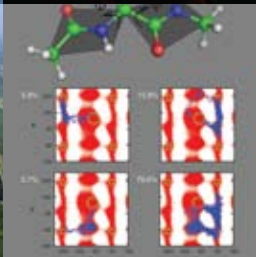
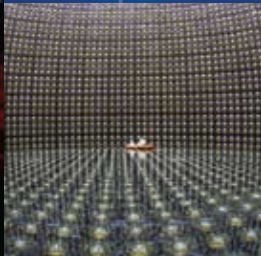
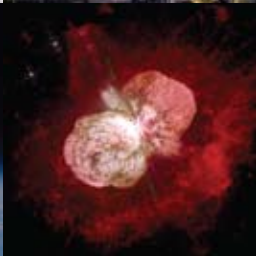
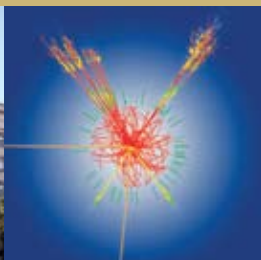


UNIVERSITY OF PITTSBURGH



# PHYSICS AND ASTRONOMY

School of  
**Arts & Sciences**

## OVERVIEW

The undergraduate program in the Department of Physics and Astronomy at the University of Pittsburgh develops students with strong scientific and analytic skills. Students benefit from close personal contact with dedicated teachers who also are scientists of international renown. Small intermediate and advanced classes allow for interactive learning and direct access to faculty members who are experts in their fields. Advanced undergraduates may participate in research programs directed by faculty members and gain important practical experience in tackling original scientific problems. Undergraduate students who join research groups have access to various in-house departmental research labs and facilities.

These include cutting-edge condensed matter physics, nanoscience, and biological physics labs; labs dedicated to particle physics research; labs dedicated to astrophysics/cosmology research; and the telescopes housed at the Allegheny Observatory. In addition, highly involved students may have an opportunity to travel to national and international facilities used for particle and astronomy/astrophysics research.

Those who major in physics or in physics and astronomy also may take courses in related programs in other fields. Pitt offers strong programs in the sciences, engineering, and mathematics as well as in the history and philosophy of science.

These, in combination with Pitt's wide variety of other programs, provide students with a comprehensive, well-rounded educational experience.

## ACADEMIC REQUIREMENTS

The department offers five tracks to a bachelor's degree in physics or physics and astronomy, providing for a wide range of academic and career opportunities.

### **Bachelor of Science in Physics**

This program is designed for those interested in pursuing a career in physics. The basic course requirements cover the essential aspects of physics and related areas. Elective courses are available to suit the individual interests and needs of the student.

### **Bachelor of Science in Physics and Astronomy**

The Bachelor of Science degree in physics and astronomy is intended for students with an interest in astronomy, astrophysics, or space science as well as in physics. It provides the solid foundation needed for careers in these areas. Elective courses are available to suit the individual interests and needs of each student.

### **Bachelor of Science in Physics with Honors**

This honors program offers an intensive scientific education that prepares a student to pursue a graduate degree in physics. The curriculum requires more in-depth course work in both physics and mathematics than does the standard BS in physics and is intended for those students who show promise of success in a variety of physics-related areas requiring, for example, graduate study in order to pursue a future career in research and/or teaching at the undergraduate or graduate level.





### **Bachelor of Science in Physics and Astronomy with Honors**

This honors program also is more intensive in physics and mathematics than the standard BS program in physics and astronomy. It is primarily intended for those students who are interested in preparing for graduate study in astronomy, astrophysics, or space science. As with the honors BS in physics, students who successfully complete this program are qualified for graduate study to pursue a future career in research and/or teaching.

### **Bachelor of Arts in Physics and Astronomy**

This program is intended to give students a thorough background in basic physics and astronomy as well as in the historical development of modern physical concepts and the relationship of these basic sciences to other fields. It is a particularly appropriate program for those planning to enter careers in which science and technology have a large impact, such as certain kinds of law, business administration, governmental administration, technical writing, and science education.

## **BEYOND A MAJOR**

The study of physics offers a wide range of academic and professional opportunities beyond the bachelor's degree. Physics majors frequently find it rewarding to enter fields such as medical physics, nanotechnology, engineering, and even technical management and finance. For example, students may choose careers that involve technical laboratory work, data analysis, science writing, research, teaching, or future graduate study, or they may decide to apply their physics education to problems outside the discipline.

Because much of astronomy is based on concepts of physics, majoring in physics and astronomy is an excellent way to prepare for a career in astronomy, astrophysics, or space science. At the University of Pittsburgh, the BS in physics and astronomy is designed to give the right balance of training for students interested in such careers.

Science and technology impact virtually all aspects of modern society. Students may have pursued a degree in physics or physics and astronomy because they wish to understand the fundamental principles that form the basis for many modern scientific and technical advances. The undergraduate programs in physics and in physics and astronomy have been broadly designed especially for such students.

Many students planning careers in other fields, such as medicine, law, or business, major in physics or physics and astronomy as undergraduates. In so doing, they benefit both from obtaining a rich background in a basic and fundamental science and from developing the rigorous habits of thought that stem from such training.

[www.phyast.pitt.edu](http://www.phyast.pitt.edu)



## STUDY ABROAD

Students have the opportunity to pursue study abroad options. It is important for students to plan and consult with their advisors at an early stage to make sure they take the appropriate prerequisite courses that will enable them to take upper-level courses when they return from their study abroad experiences. To learn more about studying abroad in general, contact the Study Abroad Office, 802 William Pitt Union, at **412-648-7413** or **abroad@pitt.edu**.



## OPPORTUNITIES OUTSIDE THE CLASSROOM

### Society of Physics Students

Physics majors are encouraged to join our Society of Physics Students (SPS) chapter, which has won recognition as an outstanding chapter and has received awards for projects designed to enhance interest in physics among students and the general public. There also is a local chapter of Sigma Pi Sigma, a physics honor society within SPS.

### Colloquia and Seminars

Undergraduate students are encouraged to attend weekly colloquia sponsored jointly by the Department of Physics and Astronomy at the University of Pittsburgh and the Department of Physics at Carnegie Mellon University. Advanced undergraduates involved in research are encouraged to attend group research seminars.

## UNDERGRADUATE RESEARCH ASSISTANTS

As a means of encouraging students' involvement in research, faculty members within the department grant a number of research assistantships to undergraduates. These appointments carry an hourly stipend and offer flexible working hours, including allowances for heavy exam periods. The assistants work closely with faculty members, postdoctoral research associates, and/or graduate students. There also are some departmentally awarded opportunities for research internships under the supervision of faculty. Under certain circumstances, undergraduate research assistants may receive credit on research publications.

## DEPARTMENTAL AFFAIRS AND AWARDS

Undergraduate majors are encouraged to attend general department meetings and have voting representation on the undergraduate curriculum committee. The department also recognizes undergraduates with several awards at the annual awards luncheon. A list of awards can be found on the department Web site at [www.phyast.pitt.edu](http://www.phyast.pitt.edu).

## CONTACT US

For more information about the Department of Physics and Astronomy, please visit our Web site at [www.phyast.pitt.edu](http://www.phyast.pitt.edu) or contact the following faculty members:

### **General Information and General Advising**

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### **General Advising**

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