

Nirupama Sensharma

University of Notre Dame, Notre Dame, IN, USA
nsenshar@nd.edu • linkedin.com/in/nirupama-sensharma

Education

University of Notre Dame , Notre Dame, IN Ph.D. Physics	May 2021
University of Notre Dame , Notre Dame, IN M.S. Physics	May 2018
University of Delhi , Delhi, India M.Tech. Nuclear Science and Technology	May 2015
University of Delhi , Delhi, India B.Sc. Physics (Honors)	May 2012

Current Position

Assistant Professor, Department of Physics and Astronomy University of Notre Dame, Notre Dame, IN	July 2026–Present
---	-------------------

Research Experience

Postdoctoral Associate, Department of Physics Argonne National Laboratory, Lemont, IL	July 2023–June 2026
---	---------------------

- Conducted low-energy nuclear physics experiments with the Gammasphere and GREYINA detector arrays.
- Involved in the experimental setup and maintenance efforts for the Gammasphere and GREYINA arrays to ensure optimal performance.
- Advanced data analysis for low-energy nuclear structure physics experiments using custom Python, C, and C++ programs.
- Served as one of the primary scientific leads of the GREYINA installation and management team, overseeing on-call responsibilities, detector maintenance, and troubleshooting data acquisition system issues.
- Authored and contributed to research proposals and publications in high-impact peer-reviewed journals.
- Mentored and trained undergraduate students appointed through the Science Undergraduate Laboratory Internship (SULI) program at Argonne National Laboratory.

Postdoctoral Associate, Department of Physics and Astrophysics University of North Carolina at Chapel Hill, Chapel Hill, NC	May 2021–June 2023
---	--------------------

- Worked at the Triangle Universities Nuclear Laboratory (TUNL) and performed low-energy nuclear physics experiments using the High Intensity Gamma-ray Source (HIGS).
- Participated in the experimental setup and maintenance of the Clovershare array.
- Published three papers in peer-reviewed journals establishing the coexistence of single-particle and collective excitations in ^{62}Co , ^{64}Cu , and ^{66}Zn nuclei.
- Mentored and trained early-career graduate students, providing guidance in data analysis techniques and research methodologies.

Graduate Research Assistant, Department of Physics

Aug. 2015–May 2021

University of Notre Dame, Notre Dame, IN and Argonne National Laboratory, IL

- Conducted four experiments using the Gammasphere facility at Argonne National Laboratory to investigate the exotic phenomena of wobbling and chirality in ^{135}Pr and ^{187}Au nuclei.
- Wrote and implemented C/C++ codes for data reduction and performed in-depth analyses using gamma-ray spectroscopy techniques to obtain information on triaxial nuclei.
- Established the existence of longitudinal wobbling in ^{187}Au , with the research featured as a highlight in *Nature*, *Science*, and *Popular Mechanics*, and as a Synopsis in *Physics*, the online magazine of the American Physical Society.

Research Intern, Nuclear Physics Laboratory

Dec. 2014–June 2015

Variable Energy Cyclotron Centre (VECC), Kolkata, India

- Developed and standardized an angular correlation setup using LaBr_3 detectors.
- Employed Perturbed Angular Correlation techniques to measure quadrupole moments of excited nuclear states in the $Z = 64$ region.

Research Intern, Nuclear Physics Laboratory

June 2014–Aug. 2014

Bhabha Atomic Research Centre (BARC), Mumbai, India

- Developed and characterized a hybrid radiation detector using a CsI(Tl) scintillator coupled to a PIN diode and silicon pad detector for detection of alpha particles and fission fragments.

Research Intern, Nuclear Physics Laboratory

Dec. 2013–Jan. 2014

Variable Energy Cyclotron Centre (VECC), Kolkata, India

- Conducted experiments using a Gas Electron Multiplier (GEM) detector and optimized the operation of a triple-GEM system by measuring energy resolution and operating voltage using a ^{55}Fe X-ray source.

Research Intern, Reactor Design Group

Dec. 2012–Jan. 2013

Indira Gandhi Centre for Atomic Research (IGCAR), Tamil Nadu, India

- Developed C++ and Python codes to study nuclear processes occurring within nuclear reactors.
- Standardized ORIGEN calculations to determine the fraction of minor actinides transmuted in a 1000 MWe metal fast breeder reactor.

