Anjali Nambrath

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Education

University of California, Berkeley (currently)
Ph.D. student in Physics. GPA: 4.0/4.0

Massachusetts Institute of Technology June 2021
S.B. in Physics & Mathematics with minor in French, Phi Beta Kappa. GPA: 4.9/5.0

Research experience

Jacak Group @ UC Berkeley NSF Fellow Sep. 2021 - present

Studying jet substructure by measuring energy correlators in heavy-ion jets.

Tata Institute of Fundamental Research Fulbright-Nehru Student Researcher Apr. 2022 - Dec. 2022

Modeled collective neutrino oscillations in core-collapse supernovae.

MIT Center for Theoretical Physics Undergrad researcher Jan. 2021 - Aug. 2021

Worked with Dr. Katelin Schutz to understand axion gegenschein in the dark matter halo.

Hen Lab – MIT Hadronic Physics Group Undergrad researcher Nov. 2017 - May 2021

Analyzed electron-deuterium scattering data from CLAS to test energy reconstruction methods.

Fermi National Accelerator Laboratory SULI research intern June 2019 - Aug. 2019

Explored and verified the efficacy of reconstruction smearing matrices with electron data from CLAS.

Teaching

MIT Educational Studies Program Teacher (Spark, Splash, HSSP) 2018 - 2021

Taught 25 hours of classes to 300+ local middle and high school students on popular physics topics.

MIT Physics Department Teaching assistant Jan. 2021

Teaching assistant for Computational Data Science in Physics, taught by Prof. Philip Harris. Taught and developed material for recitations twice a week and provided support on weekly data science projects.

MIT Mathematics Department Undergraduate teaching assistant Fall 2020

Teaching assistant for Quantum Computing, taught by Prof. Peter Shor. Assembled lecture notes, moderated online lectures, conducted weekly office hours, and graded weekly problem sets.

Selected awards

National Science Foundation Graduate Research Fellowship 2021-26

Berkeley Fellowship for incoming graduate students at UC Berkeley 2021-23

Finalist for Fulbright-Nehru Student Research award 2021-22

MIT Physics Malcolm Cotton Brown Award (excellence in experimental physics) ..... June 2021

Publications

Axion dark matter-induced echo of supernova remnants Phys. Rev. D 105, 063007 (2022)
Y. Sun, K. Schutz, **A. Nambrath**, et al.

Electron Beam Energy Reconstruction for Neutrino Oscillation Measurements Nature 599 (2021)
M. Khachatryan, A. Papadopoulou, A. Ashkenazi, F. Hauenstein, **A. Nambrath**, et al.

Laser Calibration System for Time of Flight Scintillator Arrays Nucl. Inst. Methods A 973 (2020)
A. Denniston et al.

The CLAS12 Backward Angle Neutron Detector (BAND) Nucl. Inst. Methods A 978 (2020)
E.P. Segarra et al.

Presentations and posters

New Opportunities in Particle and Nuclear Physics with Energy Correlators (invited) May 2025
Energy-energy correlators in jets across collision systems with ALICE

Quark Matter 2025 April 2025
Measuring energy-energy correlators in p-Pb collisions at ALICE (slides)

11th workshop of the APS Topical Group on Hadronic Physics (invited) March 2025
Energy-energy correlators in jets across collision systems (slides)

California EIC Consortium collaboration meeting January 2025
Energy-energy correlators in jets across collision systems with ALICE (slides)

APS Division of Nuclear Physics yearly meeting October 2024
Energy-energy correlators in p-Pb collisions at 5 TeV with the ALICE experiment

Hard Probes 2024 September 2024
Energy-energy correlators of inclusive jets from small to large collision systems with ALICE (slides)

ALICE-USA Meeting 2024 May 2024
Energy-energy correlators in p-Pb collisions at 5.02 TeV

APS April Meeting 2024 April 2024
Energy-energy correlators in p-p and p-Pb collisions (abstract)

Quark Matter 2023 September 2023
Energy-energy correlator measurements in pp and p–Pb collisions at 5.02 TeV with ALICE (abstract)

Fulbright-India Conference November 2022
Flavor conversions in supernova neutrinos

IAIFI Internal Seminar (invited) February 2021
Open Data Science in Physics Courses (with P. Harris, K. Morey, M. Szurek, J. Chongsathapornpong)

APS Divison of Nuclear Physics yearly meeting October 2020
Benchmarking neutrino energy reconstruction with electron-deuterium scattering (abstract)

Community involvement

Mentor for Physics Directed Reading Program at UC Berkeley ..... Spring 2024

Member of MIT Physics Dept.'s Values Committee ..... Spring 2020 - Spring 2021

President and Outreach Chair of MIT Society of Physics Students ..... Spring 2018 - Spring 2021