



# DNP 2025 Schedule

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Session ID Ascending

Poster Session

All Fri Sat Sun

Mon

## Saturday, October 18

Sat, October 18 04:00p - 06:00p/H01 **Conference Experience for Undergraduates Poster Session**

Hilton Chicago, International Ballroom North, 2nd Floor

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- Poster 1** Testing a Prototype Detector Array on a Chip Using Heavy-Ion Beams  
Isabelle Adams (presenter), Mike D Youngs, Dale A Julson
- Poster 2** A SiPM-Based Ultracold Neutron Depolarization Monitor  
Carson A Alfaro (presenter)
- Poster 3** Calibrating an FN Tandem Van de Graaff Accelerator using Isotopic Ratios in Monitor Reactions  
Yashraj Bains (presenter), John T Wilkinson, Maria Anastasiou, Nicholas David Scielzo
- Poster 4** Neutron Capture Monte Carlo Simulations for the Alpha-Gamma Device 2.0  
Anthony Bernat (presenter), Chen-Yu Liu
- Poster 5** The comparison in counts from PYXIS detector prototypes and MoNA detector bars  
Amelia N Bittner (presenter), Mark Ddamulira, Johannis Baraille, Makaila Parks, Nicolas Dronchi, Juan Lois Fuentes, Thomas Baumann, Paul L Gueye, ALDRIC REVEL
- Poster 6** Optical Transmission of Ultra-Pure Fused Silica Fibers Irradiated at The LHC  
Henry A Bonzak (presenter), Xuesi Ma, Sheng Yang, Sude Baltaci, Riccardo Longo, Matthias G Perdekamp
- Poster 7** Measuring  $^{12}\text{C}(n,x)$  Cross Sections with Diamond Detectors  
Cyrus Boothby (presenter), Anthony N Kuchera, Andrew Wantz, Truc Anh Tran Nguyen
- Poster 8** Developing  $^{17,18}\text{O}$  target capabilities for high-resolution  $(\alpha,n)$  cross section measurements  
Alexandra E Brillz (presenter), Rebecca Toomey, Nicholas E Esker
- Poster 9** Simulation of Damage to Reactor and Target Materials at High Rates Due to Heavy Ion Irradiation  
Isaac R Campos (presenter), Walter F Henning, Jerry A Nolen
- Poster 10** Optimizing Time-Zero in Germanium Detectors of LEGEND-200  
Ryan P Cantz (presenter)
- Poster 11** Probing Proton Hadron Pairs at Jefferson Lab  
Cooper A Bell, Nathan R Carpenter (presenter), Nia Nicholson, Faiha Benmokhtar
- Poster 12** Design of an Automated Liquid Nitrogen Filling System for Germanium Clover Detectors  
Jason A Castro (presenter), Philip Adsley, John Santucci
- Poster 13** Configuring an NGn Prototype Detector using Cosmic Muons for CNN Training and Testing  
Nicholas Cavey (presenter), Nicolas Balestra, Warren F Rogers
- Poster 14** Characterization of Ion Bunches using GOLIATH, the Gas-Operated Large Ion-bunch Atomic Trap for He6-CRES  
Eva M Chalona (presenter), David McClain, Dan G. Melconian
- Poster 15** The Utility of Deep Learning-Based Segmentation in Automated Scintillator Tile Dimensioning  
Kottavai Chandrasekaran (presenter)
- Poster 16** LEGEND-200's Sensitivity to Fractionally Charged Particles  
Carter J Chapman (presenter)
- Poster 17** Reconstruction of muon trajectories in the 1-ton water-based liquid scintillator detector using machine learning  
Daniel Colson (presenter), Milind Vaman Diwan, Adam Baldoni
- Poster 18** Photoactivation analysis studies at the Madison Accelerator Laboratory to investigate the copper origin of artifacts excavated in the vicinity of the "lost" Roanoke colony  
Lena Cressman (presenter), Aiden Ebner, Adriana Banu, Tilda Pendleton