Research Intern, Physics Division

June 2012–Aug. 2012

Atomic Minerals Directorate for Exploration and Research, Delhi, India

- Utilized radiometric assay devices, including Geiger–Müller counters and scintillometers, to determine equivalent U, Th, and K concentrations in geological samples collected from various regions of India.

Publications

-
1. N. Sensharma, U. Garg, Q. B. Chen, S. Frauendorf, S. Zhu, J. Arroyo, A. D. Ayangeakaa, D. P. Burdette, M. P. Carpenter, P. Copp, J. L. Cozzi, S. S. Ghugre, D. J. Hartley, K. B. Howard, R. V. F. Janssens, F. G. Kondev, T. Lauritsen, J. Li, R. Palit, A. Saracino, D. Seweryniak, S. Weyhmler, and J. Wu. *Evolution of chirality from transverse wobbling in ^{135}Pr* . *Physical Review C* **113**, 024313 (2026).
 2. Shahina, K. T. Macon, A. Boeltzig, R. J. deBoer, M. Febbraro, S. Aguilar, T. Anderson, S. P. Burcher, Y. Chen, A. Clark, A. Dombos, C. Dulal, B. Frentz, G. Gilardy, O. Gomez, J. Görres, A. Gula, S. Henderson, K. B. Howard, K. L. Jones, J. Kelley, R. Kelmar, J. M. Kovoov, Q. Liu, A. Majumdar, K.

