking. *(Declined)*

May - July 2009: 'Young Scientist Research Fellowship' awarded by the Indian Department of Atomic Energy's Raja Ramanna Centre for Advanced Technology, Indore, India.

Leadership and Other Key Roles in Scientific Collaborations

I. Currently Active

A. SBND Collaboration (Fermilab) [2019 - present]
Co-convener, Neutrino Interaction Working Group [2022 - present]
Project Manager (L3), Photon Detection System Integration and Installation [2019 - 2022]
Chair, SBND Speakers Committee [2022 - 2024]
Member, SBND Speakers Committee [2019 - 2022]

Member, SBN Speakers Committee [2023 - 2024]
Chair, Code of Conduct Committee [2020 - 2022]
Organized SBND Collaboration Meeting at Fermilab [June 2024]
Host, SBND Local Journal Club [2022 - 2023]

B. Coherent CAPTAIN-Mills (CCM) Collaboration (Los Alamos Lab) [2019 - present]
Coordinated CCM's photon detection system's integration into the SBND experiment
Leading low-energy inelastic neutrino-argon scattering simulation and measurement, and exploiting its synergy with DUNE's supernova program

C. DUNE (Fermilab) [2023 - present]
Co-led (in 2018), installation of the cosmic ray tagger system of protoDUNE-SP (CERN)

D. Neutrino Scattering Theory Experiment Collaboration (NuSTEC) [2020 - present]
Board Member [2020 - present]
Co-convener, Cross Experiment Working Group (CEWG) [2023 - present]
Co-convener, Outreach Working Group [2021 - 2023]

E. Fermilab Facility for Dark sector Discovery (F2D2) Task Force (Fermilab) [2024 - present]
Leading neutrino physics efforts at F2D2.

II. Past Activities

A. Electron-Argon Scattering Experiment [E12-14-012] (Jefferson Lab Hall A) [2016 - 2019]
Analysis Coordinator [2017 - 2019]
Run Coordinator, Hall A [February 2018]

B. Neutrinos at the Forward Physics Facility (FPF) (CERN) [2021 - 2022]
Topical Co-convener, Neutrino Physics Working Group [2021 - 2022]

C. PLAFOND/Neutrino Platform (CERN) [2017 - 2019]
Team Leader, Virginia Tech Team [2017 - 2019]

D. MicroBooNE Collaboration (Fermilab) [2016 - 2019]
Expert, Data and Monte-Carlo Production Group [2018]

E. ICARUS (Fermilab) [Non-member] [2017]
Trained the team at Fermilab in installing the bottom cosmic ray taggers

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Professional Service

A. At Home Institutions

Coordinator, Neutrino Physics Center (NPC) at Fermilab [2025 - present]

Scientific Secretary, Neutrino Scope Group (NSG), a DUNE Review Committee at Fermilab [Summer 2023 - present]

Co-lead, DOE-sponsored Summer Undergraduate Laboratory Internship (SULI) program at Fermilab [Fall 2022 - present]

Chair, Scientist Advisory Council at Fermilab [Fall 2023 - Fall 2024]

Member, Scientist Advisory Council at Fermilab [Fall 2022 - Fall 2023]

Co-organized, Looking Ahead of Snowmass Seminar Series at Fermilab [January 2023 - July 2023]

Member, Research Associate Hiring Committee, Neutrino Division at Fermilab [Fall 2022].

Reviewer, Undergraduate Scholarship Committee, College of Science at Virginia Tech [2017].

B. Conferences, Workshops and Schools Organized

Co-convener, Neutrino Scattering Physics Working Group [WG2], International Workshop on Neutrinos from Accelerators (NuFact) [2025 - present]

Co-organizer, INT Workshop "Probing the Axial Form Factor: An Emerging Frontier", Institute for Nuclear Theory, University of Washington, Seattle, WA, USA [August 2026 *(Upcoming)*].

Local Organizing Committee, APS Conference for Undergraduate Women and Gender Minorities in Physics, CU*iP 2025, Fermilab, IL, USA [January 2025].

International Advisory Committee, NuSTEC 2024 Summer School, CERN, Geneva, Switzerland [June 2024].

Co-organizer, 2nd Short-Baseline Neutrino Theory-Experiment Workshop, Santa Fe, NM, USA [April 2024].