- Poster 19** Automated Calibration and Quality Scoring for Floodmap-Based Crystal Identification in PET Detectors  
Caio Augusto Siqueira da Silva (presenter), Magdalena S Allen, Or Hen, Ciprian Catana
- Poster 20** Simulation Validation of Neutron Interaction with SiPMs  
Luke A Dalzell (presenter), Nathan H Frank
- Poster 21** Data Selection Improvement for MicroBooNE  
Brayden Dillon (presenter)
- Poster 22** Improvement and Characterization of High Pressure POint-like Gas Jet Target (HIPPO)  
Julia Megan Dunn (presenter), Manoel Couder, Edward Stech, Adam T Sanchez
- Poster 23** Yield Extraction and Acceptance Studies for  $\Lambda$  Photoproduction off Deuteron  
Samuel Eckman (presenter), Yordanka Ilieva
- Poster 24** Neutrino absorption in hot and dense nuclear matter from renormalization-group evolved nucleon-nucleon potentials.  
Gabriela Escobedo (presenter), Tingwei Yuan, Jeremy W Holt
- Poster 25** Tuning PYTHIA8 for heavy-flavor production at RHIC energies using the PROFESSOR method.  
Owen Fiedorowicz (presenter)
- Poster 26** Xenon Doped Liquid Argon for Scintillation Wavelength Shifting in CENNS-10 Detector  
Morgan L Fischer (presenter)
- Poster 27** Magnetic Field Control and Trajectory Modeling for 100keV to 1 MeV Electron Accelerator  
John E Fox (presenter)
- Poster 28** Photon Yield Optimization for the MARQ RICH Detector in the J-PARC E50 Experiment  
Michael K Frank (presenter), Owen K Finch, Ken Suzuki, Hiroyuki Nouni
- Poster 29** Development of MRPC detector for the purpose of volcano tomography.  
Alexandra Fumero (presenter), Faiha Benmokhtar, Keigo Mizutani, Shintaro Tanaka
- Poster 30** Simulated Uncertainties In The Monte-Carlo Fitting Method  
Skyler Lynn Gangestad (presenter), Adam K Anthony
- Poster 31** Seismic Wave Identification and Analysis in the CUORE Detector  
Meg E Gibbons (presenter)
- Poster 32** Characterization of Signal and Background Detectors for Dark Matter Search  
Anthony Gomez (presenter)
- Poster 33** Building an NV Magnetometer for Application in the LANL nEDM Experiment  
William Cordell Griggs (presenter), Adam Tarte Holley
- Poster 34** Bayesian Quantification of the Observability and Equation of State of Twin Stars  
Xavier Grundler (presenter), Bao-An Li
- Poster 35** Development of voltage reading adc devices for magnetometry in the Nab experiment  
Sean A Halcomb (presenter)
- Poster 36** Development of a Scintillation-Based Detector for Ultracold Neutron Detection at PULSTAR  
Benjamin Hanestad (presenter)
- Poster 37** Evaluating Digitizer Readout for Improved Spatial Resolution and Noise Suppression in Preparation for Next-Generation Nuclear Detector Systems  
Steven Herrera (presenter), Sudarsan Balakrishnan, Mara Mikela Grindler, Jolie Antonia Cizewski, Steven D. Pain, Kelly A. Chipps, James Matthew Christie
- Poster 38** Determination of the  $^{10}\text{B}(\alpha,\alpha')$  Cross Section using Python  
Shoshanna Hertz (presenter)
- Poster 39** Optimizing Nuclear Polarization Using Metastability Exchange Optical Pumping  
Lindsey L Hessler (presenter)
- Poster 40** Visualizing the r-process  
Rose Alice Heward (presenter), Pranav G Nalamwar, Rebecca A Surman
- Poster 41** Exploring the Rate Dependence of the CAEN DT5202 from the 2024 ePIC Forward Hadronic Calorimeter Test Beam  
