

# CEEM Graduate Thesis List 2009-2018

Nathan B. Callahan	2018	Measurement of the Neutron Lifetime using Trapped Ultracold Neutrons
Sheakha S. Aldaihan	2018	Calculations of Exotic Spin-Independent Long-Range Interactions from Spin-Dependent Couplings in Non-relativistic Higher-Order Perturbation Theory
Zidu Lin	2018	Weak neutral current interaction in nuclei and supernovae
Shuzhe Shi	2018	Soft and Hard Probes of QCD Topological Structures in Relativistic Heavy-Ion Collisions
Sean J. Daugherty	2018	Neutron Interactions on Xe-136 and Their Impact on Neutrinoless Double Beta Decay Searches
Hao Feng	2017	Neutron scattering studies on large length scale sample structures
Blake Wiggins	2017	Sensing the Position of a Single Electron Using Induced Signals
Ting Lin	2017	Longitudinal Double-Spin Asymmetries for Dijet Production at Intermediate Pseudorapidity in Polarized P+P Collisions at Center of Mass Energy 200 GeV
Evan Weisman	2017	Experimental Searches for Exotic Short-Range Interactions Using Mechanical Oscillators
Eamon Anderson	2017	Precision Neutron Flux Measurement and Advancement using the Alpha-Gamma Technique
Matthew E. Caplan	2017	Astromaterials in Neutron Stars
Remington T. Thornton	2017	Search for Light Dark Matter Produced in a Proton Beam Dump
Evan R. Adamek	2017	Measure of the Neutron Beta Decay Lifetime Using Magnetically Trapped Ultracold Neutrons
Christopher C. Haddock	2016	An Experimental Search for Possible Exotic Long Range Neutron-Nucleon Interactions using Neutron Spin Rotation
Erick C. Smith	2016	Laboratory Searches for New Spin Dependent Forces on the Micron to Centimeter Scale Using Polarized Noble Gas Magnetometers
Hairong Li	2016	Extraction of azimuthal asymmetries in di-hadron production including neutral mesons
Ke Li	2016	Neutron Interferometry with Magnets and Crystals
Tracy K. Steinbach	2016	Near and Sub-Barrier Fusion of Neutron-Rich Oxygen and Carbon Nuclei Using Low-Intensity Beams
Tianhao Wang	2016	CryoCUP – Compact Spherical Neutron Polarimetry device for small

		angle measurement
Fankang Li	2015	Larmor labeling of neutron spin using superconducting magnetic Wollaston prisms
Jeffrey Eldred	2015	Slip-Stacking Dynamics for High-Power Proton Beams at Fermilab
Tessa N. Johnson	2015	A Search for Exotic Physics Processed in Double Beta Decay with EXO-200
Kilean Hwang	2015	On Intrinsic Nonlinear Particle Motion in Compact Synchrotrons
Hung-Chun Chao	2015	Emittance Evolution in Crossing Walkinshaw Resonance and Envelope Dynamics Simulations
Jason A. Fry	2015	Exploring the Hadronic Weak Interaction with Cold Neutrons in the NPDGamma and n-4He Experiments
Alper Duru	2015	Beam Dynamics Simulations in Laser Electron Storage Rings and Optical Stochastic Cooling
Patrick D. McChesney	2015	Neutron Accelerator Physics
Rakshya Khatiwada	2015	Experimental constraints on exotic spin-dependent interactions using specialized materials
Daniel J. Salvat	2015	A Magneto-Gravitational Neutron Trap for the Measurement of the Neutron Lifetime
Ao Liu	2015	Design and simulations of the nuSTORM facility
Fang Kun	2014	Optics Property Analysis and a Novel Bandwidth Control Scheme for a Terawatt FEL
Timothy John Hobbs	2014	The nonperturbative structure of hadrons
Xiaozhe Shen	2014	Optic Measurement and Correction for the Relativistic Heavy Ion Collider
Maciej Karcz	2014	Electric Breakdown and Ionization Detection in Normal Liquid and Superfluid 4He for the SNS nEDM experiment
Zhenghao Gu	2014	Design of Low Emittance Storage Ring
Alfonse N. Pham	2014	Beam Uniformization and Low Frequency RF Cavities in Compact Electron Storage Rings
Timothy R. Prisk	2014	Microscopic Dynamics of Superfluid Helium Confined in Mesopores
Zhaowen Tang	2014	Parity Violation in polarized N-P capture (The NPDGamma Experiment)

Lance Michael Garrison	2014	Measurement of Neutron and Muon Fluxes 100 m Underground with the SciBath Detector
André da Silva Schneider	2013	Phase Transitions in Stars
R. Chad Gillis	2013	The NPDGamma Liquid Parahydrogen Target
Paul J. Stonaha	2013	Studies of Porous Anodic Alumina using Spin Echo Scattering Angle Measurement
Brian S. Page	2013	Di-jet Cross Section and Double Spin Asymmetry at Mid-Rapidity from Polarized p+p Collisions at $\sqrt{s} = 200$ GeV at RHIC
Adam Washington	2013	Investigating Hard Sphere Interactions Through Spin Echo Scattering Angle Measurement
Honghuan Liu	2013	Design of a Compact Medical Synchrotron and 3D Dose Delivery of Rapid Cycling Beam
Rana Ashkar	2012	Dynamical theory applications to neutron scattering from periodic Nanostructures
Joseph Hughto	2012	How Stars Freeze
Xilin Zhang	2012	Electroweak Interactions and the Delta Resonance in a Chiral Effective Field Theory for Nuclei
Justin Ryan Stevens	2012	Longitudinal Single-Spin Asymmetry and Cross Section for $W_{\pm}$ Boson Production in Polarized Proton-Proton Collisions at $\sqrt{s} = 500$ GeV
Young Jin Kim	2011	An Experimental Search for the Experimental Search for the Electron Electric Dipole Moment in a Gadolinium Gallium Garnet Crystal
Tianhuan Luo	2011	Instrumentation and Beam Dynamics Study of Advance Electron-Photon Facility in Indiana University
Yichao Jing	2011	Design of an Ultimate Storage Ring for Future Light Source
Zhengzheng Liu	2011	Linear Optics Correction and Observation of Electron Proton Instability at SNS Accumulator Ring
George A. Noid	2010	The aCORN Experiment
Xin Wang	2010	Space-Charge Nonlinear Resonances
Chenyang Jiang	2010	Development of Spin-Exchange Optical Pumping Systems at Indiana University
Jeffrey Kolski	2010	Lattice Modeling and Application of Independent Component Analysis to High Power, Long Bunch Beams in the Los Alamos Proton Storage

Jianhui Wang	2010	Many-Body Effects in Graphene
Gang Shen	2010	Equation of State for Astrophysical Simulations
Jiawei Mei	2010	Precision Measurement of Parity Violation in Polarized Cold Neutron Capture on the Proton: the N P D $\gamma$ Experiment
Alan B. McIntosh	2009	Binary and Ternary Breakup of Excited Projectile-like Fragments Produced in Collisions of $^{124,136}\text{Xe}$ Nuclei With $^{112,124}\text{Sn}$ Targets at $E/A = 50$ MeV