Co-organizer, NuXTract Workshop, CERN, Geneva, Switzerland [October 2023].

Local Organizing Committee, 14th International Neutrino Summer School (INSS 2023), Fermilab, Batavia, IL, USA [August 2023].

Co-organizer, INT Workshop "Interplay of Nuclear, Neutrino and BSM Physics at Low-Energies", Institute for Nuclear Theory, University of Washington, Seattle, WA, USA [April 2023].

Co-organizer, Snowmass NF06 Low Energy Neutrinos and Electron Scattering Workshop [Virtual] [November 2021].

Program Committee, NuSTEC New Directions in Neutrino-Nucleus Scattering Workshop" [Virtual] [March 2021].

Co-organizer, Snowmass NF06 Electron Scattering Workshop [Virtual] [December 2020].

Program Committee, Snowmass Community Planning Meeting [Virtual] [October 2020].

Co-organizer, Snowmass Mini-Workshop on Neutrino Theory [Virtual] [September 2020].

Co-organizer, NuSTEC Training in Neutrino-Nucleus Scattering Physics, Fermilab, Batavia, IL, USA (November 2017).

Chaired Presentation and/or Discussion Sessions at:
- NuFact 2024, ANL, Illinois, USA [September 2024]
- NuInt 2024, Sao Paulo, Brazil [April 2024]
- MITP June 2023 Workshop, Mainz, Germany [June 2023]
- CIPANP 2022, Orlando, Florida [September 2022]
- Snowmass Community Summer Study, Seattle, USA [July 2022]
- 3rd Forward Physics Facility Meeting [Virtual] [October 2021]
- NuFact 2021, Cagliari, Italy [September 2021]
- SESAPS 2019, Wrightsville Beach, North Carolina [November 2019]
- NuFACT 2018, Virginia Tech, Virginia [August 2018]

Poster Prize Judge, 55th Annual Fermilab Users Meeting, Fermilab [June 2022].

C. Snowmass 2021

Early-career Representative (co-leader), Neutrino Frontier (NF) [July 2020 - July 2022].

Early-career Liaison, NF06 (Neutrino Interaction Cross Section) topical group [July 2020 - July 2022].

Early-career Member, Program Committee of the October 2020 Community Planning Meeting

(See Symmetry Magazine article: Defining the next decade of US particle physics).

D. Journal Referee

Physical Review Letters, Physical Review C, Physical Review D, and Reviews of Modern Physics [Reviewed 20+ articles so far] [2017 - present].

Physics Letters B [Reviewed 5+ articles so far] [2021 - present].

Conference Talks, Seminars and Colloquium

[** indicates invited contributions]

71. February 2025: "The Short-Baseline Near Detector: Contribution to the European Strategy for Particle Physics 2026", DPF/DPB Forum on US contributions to the European Strategy for Particle Physics [Virtual].

70. ** February 2025: *(Invited Seminar)* "Neutrino-Nucleus Interactions and the Quest for New and Precision Physics Searches in Neutrino Experiments", Texas A&M University, Texas, USA.

69. ** February 2025: *(Invited Seminar)* "Neutrino-Nucleus Interactions and the Quest for New and Precision Physics Searches in Neutrino Experiments", Northwestern University, Illinois, USA.

68. ** September 2024: *(Invited Talk)* "Recent Progress in Low-energy Neutrino-nucleus Interactions Physics", NuFact 2024, 25th International Workshop on Neutrinos from Accelerators, Argonne National Laboratory, Illinois, USA.

67. ** July 2024: *(Invited Talk)* "Neutrino-nucleus Interactions and the Quest for New and Precision Physics Searches in Neutrino Experiments", CETUP* 2024, Center for Underground Theoretical Physics and Related Areas, Lead, South Dakota, USA.

66. ** April 2024: *(Invited Talk)* "Impact of Interaction Uncertainties on Neutrino-Nucleus Cross Section Measurements", NuInt 2024, 14th International Workshop on Neutrino-Nucleus Interactions, Instituto Principia, Sao Paulo, Brazil.

65. ** October 2023: *(Invited Talk)* "Uncertainties in Low-energy Neutrino-nucleus Scattering", Workshop on Theoretical Physics Uncertainties to Empower Neutrino Experiments, Institute for Nuclear Theory, University of Washington, Seattle, WA, USA.

