

Department of Physics

Diploma Ceremony

Sunday, May 8, 2022
Love Auditorium & Hall of Science



PROGRAM

12:00 Lunch

1:00 Welcome Address

Professor Steffen A. Bass, Chair
Department of Physics

1:15 Presentation of Diplomas for Degrees in Physics

Professor John Mercer
Associate Director
Undergraduate Studies
Department of Physics

Professor Ayana Arce
Director
Undergraduate Studies
Department of Physics

Professor Stephen Teitsworth
Director
Graduate Studies
Department of Physics

FIRST MAJORS IN BIOPHYSICS

Aliyah Habashy

FIRST MAJORS IN PHYSICS

Yasa Mirza Baig
Aryil Liam Bechtel ❖❖ ΣΠΣ
Natalia Escobar
Elliott M Kauffman ❖ ΣΠΣ
Zoe Kona
Qiyao Liang ❖❖ ΣΠΣ
Sergio Macias-Vazquez

Jieran Shen ❖❖ΣΠΣ
Edwards Tomass Sneps
Devon Jared Valdez
Ling Hong Winston Yau
Jason Yu
Junzhe Zhou ❖❖

MINORS IN PHYSICS

James Robert Arnold Jr.
Ethan Macauley Austin
Daniel Behrens

Eilam Doron
Florence Liu
Ashley Nicole Russell

GRADUATION WITH DISTINCTION IN PHYSICS

Elise M Kauffman: Graduation with High Distinction (Advisor: Ayana Arce) - *Analysis of a Novel Jet Tagging Technique for Emerging Jets in LHC Collisions*

Qiyao Liang: Graduation with High Distinction (Advisor: Kenneth Brown) - *Robust Control in Trapped-ion Quantum Computers*

Jieran Shen: Graduation with High Distinction (Advisor: Kate Scholberg) - *Supernova Pointing Resolution of DUNE*

Junzhe Zhou: Graduation with High Distinction (Advisor: Michael Troxel) - *Measuring Galaxy as Intrinsic Alignment using DES 43 Catalog*

❖ Graduation with Distinction – Requires a significant thesis with originality and thesis defense.

❖❖ Graduation with High Distinction – Highest Honor in Physics. Requires a thesis comparable to papers in peer reviewed journals and unanimous support from thesis committee members.

ΣΠΣ Physics Honor Society

ΦBK Phi Beta Kappa

MASTER OF ARTS IN PHYSICS

Ge Chen

DOCTOR OF PHILOSOPHY IN PHYSICS

Summer 2021

Dr. Sarah Anne Brandsen
Dr. Benjamin Hamm
Dr. Ryan Henry Kozlowski
Dr. Peifan Liu
Dr. William Steinhardt
Dr. Jonathon Yuly

Fall 2021

Dr. Michael Eggeleston
Dr. Samuel Carter Hedges
Dr. Yuheng Liao
Dr. Aaron Mahler
Dr. Pingchuan Zhao

Spring 2022

Dr. Ehtan Arnault
Dr. Connor Awe
Dr. Long Li
Dr. Trevyn Larson
Dr. Shobhit Sharma

DOCTOR OF PHILOSOPHY DISSERTATION IN PHYSICS

Ethan Arnault: [Advisor: Gleb Finkelstein] – *Out of Equilibrium Superconducting States in Graphene Multiterminal Josephson Junctions*

Connor Awe: [Advisor: Phillip Barbeau] – *Novel Technologies for Neutrino and Dark Matter Detection*

Sarah Anne Brandsen: [Co-Advisors: Arthur Robert Calderbank and Henry Pfister] – *Locally Adaptive Protocols for Quantum State Discrimination*

Michael Eggleston: [Advisor: Ayana Arce] – *Searches for Vector Like Quarks Decaying to H_t , Z_t or W_t in the Single Lepton Channel with the ATLAS Detector*

Benjamin Isaac Hamm: [Advisor: Hubert Bray] – *Scalar Field Wave Dark Matter and Galactic Halos*

Samuel Carter Hedges: [Advisor: Phillip Barbeau] – *Low Energy Neutrino-Nucleus Interactions at the Spallation Neutron Source*

Ryan Henry Kozlowski: [Advisor: Joshua Socolar] – *Mesoscale Forces and Grain Motion in Granular Media Exhibiting Stick-Slip Dynamics: Effect of Friction and Grain Shape*

Trevyn Larson: [Advisor: Gleb Finkelstein] – *AC Measurements of Graphene-Superconductor Devices*

Long Li: [Advisor: Phillip Barbeau] – *A Measurement of the Response of a High Purity Germanium Detector to Low-Energy Nuclear Recoils*

Yuheng Liao: [Advisor: Warren S. Warren] – *Understanding Photoexcited Charge Carrier Dynamics in Methylammonium Lead Iodide Perovskite Thin Films*

Peifan Liu: [Advisor: Ying Wu] – *Structured Light Generation in a Free-Electron Laser Oscillator*

Aaron Lucas Mahler: [Advisor: Weitao Yang] – *Wannier Functions and Their Role in Improving Density Functional Theory*

Shobhit Sharma: [Co- Advisors: Ehsan Samei and Anuj Kapadia] – *Development and Application of Simulation Tools for Virtual Imaging Trials in Computed Tomography*

William Steinhardt: [Advisor: Sara Haravifard] – *Investigating the Ground State of Triangular Antiferromagnet Quantum Spin Liquid Candidates*

Jonathon Yuly: [Advisor: David Beratan] – *Energy Transduction by Electron Bifurcation*

Pingchuan Zhao: [Advisor: Mark Kruse] – *Search for New Phenomena Using Three-Photon Final States in Data Collected with the ATLAS Detector*