Aidan C Hill (presenter)
- Poster 42** Monte Carlo Simulations of Nab and BL3  
Parker T Ingram (presenter)
- Poster 43** GEANT4 Tutorial: Simulations of Nuclear Reactions and Medical Isotope Applications  
Pol Jarne Cupons (presenter), Jerry A Nolen, Amy Renne
- Poster 44** Monte Carlo Modelling of the CP Violation Search in Positronium (CPVPS) Experiment  
Leonardo Juarez (presenter), Paul A Voytas, Elizabeth A George, Oscar Naviliat-Cuncic
- Poster 45** Diffraction Before Destruction: Outrunning Radiation Damage at the Femtosecond  
Katie Kaake (presenter), Petra Fromme
- Poster 46** Search for Hybrid Mesons in Photoproduction: Kinematic and Angular Analysis of the  $\Delta^{*}\eta'$  Intermediate State  
Andrew Keegan (presenter), Colin Gleason
- Poster 47** Upgrading the UKAL DAQ for Improved  $\gamma$ -ray Spectroscopy  
Andrew Kelly (presenter)
- Poster 48** Modeling the Behavior of Heavy Ions Incident Upon a Novel Detector  
David Keltner (presenter), Mike D Youngs, Dale A Julson
- Poster 49** Effect of Fast Fourier Transform Windows on Event Reconstruction for Project 8  
Luis Felipe Koehler Domingues (presenter), Junior Pena, Hannah Binney, Joseph A Angelo Formaggio
- Poster 50** Search for a Diurnal Modulation of Inelastically Scattered Dark Matter  
Zachary Kronlage (presenter)
- Poster 51** Determination of neutron background for the studies of in-beam gamma ray spectroscopy using GEANT4  
Jacqueline B Kuroda (presenter), Ani Aprahamian, Wanpeng Tan
- Poster 52** Optimizing and Stabilizing MR-TOF Electrode Voltages for ATLAS N=126 Factory and nCARIBU  
Aiden J LaLiberte (presenter), Andrew Jacobs, Guy Savard, Adrian A Valverde
- Poster 53** Kinematic Optimization of SHMS and HMS in Hydrogen Elastic Reactions for Deuteron Electro-Disintegration Studies at JLab  
Walker Law (presenter), Carlos Yero, Pramila Pokhrel
- Poster 54** Orthogonal Bayesian forecast combination for charge radii  
An D Le (presenter), Pablo G Giuliani, Kyle S Godbey, Witold Nazarewicz
- Poster 55** Non-relativistic interacting fermions in  $(1 + 1)$  dimensions  
Zihan Li (presenter), Nguyen T Son
- Poster 56** Performance Validation of Upgraded CUPID Prototype Tower and Functionality  
Alessandro Libenson (presenter)
- Poster 57** Role of Meson Excited States in Hybrid Hadronization in Electron-Positron Annihilation  
William R Lippincott (presenter), Cameron Parker, Rainer J. Fries
- Poster 58** Calibration of LGADs for the PIONEER Rare-Pion Decay Experiment  
Bianca R Lott (presenter)
- Poster 59** Modelling neutron star energy loss  
Abriana Lyda (presenter), Prajwal Mohanmurthy
- Poster 60** A Sodium-Iodide Scintillator Array for Gamma-Recoil Coincidence Spectroscopy in BeEST  
Vasilisa Katherine Malenkiy (presenter), Brian G Lenardo
- Poster 61** Development of New Capability for Inverse Compton Scattering Simulation and Application to Diagnostics  
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- Poster 62** Machine Learning-Based Tagging of SiPM Crosstalk in LEGEND-200.  
Mara Mayhew (presenter)
- Poster 63** Effects of Shell Model-Constrained Level Densities on Reaction Cross-Sections  
Madeline E McFeely (presenter), Kostas Kravvaris, Oliver Gorton
- Poster 64** Machine Learning Flags Fast-Neutrino Flavor Instabilities  
John McGuigan (presenter)