64. ** August 2023: *(Invited Talk)* "An Overview of Neutrino-nucleus Interactions: Status and Path Forward", NuFact 2023, 23rd International Workshop on Neutrinos from Accelerators, Seoul, South Korea.

63. ** July 2023: *(Invited Talk)* "Overview of Neutrino-nucleus Interactions and Its Impact on Accelerator-based Neutrino Experiments", CETUP*, Center for Underground Theoretical Physics and Related Areas, Lead, South Dakota.

62. ** July 2023: *(Invited Seminar)* "The Short-Baseline Neutrino Program at Fermilab", Ghent University, Ghent, Belgium.

61. ** June 2023: *(Invited Talk)* "Neutrino Interaction Measurement Capabilities of the Short-Baseline Near Detector", Neutrino Scattering at Low and Intermediate Energies, Mainz Institute for Theoretical Physics, Johannes Gutenberg University, Mainz, Germany.

60. ** April 2023: *(Invited Talk)* "The Impact of Neutrino-nucleus Interactions on Accelerator-based Neutrino Oscillation Experiments", APS GHP 2023, 10th Workshop of the APS Topical Group on Hadronic Physics, Minneapolis, Minnesota.

59. ** September 2022: *(Invited Plenary Talk)* "Overview of neutrino-nucleus interactions and its impact on accelerator-based neutrino experiments", NuDM 2022, International Conference on Neutrinos and Dark Matter [Virtual].

58. ** September 2022: *(Invited Talk)* "Theory Overview of Coherent Elastic and Inelastic Neutrino-Nucleus Scattering", CIPANP 2022, 14th Conference on the Intersections of Particle and Nuclear Physics, Orlando, Florida.

57. ** August 2022: *(Invited Plenary Talk)* "Potential Constraints to Neutrino - Nucleus Interactions Based on Electron Scattering Data", NuFact 2022, 23rd International Workshop on Neutrinos from Accelerators, Salt Lake City, Utah.

56. ** May 2022: *(Invited Talk)* "Low Energy Neutrino-Nucleus Interactions", Mitchell Conference on Collider, Dark Matter, and Neutrino Physics 2022, Texas A&M University, College Station, Texas.

55. ** March 2022: *(Invited Talk)* "Low Energy Neutrino Interactions", NuSTEC Workshop on Electron Scattering [Virtual].

54. ** February 2022: *(Conference Summary Talk)* "FPF White Paper: Neutrino Event Generators", 4th Forward Physics Facility (FPF) Meeting [Virtual].

53. ** January 2022: *(Invited Talk)* "Neutrinos at the Forward Physics Facility at CERN", Workshop on Neutrino-Nucleus Interactions in the Standard Model and Beyond, CERN, Geneva, Switzerland.

52. ** September 2021: *(Invited Talk)* "The influence of cross section uncertainties on oscillation analyses", NuFact 2021, 22nd International Workshop on Neutrinos from Accelerators, Cagliari, Italy.

51. June 2021: *(Seminar)* "SBND-PRISM: Sampling Multiple Off-Axis Fluxes with the Same Detector", NuSTEC Cross Experimental Working Group Meeting [Virtual].

50. ** May 2021: *(Invited Talk)* "Neutrino Cross-Section Opportunities at FPF at CERN", 2nd Forward Physics Facility (FPF) Meeting [Virtual].

49. ** March 2021: *(Invited Talk)* "Low-energy neutrino-nucleus interactions: theory and generators", New Directions in Neutrino-Nucleus Scattering NuSTEC Workshop [Virtual].

48. ** March 2021: *(Invited Panelist)* Invited panelist in the "Neutrino Interaction Discussion Session", NuSTEC New Directions in Neutrino-Nucleus Scattering Workshop [Virtual].

47. February 2021: *(Seminar)* "Neutrino interactions and the quest for new and precision physics searches in neutrino experiments", Particle Physics Seminar, Brookhaven National Laboratory, Upton, NY, USA [Virtual].

46. ** February 2021: *(Invited Talk)* "Synergy between nuclear physics in CEvNS experiments and long-baseline oscillation experiments", First Workshop of The BSM-Nu Project (P2IO labex, Saclay) [Virtual].