- Manukyan, L. Morales, S. Mosby, S. Moylan, A. Nelson, S. Pain, P. Scholz, C. Reingold, M. Renaud, **N. Sensharma**, C. Seymour, G. Seymour, E. Stech, W. Tan, R. Toomey, B. Vande Kolk, J. Wilkinson, and M. Wiescher. *Low-energy measurement of the $^{25}\text{Mg}(\alpha, n)^{28}\text{Si}$ reaction via neutron spectroscopy*. Physical Review C **113**, 035802 (2026).
3. S. Kumar, D. Ackermann, J. Piot, D. Seweryniak, V. Karayonchev, S. Antalic, Ch. Stodel, A. Bahini, B. Andel, K. Bhatt, C. Burns, M. Carpenter, R. Chakma, A. Ertoprak, K. Hauschild, F. G. Kondev, A. Korichi, T. Lauritsen, A. Lopez-Martens, A. McFarlane, J. Mišt, C. Müller-Gatermann, D. Potterveld, S. Raeder, W. Reviol, H. Savajols, **N. Sensharma**, R. S. Sidhu, M. Siciliano, and B. Sulignano. *Towards the limits of stability – New decay study of the lightest Mendelevium isotopes*. Acta Physica Polonica B Proceedings Supplement **19**, 1-A24 (2026).
 4. G. Corbari, M. Ciemala, S. Bottoni, S. Leoni, B. Fornal, R.V.F. Janssens, S.D. Pain, A. Ratkiewicz, F. C. L Crespi, M. Siciliano, E. Albanese, A.D. Ayangeakaa, G. Benzoni, C.M. Campbell, S.R. Carmichael, M. Carpenter, K. Chipps, N. Cieplicka-Oryńczak, J.A. Cizewski, P. Copp, J. Forson, E. Gamba, H.I. Garland, R. Ghimire, M. Hall, Ł.W. Iskra, H. Jayatissa, K. Jones, F. Kondev, J. Kovoov, T. Lauritsen, A. Maj, B. Million, C. Mueller-Gatermann, A. Palmisano-Kyle, M. Poletini, C. Porzio, W. Reviol, **N. Sensharma**, D. Seweryniak, H. Sims, C.C. Ummel, O. Wieland, G. Wilson, S. Zhu, S. Ziliani, J. Okołowicz and M. Płoszajczak *Impact of the continuum on the γ decay of the lowest 2^+ states in ^{14}C* . Physics Letters B **140630** (2026).
 5. J. Tang, A. D. Ayangeakaa, C. J. Chiara, E. A. McCutchan, G. H. Bhat, Nazira Nazir, J. A. Sheikh, S. Jehangir, R. Palit, S. Zhu, R. V. F. Janssens, A. Saracino, H. M. Albers, S. Balderrama, B. V. Beskar, L. Cañete, M. P. Carpenter, J. J. Carroll, P. A. Copp, D. T. Doherty, P. Golubev, D. J. Hartley, Y. Hrabar, F. E. Idoko, H. Jayatissa, M. Miranda, C. Müller-Gatermann, N. N. O'Briant, F. G. Kondev, T. M. Kowalewski, T. Lauritsen, W. Reviol, D. Rudolph, J. Rufino, L. A. Schaedig, **N. Sensharma**, D. Seweryniak, M. Siciliano, J. R. Vanhoy, W. B. Walters, and G. L. Wilson. *Observation of high-spin triaxially deformed multi-quasiparticle structures in ^{70}Ge* . Submitted to Physical Review C (2026).
 6. **N. Sensharma**, A. D. Ayangeakaa, T. M. Kowalewski, R. V. F. Janssens, Y. M. Wang, Q. B. Chen, J. M. Allmond, C. M. Campbell, S. R. Carmichael, M. P. Carpenter, P. Copp, C. Cousins, M. Devlin, U. Garg, C. Müller-Gatermann, D. J. Hartley, J. Heery, J. Henderson, H. Jayatissa, S. R. Johnson, S. P. Kisiov, F. G. Kondev, T. Lauritsen, S. Nandi, R. Rathod, W. Reviol, M. Rocchini, E. Rubino, R. Russell, A. Saracino, D. Seweryniak, M. Siciliano, and C. Y. Wu. *Evidence for triaxial shape coexistence in ^{74}Ge* . Physical Review C **112**, 024311 (2025).
 7. J. Henderson, J. Heery, M. Rocchini, M. Siciliano, **N. Sensharma**, A. D. Ayangeakaa, R. V. F. Janssens, T. M. Kowalewski, Abhishek, P. D. Stevenson, E. Yüksel, B. A. Brown, T. R. Rodríguez, L. M. Robledo, C. Y. Wu, S. Kisiov, C. Müller-Gatermann, V. Bildstein, L. Cañete, C. M. Campbell, S. R. Carmichael, M. P. Carpenter, W. N. Catford, P. Copp, C. Cousins, M. Devlin, D. T. Doherty, P. E. Garrett, U. Garg, L. P. Gaffney, K. Hadynska-Klek, D. J. Hartley, S. F. Hicks, H. Jayatissa, S. R. Johnson, D. Kalaydjieva, F. Kondev, D. Lascar, T. Lauritsen, G. Lotay, N. Marchini, M. Matejska-Minda, S. Nandi, A. Nannini, C. O'Shea, S. Pascu, C. J. Paxman, A. Perkoff, E. E. Peters, Zs. Podolyák, A. Radich, R. Rathod, B. J. Reed, P. H. Regan, W. Reviol, E. Rubino, R. Russell, D. Seweryniak, J. R. Vanhoy, and G. L. Wilson. *Deformation and collectivity in doubly magic ^{208}Pb* . Physical Review Letters **134**, 062502 (2025).
 8. T. M. Kowalewski, A. D. Ayangeakaa, **N. Sensharma**, R. V. F. Janssens, Y. M. Wang, Q. B. Chen, J. M. Allmond, C. M. Campbell, S. Carmichael, M. P. Carpenter, P. Copp, C. Cousins, M. Devlin, U. Garg, C. Müller-Gatermann, T. J. Gray, D. J. Hartley, J. Heery, J. Henderson, H. Jayatissa, S. R. Johnson, S. P. Kisiov, F. G. Kondev, T. Lauritsen, S. Nandi, R. Rathod, W. Reviol, M. Rocchini, E. Rubino, R. Russell, A. Saracino, D. Seweryniak, M. Siciliano, and C. Y. Wu. *Triaxiality and shape dynamics in ^{70}Ge* . Physical Review C **112**, 034332 (2025).

