UToledo graduate programs in Physics and Astronomy develop a strong and broad foundation in fundamental physics, while simultaneously teaching the mathematical and problem-solving skills necessary to advance knowledge of our physical world. Coursework is tailored to your specific area of research concentration, with flexibility, so you acquire the skills necessary to complete an innovative, important and original thesis research project.

UToledo boasts nationally and internationally recognized faculty members in physics and astronomy. Students in our Ph.D. physics program can choose concentrations in astrophysics, materials science, medical physics or general physics. Ph.D. students in physics spend most of their time conducting research to complete their thesis. They are expected to publish several papers in peer-reviewed journals and present at conferences.

**Physics Ph.D. Degree Highlights:**

- **Financial support.** Graduate physics students are supported through teaching and research assistantships. We also offer incentive and stipend enhancements for exceptionally qualified applicants.

- **International reputation in photovoltaics.** Toledo and the State of Ohio have a long history of success in the photovoltaics industry. That history, along with The University of Toledo’s expertise in PV science and technology, led to the creation of the [Wright Center for Photovoltaics Innovation and Commercialization](#).

- **High-tech labs and research facilities.** UToledo physics graduate students have access to: state-of-the-art equipment in the Wright Center for Photovoltaics Innovation and Commercialization; on-campus, one-meter reflecting telescope with dedicated spectrographs; full access to the Lowell Discovery Telescope in Arizona through UToledo’s partnership with Lowell Observatory; several parallel computing clusters, as well as access to the Ohio Supercomputer Cluster; radiation and diagnostic equipment to perform research in medical physics; and the Toledo Heavy Ion Accelerator (THIA).

- **Research opportunities.** Faculty and students in UToledo's Department of Physics and Astronomy work closely to conduct world-class research. Our primary areas of strength are in: atomic, molecular and optical physics; condensed matter/materials science and photovoltaics; astronomy and astrophysics; biological physics; and medical physics (with strong ties to the UToledo College of Medicine and Life Sciences).

The doctoral degree in physics prepares students to enter research careers in academic, government and industrial settings. Non-research careers in a variety of areas, including public policy, science communication, intellectual property law and science education, are also possible.
Ph.D. Degree in Physics

The doctoral degree in physics is awarded to a student who has demonstrated mastery in the field of physics and a distinct and superior ability to make substantial contributions to the field. The quality of work and the resourcefulness of the student must be such that the faculty can expect a continuing effort toward the advancement of knowledge and significant achievement in research and related activities. Publication of research in peer-reviewed journals is expected.

The degree provides a foundation in either one of the following areas of expertise: astronomy and astrophysics, photovoltaics and condensed-matter physics consisting of theory and experiment, atomic and molecular physics, medical physics, biophysics and photonics. A strong training may be expected in research methodologies and practices, rigorous hypothesis-driven scientific investigation and the dissemination of research results and ideas through scholarly article publication as well as presentation at conferences, other universities and research settings. In general, work for the Ph.D. takes five years of study beyond the bachelor’s degree.

A substantial portion of this time is spent in independent research leading to a dissertation. Normally, 90 credit hours of study beyond the bachelor’s degree are required for the Ph.D. Students may opt to get a M.S. degree during their Ph.D. program.

We encourage you to contact individual faculty members directly to discuss research interests and opportunities.

Faculty contact information is available at: utoledo.edu/nsm/physast/research

What to expect when you graduate ...

Graduates of UToledo’s Ph.D. program in physics typically advance to postdoc programs or take jobs in the industry.

Alumni of UToledo’s graduate programs in physics have landed positions at institutions such as: University of Chicago, Baker College, Rensselaer Polytechnic Institute, Ohio State University, Pacific Northwest National Laboratory, NASA, Intel Corporation, Boeing Company and the Raytheon Company.

Admission requirements, guidelines, and application information can be found at: utoledo.edu/graduate/apply.

If you have questions about the application process, contact 419.530.4723 or graduateonlineapplication@utoledo.edu.