Chanuntorn Pumpo

The University of Oklahoma Homer L. Dodge Department of Physics and Astronomy
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EDUCATION

Doctor of Philosophy in Astrophysics **Aug 2022-Expected 2028**
University of Oklahoma, Norman, Oklahoma

Bachelor of Science **Sept 2018-May 2022**
Siena College, Loudonville, New York

- Double Major: Physics and Astronomy, Mathematics with a minor in Astrophysics

Study Abroad **Jan-May 2020**
University College Cork, Cork, Ireland

- Concentration in Mathematics

RESEARCH EXPERIENCE

Graduate Assistant **Sept 2023-Present**
Advisor: Dr. Karen Leighly, University of Oklahoma, Norman, Oklahoma

- Model and analyze broad absorption line quasars using principal component analysis eigenvectors and Markov chain Monte Carlo computational techniques
- Developed an algorithm to characterize absorption line strength in rest-frame ultra-violet broad absorption line quasar spectra

Senior Capstone **Sept 2021-May 2022**
Advisor: Dr. John Moustakas, Siena College, Loudonville, New York

- Identified cosmic voids in the UNIT simulations provided by the Dark Energy Spectroscopic Instrument (DESI) using watershed-transform-based algorithms
- Developed methods to analyze cosmic voids and set a foundation for future void analysis in DESI survey data

Student Researcher **July 2020**
Advisor: Dr. John Moustakas, Siena College, Loudonville, New York

- Studied methods used to analyze large scale structures and the use of correlation functions in cosmology and presented these methods to students at an academic showcase
- Attended the Dark Energy Spectroscopic Instrument collaboration meetings and gained insight on how astrophysicists operate in group settings

Student Researcher **May 2020-July 2020**
Adrvisor: Dr. Rose Finn, Siena College, Loudonville, New York

- Tested a python-based GUI developed by Dr. Finn used to analyze images collected from the KPNO and determined the extent of star formation in Virgo Filament Galaxies with peers
- Participated in workshops to gain familiarity with astronomical data analysis tools

Student Researcher **May 2019-June 2019**
Advisor: Dr. John Moustakas, Siena College, Loudonville, New York

- Examined the theoretical relationship between stellar mass definitions and dark matter halo mass using the IllustrisTNG simulations and definitions developed by Annalisa Pillepich
- Assisted peers in collecting data and operating the Breyo Observatory at Siena College

TEACHING EXPERIENCE

Graduate Teaching Assistant **Fall2026, Fall 2025, Aug 2022-May 2023**
University of Oklahoma, Norman, Oklahoma

- Lead discussion sections and held office hours for General Physics for Engineering
- Graded student work and provided regular feedback in astrophysics courses such as Introductory Astrophysics, Life in the Universe, Stars, and Extragalactic Astronomy

Learning Assistant **Sept 2021-May 2022**
Supervisor: Dr. Matthew Bellis, Siena College, Loudonville, New York

- Reviewed curricula topics and assignments in courses such as Introduction to Exploratory Data Analysis and Visualization, and Introduction to Computational Physics
- Taught skills to improve academic performance, including study strategies, and approaches to answering problems

Individual Peer Tutor **Sept 2021-May 2022**
Supervisor: Ashley Roney, Siena College, Loudonville, New York

- Aided students in understanding key concepts in courses such as Calculus I, Introduction to Exploratory Data Analysis and Visualization, and Introduction to Computational Physics
- Assisted students with homework, projects, and other course materials and assignments

PRESENTATIONS

Galaxy Group Seminar, The University of Michigan, Virtual	**March 2026**
American Astronomical Society 247th Meeting, Phoenix, Arizona	**Jan 2026**
4G-PAQS Montreal Meeting, University of Montreal, Quebec, Canada	**Aug 2025**
Science Symposium, Siena College, Loudonville, New York	**May 2022**

HONORS & AWARDS

McGuire Graduate Fellowship	**Aug 2025**
Avenir Foundation Graduate Student Fellowship	**Jan-Aug 2025**
Major Field Award in Mathematics	**May 2022**
Outstanding Junior Physics Award	**May 2021**

LEADERSHIP & SERVICE

Astrophysics Seminar Co-Organizer, OU Physics & Astronomy Department	**Sept 2024-Current**
Peer Mentor, OU Physics & Astronomy Department	**Sept 2023-Current**
STEM Pen Pal, Letters to a Pre-Scientist	**Sept 2024-June 2026**
Graduate Student Representative, Community and Belonging Committee	**Sept 2023-May 2026**
Event Planner, Graduate Physics Students Interdependence	**Sept 2023-May 2024**