45. ** December 2020: *(Invited Talk)* "Coherent elastic and inelastic neutrino-nucleus scattering at stopped-pion sources", NuSTEC board annual meeting, December, 2020 [Virtual].

44. ** December 2020: *(Invited Panelist)* Invited panelist in the "Low Energy Neutrino Interaction Discussion Session", Low Energy Physics in Liquid Argon (LEPLAr) Workshop (organized by the DUNE collaboration) [Virtual].

43. December 2020: *(Collaboration Meeting)* "Theoretical Motivation: CEvNS, NSI and inelastic neutrino-nucleus scattering physics prospects in CCM", CCM collaboration meeting, December, 2020 [Virtual].

42. ** November 2020: *(Invited Talk)* "Coherent Elastic and Inelastic Neutrino-Nucleus Scattering Within a Many-Body Nuclear Theory Approach", Magnificent CEvNS 2020, November, 2020 [Virtual].

41. ** October 2020: *(Invited Seminar)* "Nuclear Physics Aspects of Coherent Elastic Neutrino-Nucleus Scattering", Nuclear Physics Seminar, University of Kentucky, Lexington, Kentucky, USA [Virtual].

40. ** September 2020: *(Invited Seminar)* "Nuclear Physics Aspects of Coherent Elastic Neutrino-Nucleus Scattering", SBN-Theory meetings, Fermilab, Batavia, Illinois, USA [Virtual].

39. ** August 2020: *(Invited Talk)* "The influence of cross section uncertainties on oscillation analyses", NUFACT 2020, 22nd International Workshop on Neutrinos from Accelerators, Cagliari, Italy [Conference postponed due to Covid-19].

38. July 2020: *(Conference)* "Constraining Nuclear Structure Physics in Coherent Elastic Neutrino-Nucleus Scattering", New Perspectives 2020, Fermilab, Batavia, Illinois, USA [Virtual].

37. March 2020: *(Seminar)* "Lepton-nucleus scattering within Hartree-Fock and continuum Random Phase Approximation approach", Neutrino Joint Theory-Experiment WG Meeting, Fermilab, Batavia, Illinois, USA.

36. March 2020: *(Seminar)* "Low-energy neutrino-nucleus cross section calculations and prospects of measuring them in SBND", SBND meeting, Fermilab, Batavia, Illinois, USA.

35. ** November 2019: *(Invited Talk)* "Short-Baseline Neutrino Program at Fermi National Accelerator Laboratory", 86th annual meeting of the Southeastern Section of the American Physical Society (SESAPS) 2019, Wrightsville Beach, North Carolina, USA.

34. September 2019: *(Seminar)* "Low-energy lepton-nucleus scattering: nue, numu cross section", MicroBooNE oscillations meeting, Fermilab, Batavia, Illinois, USA.

33. July 2019: *(Seminar)* "Lepton-nucleus scattering and the search for new and precision physics in neutrino experiments", P-25 Seminar, Los Alamos National Laboratory, Los Alamos, New Mexico, USA.

32. July 2019: *(Collaboration Meeting)* "Neutrino-argon cross sections and non-standard neutrino interactions in CCM", CCM collaboration meeting, Los Alamos National Laboratory, Los Alamos, New Mexico, USA.

31. June 2019: *(Collaboration Meeting)* "Low-energy neutrino-nucleus interactions: nue, numu cross section", SBND collaboration meeting, University of Michigan, Ann Arbor, Michigan, USA.

30. May 2019: *(Seminar)* "Neutrino-Nucleus Interactions and Recent Ar(e,e ′) Measurements at Jefferson Lab", Center for Neutrino Physics Research Day at Virginia Tech, Blacksburg, Virginia, USA.

29. January 2019: *(Seminar)* "Neutrino-oscillation and neutrino-interaction physics at Virginia Tech", research seminar presented to first year graduate students at Virginia Tech, Virginia, USA.

28. January 2019: *(Seminar)* "Lepton-nucleus scattering and its impact on the precision and new physics searches at the intensity frontier experiments", Theory Seminar, Physics Division, Argonne National Laboratory, Lemont, Illinois, USA.

27. ** December 2018: *(Invited Talk)* "Hartree-Fock & continuum RPA calculations of lepton-nucleus interactions, and recent Ar(e, e') measurements at Jlab", Physics Opportunities in the Near DUNE Detector Hall: PONDD, Fermilab, Batavia, Illinois, USA.

