Yale Astronomy & Physics Graduate Programs

astronomy.yale.edu
physics.yale.edu
Yale Physics Graduate Program Team

Prof. Karsten Heeger
Chair

Prof. Daisuke Nagai
Director of Graduate Studies

Prof. Helen Caines
Director of Graduate Admissions

Dr. Rona Ramos
Graduate Program Coordinator & Lecturer

Stacey Watts
Graduate Program Registrar
Yale Physics Graduate Student Representatives

David Carcamo
Biological Physics
Graduate Student, Year 3

Yarone Tokayer
Astrophysics/Cosmology
Graduate Student, Year 3

Emily Pottebaum
Particle Experiment
Graduate Student, Year 2
Yale Astronomy Faculty and Student Representatives

Prof. Malena Rice  
*Assistant Professor, Astronomy*

Prof. Frank van den Bosch  
*Professor, Astronomy & Physics*

Christopher Lindsay  
*Astronomy Graduate Student, Year 4*

Juliette Hilhorst  
*Astronomy Graduate Student, Year 1*
Statement of Principles

Respect
We continually strive to make our department a place that respects people with diverse backgrounds and values each others’ creativity.

Well-being
We commit to actively engage in creating a supportive and safe environment. Criticism and praise are professional and constructive.

Integrity
We carry out our work with honesty and with the highest standards. We shall not commit scientific or academic misconduct, defined as plagiarism, fabrication, or falsification.

Community
Our community actively includes all, enhancing collaboration and promoting our common mission to advance the frontiers of knowledge.

physics.yale.edu/statement-principles
Yale Physics by the Numbers 2023

People

- faculty (primary) 36
- faculty (secondary) 32
- research scientists 28
- postdocs 30
- grad students (physics) 156

median time to graduation 6.6 years

Physics students have diverse interests working with advisors in Physics and related disciplines.

many opportunities to seek Interdisciplinary research
Research Areas

Traditional and emerging research areas

Research portfolio of department is evolving

New faculty being hired

Current science initiatives on campus
- data science
- quantum science
- instrumentation

https://physics.yale.edu/research
Yale Physics Research in Campus Centers

Wright Laboratory

Yale Quantum Institute

YCAA (Yale Center for Astronomy & Astrophysics)

Yale Center for Research Computing

PEB: Yale’s Integrated Graduate Program in Physical and Engineering Biology

Quantitative Biology Institute [QBio]

Systems Biology Institute

Energy Science Institute
Physics Ph.D students’ learning objectives guide to the graduate program

1. Students will acquire a general foundational knowledge of physics at the graduate level and the necessary accompanying methodological aspects of mathematics, computing, and instrumentation.

2. Students will learn to identify and solve problems at the frontier of physics knowledge, uphold standards of scientific integrity, and disseminate their research.

3. Students will become educators and communicators with the ability to promote an understanding and appreciation of physics across the university and in society.

4. Department members and students will work together to develop and realize, in the department and in the community, progress and success in diversity, equity, and inclusion in all aspects of the scientific enterprise.
Graduate Program

• **Coursework**
  - Must take, waive or pass-out of 6 core courses, take at least one advanced elective and a Special Investigation (research) course

• **Teaching**
  - 10hrs/week of teaching for first 2 years
  - Learn to teach, deepen your knowledge of Physics

• **Qualifying Event**
  - Four 4-question “Event” → Not an exam! Taken at the beginning of the 2nd year. Part of the learning milestone’s of the department. All students pass by participation!

• **Research**
  - typically, start in first year, full-time in summer after year 1
  - by mutual arrangement, you can start summer before you start graduate school (early start)

• **Flexibility in program**
  - many ways to personalize your course of study and research
  - admission to Yale does not bind you to a specific program

https://physics.yale.edu/academics/graduate-studies
Academic Life and Campus Resources

Graduate Student Leadership

★ Regular town halls with department leadership
★ Graduate Student Advisory Committee
★ Graduate Students on Departmental Committees

Physics Colloquia and Seminars

Department of Physics

Yale Poorvu Center for Teaching and Learning

Graduate Students

About the Graduate Writing Laboratory
The Graduate Writing Lab.

Writing and Public Speaking Consultations

Writing Workshops and Panels
Full seminar for the Graduate

GWL Writing Retreats and All Writs
Join your fellow graduate and professional school students for this

Teaching Workshops

Writing Resources for Graduate Students
Resources to guide you through all forms of academic writing in your

Teaching Programs

About Teaching Development for Graduate and Professional School Students
Teaching Forums

McDougal Graduate Student Center

student support resources and community
Diversity, Equity, and Inclusion

Yale Physics Graduate Diversity Fellowship

Climate and Diversity Committee

APS Inclusion, Diversity, and Equity Alliance (APS IDEA)

Office for Graduate Student Development & Diversity (OGSDD)

physics.yale.edu/diversity-equity-and-inclusion
The Physics PhD Application Components

- Personal Details
- Program of Study
- Statement of Academic Purpose (Research interests)
- 3 Letters of Recommendations
- Academic History
- Program-Specific Questions (subfields/faculty of interest)
- Additional Questions (All optional, Personal Narrative Recommended)
- Languages
- Test Scores (*GRE scores are Optional. TOEFL/IELTS scores are required for non-english speakers.)
  https://gsas.yale.edu/faq/admissions/standardized-test-questions
- Resume/CV

https://gsas.yale.edu/admissions/degree-program-application-process
Frequently Asked Questions

Testing -

GREs - Optional

TOEFL/IELTS - Not required from an institution where English is the primary language of instruction. No minimum if not, 25+ on TOEFL speaking test, or 7.5+ on IELTS to teach

Application Costs and Deadlines -

Application Fee - $105 USD, Fee waiver request forms must be submitted before submitting applications

Application Deadline - December 15th

Graduate Student Support -

Tuition and Health Fees - $0 cost to student

Graduate Stipend - $40,530 USD, increases yearly

Early Program Opportunities -

Early Start Research - Paid research in a Research Group, June 1 - Aug 15

Physics Bootcamp - Basic refresher class in several foundational physics topics

physics.yale.edu/prospectivegrad/FAQ
Come and meet us!

Oct. 26-28—SACNAS Conference
Nov. 7—Joint Webinar with Astronomy
Nov. 8—Joint Webinar with Applied Physics
Nov. 9-10—NSBP Conference

Dec. 15—Applications Due
Early Feb.—Offer letters sent
April 15—Deadline to Accept

Physics Open House

April 4-6, 2024