The Ohio State University Department of Physics is one of the university’s largest and most diverse departments conducting world-class research. It is a top 25 physics department in the country, providing the fundamental core curriculum for all of the sciences at Ohio State.

AT A GLANCE

RESEARCH AREAS

- Astrophysics and Cosmology
- Atomic, Molecular and Optical Experiment and Theory
- Biophysics
- Condensed Matter Physics
- Cold Atom Physics
- High Energy Physics
- Nuclear Physics
- Physics Education

BY THE NUMBERS

380 Undergraduate majors
190 Graduate Students
60 Postdoctoral researchers and research scientists
56 Faculty

DEGREE PROGRAMS

BS, Physics
BS, Engineering Physics
Physics minor
PhD, Physics

The ultimate discovery machine: The Large Hadron Collider deep underground in Geneva, Switzerland. Photo courtesy of CERN.

THE LARGE HADRON COLLIDER (LHC)

The Large Hadron Collider, at the European Organization for Nuclear Research (CERN), is the world’s highest energy accelerator used by physicists to study the smallest known particles—the fundamental building blocks of all things. It is made up of intersecting rings 27 km in circumference and spans the border between Switzerland and France about 100 miles underground.

Ohio State is the only institution in the United States collaborating on three of the four largest LHC experiments, ALICE, ATLAS and CMS, to analyze the myriad of particles produced by the collisions in the accelerator.
THE SCARLET LASER LAB

The Science Center for Advanced Research on Lasers and Engineered Targets. We are one of only a handful of universities in the nation to have such an ultra-intense laser facility. The faculty in the High Energy Density Physics group focuses on experiments using basic laser physics that will help advance breakthroughs in fusion energy, cancer therapy and national security.

STUDENT EXCELLENCE

Since 2008, we have had numerous students win National Fellowships: One Rhodes Scholarship, six Goldwater Scholarships, 14 NSF Graduate Research Fellowships, two Churchill Scholarships and two Fulbright Scholarships. Our students have found full-time employment at National Laboratories, JPMorgan Chase, Battelle, Microsoft, Boeing, Honda and more. Those going to graduate school have been accepted at Harvard, Princeton, Stanford, Cornell, MIT, among others.

CENTERS

CENTER FOR COSMOLOGY AND ASTROPARTICLE PHYSICS (CCAPP)
Houses leading efforts in studies of dark energy, dark matter, the origin of cosmic structure and the highest energy particles in the universe.

THE CENTER FOR EMERGENT MATERIALS (CEM)
An NSF funded Materials Research Science and Engineering Center focusing on integrated research on emergent materials and phenomena in magnetoelectronics, creating new paradigms in computing and information storage.

THE CENTER FOR EXPLORATION OF NOVEL COMPLEX MATERIALS (ENCOMM)
Focuses on research in electronic, magnetic, and organic materials to advance the discovery of new forms of energy. Its nanosystems laboratory advanced material characterization and fabrication tools including focused ion beam/scanning electron microscopy, e-beam lithography, nanomanipulation, EDS X-ray microanalysis, X-ray diffractometry, SQUID magnetometry, atomic force/magnetic force microscopy, low temperature magnetotransport measurements, Magneto-optical Kerr Microscopy, Thin Film Deposition and Langmuir-Blodgett trough monolayer deposition.

COMMUNITY OUTREACH

GIRLS REACHING TO ACHIEVE IN SPORTS AND PHYSICS (GRASP)
An annual summer camp aimed at making physics fun, relevant and accessible to middle school girls.

SCIENTIFIC THINKERS
Through the Scientific Thinkers program, undergraduate and graduate students from the STEM (Science, Technology, Engineering, and Mathematics) departments work with 1st through 5th grade science and mathematics teachers at Innsis Elementary school to develop and teach hands-on science lessons to their students. The program encourages students to “Meet a Scientist, Be a Scientist and Think like a Scientist.”

SIGMA PI SIGMA PHYSICS HONOR SOCIETY
Members volunteer at the Ohio State Fair, local elementary schools and local Girl Scout chapters, bringing hands-on learning activities and demos to fans of all ages.

ASPIRE (ACHIEVING IN SCIENCE THROUGH PHYSICS INSTRUMENTATION, RESEARCH AND EXPLORATION)
Summer day camp for high school girls entering 10-12th grades. Participants get hands-on experience with equipment and software and learn about physics research.