

The Department of Physics & Astronomy at the University of Pittsburgh  
is pleased to announce the 2024

# Thomas-Lain Fund Scholarship Essay Competition

## ELIGIBILITY

Any undergraduate physics/astronomy major or graduate student in the Department of Physics and Astronomy at the University of Pittsburgh who has a cumulative GPA of 3.25 or higher, has at least one full term of study left before graduation, and has NOT received this award previously is eligible to apply.

## ESSAY TOPICS

**UNDERGRADUATE STUDENTS:** In the past year machine learning has experienced tremendous growth and attention in popular culture. In what ways is machine learning currently being applied to areas of physics research, for example in astrophysics and high energy physics? How might machine learning contribute to future research?

**GRADUATE STUDENTS:** Similar to the cosmic microwave background, it has been predicted that there may be a background of gravitational waves in the universe. Recent experiments that analyze the timing of rotating neutron stars indicate that this stochastic background may have been found. Please discuss the measurement technique and possible implications for cosmology.

## REQUIREMENTS

- ▶ An original research paper written by the applicant in the style of articles published in the American Journal of Physics with no fewer than 4 and no longer than 5 pages long, double-spaced, using a 12-point font with 1" margins on all edges, submitted as a PDF file.
- ▶ All sources of material used in the essay must be referenced in the text, with a list of references (in AIP format) provided as an attachment. Figures are optional. Neither the list of references nor any figures will be counted against the length limitation.
- ▶ A cover page with the student's full name, mailing and email address, telephone number, and status (undergraduate major or graduate student), degree program, and the expected date of graduation.
- ▶ A copy of the student's unofficial transcript. This document can be requested for free from the Registrar's Office.

## AWARDS

- ▶ Scholarship awards will be made on the basis of a science essay competition.
- ▶ Individual awards will range between \$1,000 and \$5,000, based upon the amount available from the Thomas-Lain Fund and the number of awards made.
- ▶ For undergraduates, the award may be used for tuition, books, fees, campus housing, or other expenses directly related to the academic program.
- ▶ For graduate students, if tuition and all other fees are covered by University support, a stipend or award may be given directly to the student.

## EVALUATION

A departmental Thomas-Lain Fund Award Committee composed of three Physics & Astronomy faculty members appointed by the department Chair will evaluate the submitted essays and determine the number of awards to be made. A primary criterion in this evaluation will be the level of scientific understanding of the topic that the student who submitted the essay has demonstrated. Additional criteria are the organization and clarity of the presentation as well as the proper use of the English language, including spelling.

## HELP & INFORMATION

Questions regarding the competition can be directed to Cindy Niznik.  
Physics & Astronomy Department | 100 Allen Hall | [niznik@pitt.edu](mailto:niznik@pitt.edu)

The Writing Center is available for general help and advice in essay writing  
317B O'Hara Student Center | [writingcenter.pitt.edu](http://writingcenter.pitt.edu)

**DEADLINE**  
**4:00PM on Tuesday,**  
**March 5, 2024**

Access the Online Application  
via [Pitt.ScholarshipUniverse.com](http://Pitt.ScholarshipUniverse.com)