- Poster 65** Beta-induced X-rays in Gadolinium Pyrosilicate Crystal Scintillator for the FRIB Decay Station Initiator  
Daniel J Metcalf (presenter), Robert K. Grzywacz, Zhengyu Xu, Yasmin Anuar, Rin Yokoyama, Shunsuke Kurosawa, Akihiro Yamaji, Thomas T King, Thomas Ruland
- Poster 66** Geometric Scaling and Gluon Saturation at the EIC  
Rojae Mighty (presenter)
- Poster 67** Silicon Detector Characterization: Constraining Nitrogen Isotopes in Supernovae  
Maahi Naik (presenter), Richard Leigh Longland
- Poster 68** Studies of the proton in the target fragmentation region  
Nia C Nicholson (presenter), Daniel Terrero Cepeda, Faiha Benmokhtar
- Poster 69** Reconstruction Analysis of Kaon Structure Functions via Tagged Deep Inelastic Scattering  
Archana Parameswaran (presenter)
- Poster 70** Simulation-Based Optimization of xpDIRC Geometry for Next-Generation PID  
Marlena Pegolo (presenter)
- Poster 71** Optimization of Polishing Methods to Prepare Fused Silica Radiators for the HL-ZDC  
Maiti Peyronel (presenter), Henry A Bonzak, Siwoong Lee, Brian A Cole, Riccardo Longo, Matthias G Perdekamp
- Poster 72** Extracting Barrier Distributions from Fusion Cross Sections  
Aaron Phillip (presenter), Pablo G Giuliani, Kyle S Godbey
- Poster 73** Evaluation of Hadron Mass Corrections in Semi-Inclusive Kaon and Pion Production  
Stephen Pincus (presenter), Alberto Accardi
- Poster 74** Efforts toward a Measurement of Longitudinal Double-spin Asymmetry,  $A_{LL}$ , for Neutral Pions using STAR Endcap Calorimeter Data from Proton-Proton Collisions  
Abby Proskurniak (presenter), Zeke Montemayor
- Poster 75** Equilibration Processes of Quantum Many-Neutrino Systems in Core-Collapse Supernovae  
Nikoli J Ralph (presenter), Vincenzo Cirigliano, Yukari Yamaguchi
- Poster 76** Explodability of Core-Collapse Supernovae with a Transition to Quark Matter  
Oliver Rupp (presenter), Grant J Matthews, Lucca Boccioni
- Poster 77** Coupling a Quadrupole Beam Deflector to a Laser Ablation Ion Source at the TN Tech Ion Beam Lab  
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- Poster 78** Understanding a High Gain vs Low Gain Discrepancy in an ePIC LFHCal Test Module  
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- Poster 79** Characterization of Radiation Induced Color Centers in Lithium Fluoride  
Abhiram P Sharma (presenter), Patrick Huber, Samuel C Hedges
- Poster 80** Using  $^{23}\text{Na} + p$  Reaction Analysis to Characterize  $^{12}\text{C} + ^{12}\text{C}$   
Jordan Shegog (presenter), Ani Aprahamian, Shelly R. Leshner, Wanpeng Tan, Jacqueline Kuroda
- Poster 81** Gas Electron Multiplier-Based Cosmic Muon Tracking System for Characterizing Cherenkov Detectors  
Samuel Stevens (presenter), Sakib Sarker, Krishna S Kumar, Sayak Chatterjee
- Poster 82** Prototyping of a New LED-based Calibration System for the ATLAS and CMS High-Luminosity Zero Degree Calorimeter Detector  
Nivedha Vasanth (presenter), Riccardo Longo, Sude Baltaci, Henry A Bonzak, Christian Hornhuber, Matthias G Perdekamp
- Poster 83** Comparative Analysis of KATRIN Rear Wall Measurements  
Yuktha V Vemula (presenter), Byron Abraham Daniel, Kirsten D McMichael, Diana S Parno
- Poster 84** Interfacing ACHILLES and GENIE for Improving Neutrino-Nucleus Interaction Simulations in ICARUS  
