
Physics Faculty

Professors

Michael Stavola Chair, (Ph.D., University of Rochester, 1980) Optical spectroscopy, defects in semiconductors.

Ivan Biaggio (Ph.D., Swiss Federal Institute of Technology, ETH, 1993) Experimental condensed matter physics and nonlinear optics.

Volkmar Dierolf, (Ph.D., University of Utah, 1992) Experimental condensed matter physics and near field optics.

Yong W. Kim (Ph.D., University of Michigan, '68) Theory and Experiments in statistical physics.

H. Daniel Ou Yang (Ph.D., UCLA, 1985) Complex fluids, soft matter and biophysics.

Jeffrey M. Rickman (Ph.D., Carnegie Mellon University, 1989) Computational condensed matter physics.

Jean Toulouse (Ph.D., Columbia University, 1981) Experimental condensed matter physics and fiber optics.

Dimitrios Vavylonis (Ph.D., Columbia University, 2000) Computational biophysics.

Associate Professors

Sera Cremonini (Ph.D., Brown University, 2006) String theory and high energy physics.

Jerome C. Licini, Associate Chair (Ph.D., M.I.T., 1987) Physics education research.

M. Virginia McSwain (Ph.D., Georgia State University, 2004) Observational astrophysics.

Joshua Pepper (Ph.D., The Ohio State University, 2007) Theoretical and observational astrophysics.

Rosi Reed (Ph.D., University of California, Davis, 2011) Experimental high energy nuclear physics.

Timm Wrase (Ph.D., University of Texas at Austin, 2008) String theory and theoretical cosmology.

Teaching Associate Professor

Paola Cereghetti (Ph.D., Swiss Federal Institute of Technology (ETH), 2000).

Assistant Professors

Chinedu Ekuma (Ph.D., Louisiana State University, 2015) Computational condensed matter and materials physics.

Aurelia Honerkamp-Smith (Ph.D., University of Washington, 2010) Physics of biological membranes.

Anders Knospe (Ph.D., Yale University, 2011) Experimental high energy nuclear physics.

Bitan Roy (Ph.D., Simon Fraser University, 2011) Theoretical condensed matter physics.

Ariel Sommer (Ph.D., M.I.T., 2013) Experimental atomic physics.

Research Assistant Professor

David Rutkowski (Ph.D., North Carolina State University, 2016).

Contact

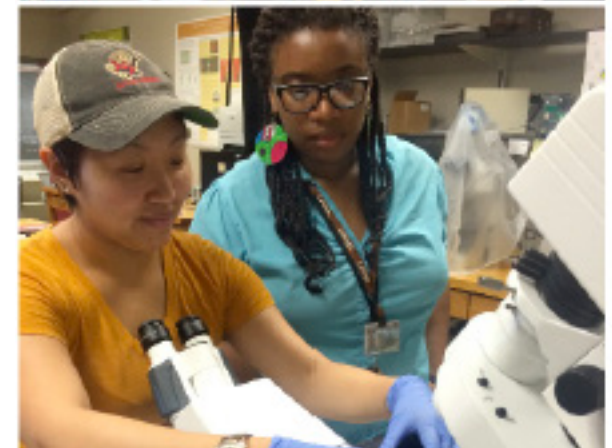
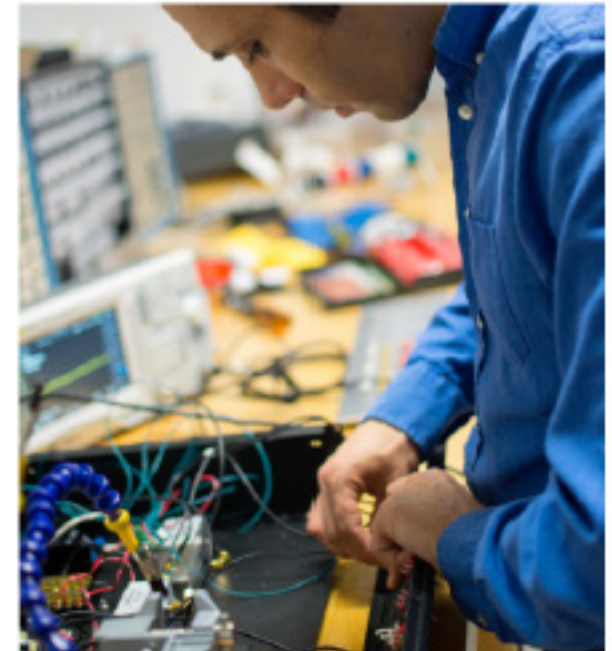
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It is the policy of Lehigh University to provide equal opportunity on the basis of merit and without discrimination because of age, color, disability, gender identity or expression, genetic information, marital or familial status, national or ethnic origin, race, religion, sex, sexual orientation, or veteran status.