9. F. E. Idoko, A. D. Ayangeakaa, **N. Sensharma** *et al.* *High-spin spectroscopy and the onset of quasi-collective structures in ^{69}Ga* . Submitted to Physical Review C (2025).
10. D. Gribble, C. Iliadis, R. V. F. Janssens, U. Friman-Gayer, A. D. Ayangeakaa, A. Champagne, E. Churchman, W. Fox, S. Frye, X. K.-H. James, S. R. Johnson, R. Longland, A. Saracino, **N. Sensharma**, K. Song, and C. Wegner. *Investigation of ^{31}P levels near the proton threshold by nuclear resonance fluorescence and the impact on the $^{30}\text{Si}(p, \gamma)^{31}\text{P}$ thermonuclear rate*. Physical Review C **112**, 025804 (2025).
11. C. Fougères, M. L. Avila, A. Psaltis, M. Anastasiou, S. Bae, L. Balliet, K. Bhatt, L. Dienes, H. Jayatissa, V. Karayonchev, P. Mohr, F. Montes, D. Neto, F. de Oliveira Santos, W.-J. Ong, K. E. Rehm, W. Reviol, D. Santiago-Gonzalez, **N. Sensharma**, R. S. Sidhu, and I. A. Tolstukhin. *First Measurement of $^{87}\text{Rb}(\alpha, xn)$ Cross Sections at Weak r -process Energies in Supernova ν -driven Ejecta to Investigate Elemental Abundances in Low-metallicity Stars*. The Astrophysical Journal **983**, 2 (2025).
12. A. Saracino, S. Zhu, **N. Sensharma**, A. D. Ayangeakaa, R. V. F. Janssens, Q. B. Chen, M. P. Carpenter, P. Chowdhury, A. Gade, F. G. Kondev, T. M. Kowalewski, T. Lauritsen, E. A. McCutchan, and D. Seweryniak. *Collective modes of excitation in ^{64}Cu* . Physical Review C **109**, 024319 (2024).
13. D. Savran, J. Isaak, K. Albe, A. D. Ayangeakaa, M. Beuschlein, S. W. Finch, D. Gribble, A. Gupta, J. Hauf, X. K.-H. James, R. V. F. Janssens, S. R. Johnson, P. Koseoglou, T. M. Kowalewski, B. Löher, O. Papst, N. Pietralla, J. Rohrer, A. Saracino, **N. Sensharma**, W. Tornow, and V. Werner. *Transition width of the $J^\pi = 1^-$ two-phonon state of ^{88}Sr* . Physical Review C **110**, 024312 (2024).
14. G. Corbari, S. Bottoni, M. Ciemała, F. C. L. Crespi, S. Leoni, B. Fornal, R. V. F. Janssens, S. D. Pain, M. Siciliano, E. Albanese, A. D. Ayangeakaa, G. Benzoni, S. R. Carmichael, M. P. Carpenter, K. Chipps, N. Cieplicka, P. Copp, J. Forsen, E. Gamba, L. W. Iskra, H. Jayatissa, F. G. Kondev, T. Lauritsen, B. Million, C. Müller-Gatermann, A. Palmisano, M. Poletti, C. Porzio, W. Reviol, **N. Sensharma**, D. Seweryniak, C. Ummel, O. Wieland, G. Wilson, S. Zhu, and S. Ziliani. *γ decay from the near-neutron-threshold 2^+ state in ^{14}C : A probe of collectivization phenomena in light nuclei*. Acta Physica Polonica B Proceedings Supplement **16**, 4-A33 (2023).
15. **N. Sensharma**. *Wobbling Motion in Nuclei: Transverse, Longitudinal, and Chiral*. Springer Nature, Springer Theses Series (2022).
16. **N. Sensharma**, A. D. Ayangeakaa, R. V. F. Janssens, Q. B. Chen, S. Zhu, M. Alcorta, M. P. Carpenter, E. A. McCutchan, F. G. Kondev, T. Lauritsen, D. Seweryniak, C. R. Hoffman, A. M. Rogers, A. Gade, T. Baugher, and P. Chowdhury. *Single-particle and dipole excitations in ^{62}Co* . Physical Review C **105**, 044315 (2022).
17. A. D. Ayangeakaa, **N. Sensharma**, M. Fulghieri, R. V. F. Janssens, Q. B. Chen, S. Zhu, M. Alcorta, M. P. Carpenter, P. Chowdhury, A. Gade, C. R. Hoffman, F. G. Kondev, T. Lauritsen, E. A. McCutchan, A. M. Rogers, and D. Seweryniak. *Single-particle and collective excitations in ^{66}Zn* . Physical Review C **105**, 054315 (2022).
18. B. Vande Kolk, K. T. Macon, R. J. deBoer, T. Anderson, A. Boeltzig, K. Brandenburg, C. R. Brune, Y. Chen, A. M. Clark, T. Danley, B. Frentz, R. Giri, J. Görres, M. Hall, S. L. Henderson, E. Holmbeck, K. B. Howard, D. Jacobs, J. Lai, Q. Liu, J. Long, K. Manukyan, T. Massey, M. Moran, L. Morales, D. Odell, P. O'Malley, S. N. Paneru, A. Richard, D. Schneider, M. Skulski, **N. Sensharma**, C. Seymour, G. Seymour, D. Soltesz, S. Strauss, A. Voinov, L. Wüstrich, and M. Wiescher. *Investigation of the $^{10}\text{B}(p, \alpha)^7\text{Be}$ reaction from 0.8 to 2.0 MeV*. Physical Review C **105**, 055802 (2022).
19. **N. Sensharma**, U. Garg, Q. B. Chen, S. Frauendorf, D. P. Burdette, J. L. Cozzi, K. B. Howard, S. Zhu, M. P. Carpenter, P. Copp, F. G. Kondev, T. Lauritsen, J. Li, D. Seweryniak, J. Wu, A. D. Ayangeakaa,