26. ** October 2018: *(Conference Summary Talk)* "Theory: Summary and Outlook", NuInt 18, 12th International Workshop on Neutrino-Nucleus Interactions in the Few-GeV Region, Gran Sasso Science Institute, L'Aquila, Italy.

25. ** October 2018: *(Invited Talk)* "Lepton-nucleus cross sections within Hartree-Fock and continuum random phase approximation approach", NuInt 18, 12th International Workshop on Neutrino-Nucleus Interactions in the Few-GeV Region, Gran Sasso Science Institute, L'Aquila, Italy.

24. ** August 2018: *(Conference Summary Talk)* "Summary and Outlook of Working Group 2 (Neutrino Scattering Physics)", NUFACT2018, 20th International Workshop on Neutrino Factories and Future Neutrino Facilities, Virginia Tech, Blacksburg, Virginia, USA.

23. ** August 2018: *(Invited Plenary Talk)* "Cross sections, electron scattering, and new results from electron-argon experiment at Jefferson Lab", NUFACT2018, 20th International Workshop on Neutrino Factories and Future Neutrino Facilities, Virginia Tech, Blacksburg, Virginia, USA.

22. ** June 2018: *(Invited Talk)* "An overview of neutrino cross sections and challenges", Workshop on near detector physics at neutrino experiments, CERN, Geneva, Switzerland.

21. April 2018: *(Seminar)* "Nuclear physics of neutrino-oscillation endeavour", Center for Neutrino Physics seminar at Virginia Tech, Blacksburg, Virginia, USA.

20. March 2018: *(Conference)* "First cross section results from e-Ar experiment at Jefferson Lab", INT Program INT-18-1a, Nuclear ab initio Theories and Neutrino Physics, Institute for Nuclear Theory, Seattle, Washington, USA.

19. ** January 2018: *(Invited Talk)* "Status of electron scattering studies on argon and titanium nucleus at Jefferson Lab", Hall A Collaboration Meeting, Jefferson Lab, Newport News, Virginia, USA.

18. December 2017: *(Seminar)* "Neutrino-oscillation and neutrino-interaction physics", research seminar presented to first year graduate students at Virginia Tech, Virginia, USA.

17. July 2017: *(Seminar)* "Impact of nuclear effects on accelerator-based neutrino-oscillation physics", seminar at CEA, Saclay, France.

16. July 2017: *(Seminar)* "Impact of nuclear effects on accelerator-based neutrino-oscillation physics", seminar at Ghent University, Ghent, Belgium.

15. ** July 2017: *(Invited Talk)* "Study of argon and titanium nucleus at JLab and its impact on liquid argon based neutrino experiments", International Workshop on (e,e'p) Processes, Bled, Slovenia.

14. June 2017: *(Seminar)* "Impact of nuclear effects on accelerator-based neutrino-oscillation physics", Doctoral Training Program on Microscopic Theories of Nuclear Structure, Dynamics and Electroweak Currents, ECT*, Trento, Italy.

13. April 2017: *(Collaboration Meeting)* "What can we learn from electron scattering for neutrino scattering", MicroBooNE collaboration meeting, Fermilab, Batavia, Illinois, USA.

12. Dec 2016: *(Seminar)* "Neutrino interactions around quasielastic peak: What would theorists do?", MicroBooNE cross sections working group meeting, Fermilab, Batavia, Illinois, USA.

11. July 2016: *(Seminar)* "Modeling electron- and neutrino-nucleus scattering in kinematics relevant for accelerator-based neutrino-oscillation experiments", Particle Physics Seminar, Brookhaven National Laboratory, Upton, New York, USA.

10. ** July 2016: *(Invited Review Talk)* "A review on recent theoretical developments in neutrino interaction modeling at the quasielastic peak", NuTune2016, Workshop on Global Fits to Neutrino Scattering Data and Generator Tuning, University of Liverpool, England.

9. ** April 2016: *(Invited Talk)* "Low energy excitations to quasielastic scattering", Two-body current contributions in neutrino-nucleus scattering, ESNT, CEA Saclay, France.

8. May 2015: *(Conference)* "Quasielastic neutrino-nucleus scatterings at intermediate energies", BriX workshop, University of Liège, Liège, Belgium.