Graduate Study and Research in Physics



Sample Research areas

Theoretical Condensed Matter Physics

The research groups of Prof. Bitan Roy and Prof. Chinedu Ekuma work on theoretical and computational methods to study several condensed matter systems and their quantum-mechanical properties. These include the effects of topology, and the interplay of defects and many-body interactions in two-dimensional layers, interfaces, semiconductors, and insulators.

Experimental Condensed Matter Physics and Photonics

The research groups of Prof. Volkmar Dierolf and Prof. Ivan Biaggio use light-matter interaction and different types of lasers, together with several experimental techniques, to study various types of physical effects and materials with future technological applications such as light-emitting displays, solar energy harvesting, optical telecommunication, and quantum information sciences.

Ultracold Atoms and Quantum Processors

The research group of Prof. Ariel Sommer utilizes gases of atoms trapped in vacuum and cooled to ultra-low temperatures to investigate the behavior of strongly interacting collections of quantum particles.

High Energy Physics – Experimental Nuclear Physics

Prof. Rosi Reed and Prof. Anders Knospe investigate the new physics that arises when two large atomic nuclei or other particles collide in large accelerators, in particular the Relativistic Heavy Ion Collider (RHIC) at Brookhaven National Laboratory. There are reasons to believe that the state of matter created in such high energy collisions, called a quark-gluon plasma, is the same that existed a few microseconds after the Big Bang.

High Energy Physics – String Theory and Cosmology

Prof. Timm Wrase and Prof. Sera Cremonini examine a variety of questions about the nature of gravity, the structure of spacetime and the early evolution of the universe.

Biophysics and Soft Condensed Matter

Prof. Daniel Ou-Yang, Prof. Aurelia Honerkamp-Smith, and Prof. Dimitrios Vavylonis work on the experimental investigation of complex fluids and biological systems using advanced microscopy and neutrons, and on the theoretical modeling of cellular mechanisms using computer simulations and physical models.

Accommodations

Living arrangements for graduate students range from apartments and rooms within walking distance of campus to other houses within a few miles. The university operates a 148-unit, five-building garden apartment complex for married and graduate students, with free bus service to the main campus provided every half hour

Financial Aid

Incoming PhD students are supported as teaching assistants with a stipend of approximately \$34,000 per year. The university offers health insurance to all full-time graduate students, and a subsidy that currently covers 50% of the annual premium.

How to apply

Applications to the physics department graduate school are submitted on-line. You can find more information by visiting physicsgraduate.lehigh.edu.



The Graduate Program

The Physics department at Lehigh University offers a program of coursework and research leading to M.S. and Ph.D. degrees in Physics, with research opportunities across a wide range of fields. Approximately 50 students are enrolled in the PhD program at any given time, supported by research and teaching assistantships or fellowships, each student actively pursuing their research goals in over a dozen subfields of physics. The physics department offers research programs in several areas, including condensed matter physics, photonics, quantum electronics, quantum many-body physics and ultracold atoms, biophysics, high energy physics, nuclear physics, string theory, and cosmology.

PhD students in the department are actively involved in the scientific community, present their research at scientific conferences, and publish their findings in peer-reviewed journals. Students have access to a range of computational and experimental facilities, including those related to condensed matter physics, atomic and optical physics, biophysics, particle accelerators, and lasers.

The department is dedicated to fostering students' success, and it offers full support for incoming PhD students, including tuition waivers and competitive stipends. The department has a long history of placing its graduate students in successful careers after graduation. Graduates from the Lehigh physics program work as professors in academic research or teaching positions, in national laboratories, and in various industries.

The Physics Department

The department has faculty from diverse backgrounds. Incoming students will find role models and a variety of perspectives, including first-hand experiences as members of underrepresented groups in science. These attributes make our program an outstanding choice for students seeking a supportive environment and a diverse, individualized graduate experience in physics.

The University

Lehigh University is located in Bethlehem in the Lehigh Valley. It is situated at almost an equal distance from Philadelphia and New York, which can be reached via a short 1.5-2 hour drive, or via bus. Lehigh University combines a peaceful campus environment, easy access to the countryside, and all the resources of nearby urban centers.