- D. J. Hartley, R. V. F. Janssens, A. M. Forney, W. B. Walters, S. S. Ghugre, and R. Palit. *Longitudinal wobbling motion in ^{187}Au* . Physical Review Letters **124**, 052501 (2020).
20. Y. K. Gupta, B. K. Nayak, U. Garg, K. Hagino, K. B. Howard, **N. Sensharma**, M. Senyigit, W. P. Tan, P. D. O'Malley, M. Smith, Ramandeep Gandhi, T. Anderson, R. J. deBoer, B. Frentz, A. Gyurjinyan, O. Hall, M. R. Hall, J. Hu, E. Lamere, Q. Liu, A. Long, W. Lu, S. Lyons, K. Ost diek, C. Seymour, M. Skulski, and B. Vande Kolk. *Determination of hexadecapole (β_4) deformation of the light-mass nucleus ^{24}Mg using quasi-elastic measurement*. Physics Letters B **806**, 135473 (2020).
21. **N. Sensharma**, U. Garg, S. Zhu, A. D. Ayangeakaa, S. Frauendorf, W. Li, G. H. Bhat, J. A. Sheikh, M. P. Carpenter, Q. B. Chen, J. L. Cozzi, S. S. Ghugre, Y. K. Gupta, D. J. Hartley, K. B. Howard, R. V. F. Janssens, F. G. Kondev, T. C. McMaken, R. Palit, J. Sethi, D. Seweryniak, and R. P. Singh. *Two-phonon wobbling in ^{135}Pr* . Physics Letters B **792**, 170 (2019).

Work Experience

Founder, Nuclear Energy – The Better Energy May 2018–Present
University of Notre Dame, Notre Dame, IN

- Founded an initiative to promote awareness of the peaceful uses of nuclear energy through public outreach campaigns and educational activities.
- Designed the organization website and supervised an international team of nine members located in the United States, India, France, Germany, and Spain.
- Serve as the Editor-in-Chief of a bimonthly magazine and regularly write and edit articles and newsletters published by the team.

Co-President, Graduate Consulting Club of Notre Dame (NDGCC) May 2018–Jan. 2021
University of Notre Dame, Notre Dame, IN

- Served as a founding member of the club, contributing to its growth to over 300 members in 2 years.
- Collaborated with consulting firms across the United States to organize seven workshops and two networking events.
- Drafted the club constitution, organized officer recruitment programs, and designed newsletters.
- Managed marketing and social media platforms, increasing viewership by 85%.

Teaching Assistant, Department of Physics Aug. 2015–May 2018
University of Notre Dame, Notre Dame, IN

- Conducted help sessions to communicate advanced physics concepts to approx. 80 undergraduate students.
- Assisted with experiments in two undergraduate physics laboratories serving approx. 150 students.
- Managed three undergraduate students and supervised their summer research internship projects.