7. May 2015: *(Conference)* "Modeling quasielastic neutrino-nucleus scatterings in few-GeV region", Annual scientific meeting of the Belgian Physical Society, University of Liège, Liège, Belgium.

6. ** August 2014: *(Invited Talk)* "Quasielastic neutrino-nucleus scattering within a continuum random phase approximation approach", NUFACT2014, XVIth International Workshop on Neutrino Factories and Future Neutrino Facilities, Glasgow, Scotland.

5. October 2013: *(Seminar)* "Charged-current quasielastic neutrino-nucleus scattering for accelerator-based neutrino oscillation experiments", Fens inside-out (journal club), Ghent University, Ghent, Belgium.

4. March 2013: *(Conference)* "Modeling quasielastic neutrino-nucleus scattering at intermediate energies", Annual Brix-IAP workshop, Oostende, Belgium.

3. April 2010: *(Seminar)* "Neutrino masses in type IIB compactification on a Swiss-Cheese Calabi-Yau framework", seminar at Indian Institute of Technology (IIT) Roorkee, India.

2. March 2010: *(Seminar)* "Structures of proton rich nuclei", seminar at Indian Institute of Technology (IIT) Roorkee, India.

1. July 2009: *(Seminar)* "Stimulated Raman scattering studies in one dimensional Mott-Hubbard systems", seminar at Raja Ramanna Centre for Advanced Technology, Indore, India.

Selected Publications

[A selected list of journal articles, review articles, white papers and reports, and conference proceedings. A full list of publications can be found at INSPIRE-HEP.]

45. *(ESPPU White Paper)* R. Acciarri *et al.* "The Short-Baseline Near Detector at Fermilab," [arXiv:2504.00245 [hep-ex]].

44. *(ESPPU White Paper)* L. Alvarez-Ruso *et al.* "Neutrino Scattering: Connections Across Theory and Experiment," [arXiv:2503.23556 [hep-ex]].

43. *(Journal Article)* M. Jung Jung, **V. Pandey**, G. Putnam and D. W. Schmitz, "Neutrino Induced Charged Current Coherent Pion Production for Constraining the Muon Neutrino Flux at DUNE," [arXiv:2502.02576 [hep-ph]].

42. *(Conference Proceedings)* S. Carey and **V. Pandey**, "Low-Energy Neutrino-Nucleus Scattering and New Physics," [arXiv:2412.18055 [hep-ph]].

41. *(Journal Article)* A. A. Aguilar-Arevalo *et al.*, "Physics Opportunities at a Beam Dump Facility at PIP-II at Fermilab and Beyond," [arXiv:2311.09915 [hep-ex]].

40. *(Invited Review Article)* **V. Pandey**, "Recent Progress in Low Energy Neutrino Scattering Physics and Its Implications for the Standard and Beyond the Standard Model Physics," Prog. Part. Nucl. Phys. **134**, 104078 (2024) [arXiv:2309.07840 [hep-ph]].

39. *(Conference Proceedings)* **V. Pandey**, "Potential Constraints to Neutrino-Nucleus Interactions Based on Electron Scattering Data," Phys. Sci. Forum 8, 1 (2023) [arXiv:2306.03896 [hep-ex]].

38. *(Snowmass Frontier Report)* P. Huber *et al.* "Snowmass Neutrino Frontier Report," [arXiv:2211.08641 [hep-ex]].

37. *(Snowmass Topical Group Report)* A. B. Balantekin, S. Gardiner, K. Mahn, T. Mohayai, J. Newby, **V. Pandey**, J. Zettlemoyer *et al.* "Snowmass Neutrino Frontier: Neutrino Interaction Cross Sections (NF06) Topical Group Report," [arXiv:2209.06872 [hep-ex]].

36. *(Journal Article)* B. Dutta, W. C. Huang, J. L. Newstead and **V. Pandey**, "Inelastic nuclear scattering from neutrinos and dark matter," Phys. Rev. D **106**, 113006 (2022) [arXiv:2206.08590 [hep-ph]].

35. *(Snowmass White Paper)* J. M. Campbell *et al.* "Event Generators for High-Energy Physics Experiments," SciPost Phys. **16**, 130 (2024) [arXiv:2203.11110 [hep-ph]].