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Nikiphoros Vlastos (presenter), Laura Rita de Sousa Oliveira
- Poster 86** Electromagnetic Shower Reconstruction for Dark Matter Searches at SBND  
Khanh Vu (presenter), Supraja Balasubramanian
- Poster 87**  $\beta$ -Decay Feeding Intensity Distribution of  $^{93}\text{Rb}$   
Emma R Weissling (presenter), Paul A Deyoung, Artemis Spyrou, William W von Seeger
- Poster 88** Feasibility study of a new surrogate reaction experimentto constrain neutron capture cross sections on radioactive isotope with Geant4 simulations  
Alyssa K Wheeler (presenter), Shuya Ota
- Poster 89** Beam Energy Calibrations for FN Tandem Accelerator Using Nuclear Monitor Reactions  
Justice Wilkes (presenter), Jennifer A Shusterman, Maria Anastasiou, John T Wilkinson
- Poster 90** Probing the Quark Gluon Plasma with High-Energy Jets  
Alexander Wood (presenter)
- Poster 91** From Noise to Neutrinos: Understanding Background Events in Detectors  
Cassandra Yang (presenter)
- Poster 92** The gluon-less pion? Insights to pion structure from leading neutron data  
Connie Yang (presenter), Patrick C Barry, Wally Melnitchouk, Nobuo Sato
- Poster 93** Towards efficient deceleration and production of cold, neutral radioactive molecules  
Sherlock Zhao (presenter), Derick E Gonzalez-Acevedo, Robert W Field, Isabella W Juarez, Yan Zhou, Ronald F Garcia
- Poster 94** Proton Energy Loss Through Thin Films  
Andrews Agyemang-Duah (presenter)
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Sarah Ormond (presenter), Ioana Niculescu, Gabriela Niculescu, Gabriel Niculescu, Kevin Louis Giovanetti
- Poster 96** The Cahn effect and Transverse Momentum Factorization Beyond Leading Power  
Owen Page (presenter), Leonard Gamberg, Zhongbo Kang
- Poster 97** Using MPPCs to Measure the Zenith Angle Dependence of Cosmic Ray Muons  
Lincoln Joseph J Potts (presenter), Nathan C Palley, Keegan Swafford, Madison Wilson, Christopher B Crawford, Ivan Novikov, Jason A Fry, Martin Veillette, Mae Scott, William Michael Snow, Takuya Okudaira, Shiori Sugahara, Riku Omori
- Poster 98** Exploration of New Analysis Techniques Using Machine Learning in Dilepton Analysis  
Gabriel Rodriguez (presenter), Bishop Dongwi, Charles-Joseph NAIM
- Poster 99** Preparation and Characterization of Lanthanide Oxides through Solution Combustion Synthesis (SCS) for Nuclear Science Measurements  
Mariemika Thegenus (presenter), Christopher Ballew, Ani Aprahamian, Shelly Leshner, Khachatur Manukyan
- Poster 100** Cross-section measurements of  $^{191}\text{Ir}$  production using a rapid irradiated target transfer system  
Parker D Till (presenter), Sean W Finch, Alexander S Crowell, Werner Tornow
- Poster 101** Modeling  $G^2$  Dependent Parameters for Deep Inelastic Scattering Structure Functions  
Luke Zamagni (presenter)
- Poster 102** Characterization of Two High Purity Germanium (HPGe) Detectors  
Natalie R Brace (presenter)
- Poster 103** Towards Cleaner Ion Beams: Contaminant Removal Study for FRIB's future MR-ToF mass separator  
Einstein Dhayal (presenter), Franziska M Maier, Erich Leistenschneider, Christian Ireland, Austin Sjaarda, Ryan Ringle
- Poster 104** Jet evolution in vacuum and in medium: a unified approach  
Kevin Eisenberg (presenter), Yacine Mehtar-Tani

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