Presentations

University of Notre Dame, Notre Dame, IN, USA Mar. 2026
Invited Talk: “*Why Nuclear Shape Matters in the Search for Neutrino Mass?*”

Argonne National Laboratory, Lemont, IL, USA Dec. 2025
Invited Talk: “*Deformation, Collectivity, and Beyond: Multi-probe Nuclear Structure Studies for $0\nu\beta\beta$ -Decay Candidates*”

Nuclear Physics Division of the APS, Chicago, IL, USA Contributed Talk: “ <i>Shape and Structure of ^{130}Te Relevant to $0\nu\beta\beta$ Decay</i> ”	Oct. 2025
Low Energy Community Meeting (LECM 2025), Texas A&M University, College Station, TX, USA Invited Talk: “ <i>GRETINA Campaign at ATLAS (2024–2025)</i> ”	Aug. 2025
Gordon Research Conference (GRC 2025) Invited Talk: “ <i>Triaxiality and Shape Coexistence in $0\nu\beta\beta$-Decay Candidates</i> ”	Jun. 2025
Frontiers in Gamma Spectroscopy (FIG 2025), Tata Institute of Fundamental Research, Mumbai, India Invited Talk: “ <i>Triaxiality and Shape Coexistence in $0\nu\beta\beta$-Decay Candidates</i> ”	Mar. 2025
Nuclear Physics Division of the APS, Boston, MA, USA Contributed Talk: “ <i>Coulomb Excitation of ^{130}Te</i> ”	Oct. 2024
19th Nuclear Structure Conference (NS2024), Argonne National Laboratory, Lemont, IL, USA Contributed Talk: “ <i>Triaxiality and Shape Evolution in Even-Even Ge Isotopes</i> ”	July 2024
APS April Meeting, Sacramento, CA, USA Contributed Talk: “ <i>Coulomb Excitation of ^{74}Ge</i> ”	Apr. 2024
Argonne National Laboratory, Lemont, IL, USA Invited Talk: “ <i>Nuclear Structure Physics from a Multidimensional Approach</i> ”	Mar. 2023
Nuclear Physics Division of the APS, New Orleans, LA, USA Contributed Talk: “ <i>Coulomb Excitation in ^{74}Ge</i> ”	Oct. 2022
Shapes and Symmetries in Nuclei: From Experiment to Theory, Orsay, France Invited Talk: “ <i>Wobbling and Chirality in ^{135}Pr</i> ”	May 2022
65th Department of Atomic Energy (DAE) Nuclear Physics Symposium, India Invited Talk: “ <i>Single-Particle and Collective Excitations in the $A\sim 60$ Region</i> ”	Dec. 2021
Nuclear Physics Division of the APS, Online Meeting Contributed Talk: “ <i>Structure of ^{62}Co</i> ”	Oct. 2021
Los Alamos National Laboratory, Los Alamos, NM, USA Invited Talk: “ <i>Wobbling Motion in ^{187}Au</i> ”	Jan. 2021
Previews of the Future in Low-Energy Experimental Nuclear Physics National Postdoctoral Seminar Series Invited Talk: “ <i>Wobbling Motion in ^{187}Au</i> ”	Jan. 2021
Michiana Science Café, Science Policy Initiative at Notre Dame Invited Talk: “ <i>Nuclear Energy – The Better Energy?</i> ”	Sep. 2020
Argonne National Laboratory, Lemont, IL, USA Invited Talk: “ <i>Investigation of Wobbling Motion in the $A\sim 190$ Region</i> ”	Jun. 2020

Nuclear Physics Division of the APS, Arlington, VA, USA Oct. 2019
Contributed Talk: “*Chiral Wobbling in ^{135}Pr* ”

Graduate Physics Society at the University of Notre Dame, Notre Dame, IN Sep. 2019
Poster Presentation: “*Chiral Wobbling in ^{135}Pr* ”

**Fifth Joint Meeting of the Nuclear Physics Divisions of the APS and the JPS
Hilton Waikoloa Village, Hawaii Island, USA** Oct. 2018
Contributed Talk: “*Wobbling Motion in the $A\sim 190$ Region*”

17th Nuclear Structure Conference (NS2018), National Superconducting Cyclotron Laboratory, East Lansing, MI, USA Aug. 2018
Poster Presentation: “*Two-Phonon Wobbling in ^{135}Pr* ”

16th Exotic Beam Summer School (EBSS 2017), Argonne National Laboratory, IL, USA Jul. 2017
Poster Presentation: “*Two-Phonon Wobbling in ^{135}Pr* ”

Outreach & Service

Reviewer for Physical Review C (PRC), Physical Review Letters (PRL), Physics Letters B (PLB), and European Physical Journal A (EPJA) May 2023–Present

- Serve as a reviewer for leading journals in nuclear physics, evaluating manuscripts in experimental low-energy nuclear structure physics, including topics such as Coulomb excitation, nuclear spectroscopy, and collective motion in nuclei.