34. *(Snowmass White Paper)* A. M. Ankowski *et al.* "Electron Scattering and Neutrino Physics," J. Phys. G **50**, 120501 (2023) [arXiv:2203.06853 [hep-ex]].

33. *(Snowmass White Paper)* M. Abdullah *et al.* "Coherent elastic neutrino-nucleus scattering: Terrestrial and astrophysical applications," [arXiv:2203.07361 [hep-ph]].

32. *(Journal Article)* J. L. Feng *et al.* "The Forward Physics Facility at the High-Luminosity LHC," J. Phys. G 50, 030501 (2023) [arXiv:2203.05090 [hep-ex]].

31. *(Journal Article)* L. Jiang *et al.* [Jefferson Lab Hall A], "Determination of the argon spectral function from $(e, e'p)$ data," Phys. Rev. D **105**, 112002 [arXiv:2203.01748 [nucl-ex]]

30. *(Journal Article)* S. Dolan, A. Nikolakopoulos, O. Page, S. Gardiner, N. Jachowicz and **V. Pandey**, "Implementation of the CRPA model in the GENIE event generator and analysis of nuclear effects in low-energy transfer neutrino-nucleus interactions," Phys. Rev. D **106**, 073001 (2022) [arXiv:2110.14601 [hep-ex]].

29. *(Journal Article)* L. A. Anchordoqui *et al.*, "The Forward Physics Facility: Sites, Experiments, and Physics Potential," Phys. Rept. 968, 1-50 (2022) [arXiv:2109.10905 [hep-ph]].

28. *(Journal Article)* A. A. Aguilar-Arevalo *et al.* [CCM Collaboration], "First Dark Matter Search Results From Coherent CAPTAIN-Mills," Phys. Rev. **D** 106, 012001 (2022) [arXiv:2105.14020 [hep-ex]].

27. *(Journal Article)* O. Tomalak, P. Machado, **V. Pandey** and R. Plestid, "Flavor-dependent radiative corrections in coherent elastic neutrino-nucleus scattering," JHEP **02** 097 (2021) [arXiv:2011.05960 [hep-ph]].

26. *(Journal Article)* A. Nikolakopoulos, **V. Pandey**, J. Spitz and N. Jachowicz, "Quasielastic interactions of monoenergetic kaon decay-at-rest neutrinos," Phys. Rev. C **103**, 064603 (2021) [arXiv:2010.05794 [nucl-th]].

25. *(Invited Journal Article) (Editor's Choice)* N. Van Dessel, **V. Pandey**, H. Ray and N. Jachowicz, "Cross sections for coherent elastic and inelastic neutrino-nucleus scattering", Universe 9, 207 (2023) [arXiv:2007.03658 [nucl-th]].

24. *(Conference Proceedings)* A. Nikolakopoulos, N. Jachowicz, R. González-Jiménez, J. M. Udías, K. Niewczas and **V. Pandey**, "Non-trivial differences between charged current ν_e and ν_μ induced interactions with nuclei," PoS NuFact2019, 048 (2020).

23. *(Journal Article)* M. Murphy *et al.* [The Jefferson Lab Hall A Collaboration], "Measurement of the cross sections for inclusive electron scattering in the E12-14-012 experiment at Jefferson Lab", Phys Rev. C**100**, 054606 (2019) [arXiv:1908.01802 [hep-ex]].

22. *(Journal Article)* A. Nikolakopoulos, N. Jachowicz, N. Van Dessel, K. Niewczas, R. González-Jiménez, J. Manuel Udías, **V. Pandey**, "Electron versus muon neutrino induced cross sections in charged current quasi-elastic processes", Phys. Rev. Lett. **123**, 052501 (2019) [arXiv:1901.08050 [nucl-th]].

21. *(Conference Proceedings)* **V. Pandey**, H. Dai, M. Murphy, and D. Abrams, "Electron-argon scattering studies at Jefferson Lab", PoS NUFACT2018, 017 (2019).

20. *(Conference Proceedings)* K. Niewczas, N. Jachowicz, A. Nikolakopoulos, J. Nys, N. Van Dessel, R. González Jiménez, and **V. Pandey**, "Modeling neutrino-nucleus interactions in the few-GeV region", PoS NUFACT2018, 031 (2019).

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