

Columbia Department of Physics PhD Graduates

April 2017

Andrea Petri

"Non-Gaussian information in cosmology with weak gravitational lensing."

Dissertation Sponsor and Research Advisors: Professors Lam Hui and Morgan May

David Kaleko

"MicroBooNE: The search for the MiniBooNE low energy excess."

Dissertation Sponsor and Research Advisor: Professor Mike Shaevitz

Andrey Vlasov

"Outflows from compact objects in supernovae and novae."

Dissertation Sponsor and Research Advisor: Professor Brian Metzger

May 2017

Steven Alkire

"ATLAS levels up: Early Searches for diboson resonances in semi-hadronic decay channels at $\sqrt{s} = 13$ TeV center of mass energy."

Dissertation Sponsor and Research Advisor: Professor Emlyn Hughes

Ting Ting Wang

"Heavy flavor jet quenching in relativistic heavy ion collisions at the LHC."

Dissertation Sponsor and Advisor: Professor Brian Cole

May 2017

Ori Weiner

"Gamma-ray burst science in the era of IACT arrays."

Dissertation Sponsor: Professor Gustaaf Brooijmans

Research Advisor: Professor Reshmi Mukherjee

June 2017

Andrew Brainerd

"Topics in cosmology and quantum mechanics: Entanglement harvesting and cosmic bubble collisions"

Dissertation Sponsor and Research Advisor: Professor Brian Greene

Yuran "Alex" Chen

"Particle-in-cell simulation and its applications to magnetosphere problems in astrophysics."

Dissertation Sponsor and Research Advisor: Professor Andrei Beloborodov

Ziyuan Bai

"Neutral kaon mixing from lattice QCD."

Dissertation Sponsor and Research Advisor: Professor Norman Christ

Derek Araujo

"Data analysis for the E and B Experiment and instrumentation development for cosmic microwave background polarimetry."

Dissertation Sponsor and Research Advisor: Professor Amber Miller

July 2017

Carlos Forsythe

"Fractal magnetic subband structure in dielectric superlattice graphene systems."

Dissertation Sponsor and Research Advisor: Professor Cory Dean

August 2017

David Murphy

"Precision light flavor physics from lattice QCP."

Dissertation Sponsor and Research Advisor: Professor Robert Mawhinney

Antonio Levy

"Optical spectroscopy of emergent phases in the second Landau Level."

Dissertation Sponsor and Research Advisor: Professor Aron Pinczuk

September 2017

Ryne Carbone

"A search for new diboson resonances in the boosted semi-leptonic final state at $\sqrt{s} = 13$ TeV with the ATLAS detector."

Dissertation Sponsor and Research Advisor: Professor John Parsons

October 2017

Sky Cheung

"Understanding iron-pnictide superconductors using Muon spin rotation and scanning tunneling microscopy with nonconvex optimization."

Dissertation Sponsor and Research Advisor: Professors Abhay Pasupathy and Yasutomo Uemura

November 2017

Suk Hyun Kim

"Probing transition metal dichalcogenide monolayers and heterostructures by polarization-resolved spectroscopy."

Dissertation Sponsor and Research Advisor: Professors Tony Heinz

December 2017

David Caratelli

"Study of electromagnetic interactions in the microBooNE liquid argon time projection chamber."

Dissertation Sponsor and Research Advisor: Professor Tony Heinz

Shuyuan "Joseph" Wang

"Mathematically modelling the mechanics of cell division."

Dissertation Sponsor: Professor Ozgur Sahin

Research Advisor: Professor Ben O'Shaughnessy

Sathish Thiyagarajan

"Cell wall growth regulation and maintenance of stability in actomyosin structures in cells."

Dissertation Sponsor: Professor Ozgur Sahin

Research Advisor: Professor Ben O'Shaughnessy

Runzhi Wang

"Dynamical mean-field theory on pyrochlore iridates: A study of electron interaction and spin-orbit coupling."

Dissertation Sponsor and Research Advisor: Professor Andy Millis

Matthew Anthony

"Understanding low-energy nuclear recoils in liquid xenon for dark matter searches and the first results of XENON1T."

Dissertation Sponsor and Research Advisor: Professor Elena Aprile

January 2018

Daniel Flanigan

"Kinetic inductance detectors for measuring the polarization of the cosmic microwave background."

Dissertation Sponsor and Research Advisor: Professor Bradley Johnson

Geoffrey Iwata

"A cryogenic buffer-gas cooled beam of abrium monohyride for laser slowing, cooling and trapping."

Dissertation Sponsor and Research Advisor: Professor Tanya Zelevinsky

March 2017

Zizhou Gong

"Muon spin relaxation study of MnGe and development of pair distribution function methods."

Dissertation Sponsor and Research Advisor: Professor Tomo Uemura

April 2018

Jonghee Kang

"Generalizations of solid inflation."

Dissertation Sponsor and Research Advisor: Professor Alberto Nicolis

Angelo Esposito

"Low energy physics for the high energy physicist."

Dissertation Sponsor and Research Advisor: Professor Alberto Nicolis

April 2018

Yun Tian

"Open Heavy Flavor Production in Relativistic Heavy Ion Collisions at LHC."

Dissertation Sponsor and Research Advisor: Professor Brian Cole

May 2018

Erick Andrade

"Visualizing quasiparticle scattering nematicity in NaFeAs and of topological surface states in MoTe₂."

Dissertation Sponsor and Research Advisor: Professor Abhay Psupathy

Zhengan Gao

"Phase diagrams of water confined by hydrophobic and hydrophilic plates."

Dissertation Sponsor and Research Advisor: Professor Ozgur Sahin

June 2018

Eli Kinigstein

"Structural and optical characterization of layered lead halide perovskites."

Dissertation Sponsor and Research Advisor: Professor Abhay Psupathy

Ben Margalit

"Transients from the birth and death of compact objects."

Dissertation Sponsor and Research Advisor: Professor Brian Metzger