Mentor, Women in Science and Technology Feb. 2025

- Mentored middle-school girls during the “Introduce a Girl to Engineering Day” event organized by Women in Science and Technology in conjunction with Argonne Education at Argonne National Laboratory.

Local Organizing Committee, Shell Model Symposium, Argonne National Laboratory Jul. 2024

- Served on the local organizing committee for the Shell Model Symposium celebrating the 75th anniversary of the nuclear shell model.

Outreach Member, ND Energy Aug. 2018–May 2021

- Led outreach events and organized nuclear physics demonstrations for elementary and middle-school students from Hamilton Traditional School in South Bend.

Physics of Atomic Nuclei (PAN) Presenter Jun. 2018

- Selected as the only graduate student invited to present to 20 exceptional high-school students from across the United States participating in summer nuclear physics research projects.

STEMentor, Association for Women in Science (AWIS) Aug. 2016–May 2021

- Mentored seven female undergraduate students in STEM, enabling five to obtain research opportunities and two to receive internships at research institutions of their choice.

- Collaborated with the executive board to organize networking events for mentors and mentees.

Outreach Member, Joint Institute for Nuclear Astrophysics (JINA) May 2016–May 2021

- Volunteered as a presenter and judge at science fairs organized in the South Bend community to promote scientific literacy among middle- and high-school students.

Awards & Recognitions

Argonne National Laboratory Employee of the Month Award Jul. 2024

- Awarded by the Low Energy Group of the Physics Division at Argonne National Laboratory for outstanding contributions during the installation of the GRETINA array at ATLAS, leading to a highly successful commissioning.

Participant, 73rd Lindau Nobel Laureate Meeting Jun.–Jul. 2024

- Selected through a global multi-stage evaluation process to participate in the 73rd Lindau Nobel Laureate Meeting held in Lindau, Germany.

Ph.D. Thesis Published in Springer Theses Series Dec. 2022

- Published the dissertation *Wobbling Motion in Nuclei: Transverse, Longitudinal, and Chiral* as a Springer Nature book in the prestigious Springer Theses series recognizing outstanding doctoral research worldwide.

Graduate Research and Dissertation Award May 2021

- Awarded by the Department of Physics at the University of Notre Dame in recognition of outstanding doctoral research and dissertation achievements.

Cornelius P. Browne Memorial Award in Nuclear Physics Mar. 2021

- Received the 2021 Cornelius P. Browne Memorial Award for research on wobbling motion in gold nuclei and exceptional outreach efforts through Nuclear Energy – The Better Energy.

Conference Presentation Grant (CPG) Oct. 2018–Oct. 2019

- Awarded by the University of Notre Dame to present research findings at national conferences.

Notebaert Professional Development Award Oct. 2018–Oct. 2019

- Received a professional development award from the University of Notre Dame to support conference travel and dissemination of research.

Leadership Advanced Socially Engaged Research (LASER) Fellow Aug. 2018–Aug. 2019

- Selected as a member of the inaugural LASER cohort at the University of Notre Dame, receiving a stipend and three course credits.
- Completed a year-long training program focused on ethical research practices and leadership development.

Social Responsibilities of Researchers (SRR) Fellow May 2017–May 2018

- Selected for the NSF-sponsored SRR program at the University of Notre Dame, receiving a stipend and three course credits.
- Completed a rigorous year-long program in ethical and socially engaged research.

Central Board of Secondary Education (CBSE) Scholarship

May 2010–May 2012

- Received the Central Sector Scheme Scholarship for College and University Students for three consecutive years.

Skills & Certifications

Languages: English, Hindi, and Bengali

Computer Skills: C, C++, Python, ROOT, HTML, L^AT_EX, Mathematica, and Linux operating systems

Professional Skills: Data analysis, experimental design and execution, science communication, team management, scientific writing, and mentoring

Certification: Python for Data Science and Machine Learning (Udemy, issued Dec. 2022)