The Department of Physics offers programs leading to the following undergraduate degrees: Bachelor of Arts with a major in physics, Bachelor of Science in physics, Bachelor of Science in mathematics and physics, and Bachelor of Science in engineering with an engineering physics major. Associated with the Bachelor of Science in physics degree are optional concentrations in mathematical physics and in biophysics. The department also offers the graduate degrees Master of Science and Doctor of Philosophy. The Master of Science in Physics has a unique optional Entrepreneurship track.

All of these programs involve the study of the basic laws of nature and the properties of energy and matter in their various forms. The curriculum reflects the varied interests of the faculty and will prepare students for a wide range of future activities. At the undergraduate level, open electives and engineering physics concentration area courses tailor the programs to the student’s interests and career plans. Employment opportunities at the bachelor’s level include research, development, and technical assistance (engineering, computer programming, management) in industrial, government, and university settings.

A similar flexibility exists in the first few years of graduate study. The research leading to the PhD degree normally centers on a specific area of physics. However, even at this stage, the broad background and training characteristic of a physics degree are emphasized.

Department Faculty

Corbin Covault, PhD
(University of Buenos Aires)
Visiting Assistant Professor
Theoretical Physics. High energy and Mathematical Physics.

Craig J. Copi, PhD
(University of Chicago)
Senior Instructor
Theoretical cosmology; particle physics; astrophysics

Diana I. Driscoll, PhD
(Case Western Reserve University)
Senior Instructor, Lab Director
Introductory physics

Xuan Gao, PhD
(Columbia University)
Ohio Eminent Scholar in Condensed Matter Physics and Professor, Director, Engineering Physics
Experimental condensed matter physics; nanomaterials; electron transport in nanostructures; correlated electrons in low dimensions

Michael Hinczewski, PhD
(Massachusetts Institute of Technology)
Associate Professor
Theoretical biophysics

Kurt Hinterbichler, PhD
(Columbia University)
Associate Professor
Theoretical physics; gravitation; cosmology

Kathleen Kash, PhD
(Massachusetts Institute of Technology)
M. Roger Clapp University Professor in Arts and Sciences
Experimental condensed matter and mesoscopic physics; synthesis and characterization of novel nitride semiconductors

Lydia Kisley, PhD
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Assistant Professor
Optical microscopy; experimental biophysics; soft condensed matter physics; interfacial/surface science

Walter R. L. Lambrecht, PhD
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Perkins Professor of Physics, Faculty Distinguished Researcher
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Experimental condensed matter and mesoscopic physics; synthesis and characterization of novel nitride semiconductors

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Harsh Mathur, PhD  
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Professor  
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Experimental particle astrophysics  

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Experimental astrophysics and cosmology  

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Particle and astro-particle physics  

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Theoretical Cosmology, Particle Physics, Astrophysics, Nonlinear Dynamics  

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Ambrose Swasey Professor of Physics, Faculty Distinguished Researcher  
Experimental condensed matter physics; nonlinear optics  

Glenn D. Starkman, PhD  
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Professor and The Ohio Research Scholar in Surfaces of Advanced Materials  
Condensed Matter Physics, Nanophotonics and Optical Metamaterials.  

Cyrus C. Taylor, PhD  
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Albert A. Michelson Professor in Physics, Graduate Program Director  
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Idit Zehavi, PhD  
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Secondary Faculty  
Roger H. French, PhD  
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Optical materials and technologies; experimental VIS/UV/VUV optical properties and long range interactions  

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Stacy S. McGaugh, PhD  
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Professor, Department of Astronomy  
Galaxy formation and evolution, low surface brightness galaxies, cosmology, dark matter, and gravity  

J. Christopher Mihos, PhD  
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Worcester R. and Cornelia B. Warner Professor of Astronomy, Department of Astronomy  
Galaxy formation and evolution; galaxy interactions; clusters of galaxies; observational and computational astrophysics  

Adjunct Faculty  
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Adjunct Professor of Physics; Professor of Physics, Youngstown State University  
Optical materials  

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Adjunct Professor of Physics; Professor of Physics, Youngstown State University  
Theoretical physics
De-Chang Dai, PhD  
(YangZhou University)  
Adjunct Professor of Physics  
Gravity, cosmology, astrophysics, particle physics, field theory

Claudia de Rham, PhD  
(University of Cambridge)  
Adjunct Professor of Physics  
Gravity, cosmology, quantum field theory and particle physics

Jeffrey S. Dyck, PhD  
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Adjunct Professor of Physics; Professor, John Carroll University  
Experimental condensed matter physics

Karsten Eggert, PhD  
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Adjunct Professor of Physics  
Experimental particle physics; cosmic ray physics; diffractive physics; TOTEM experiment at CERN

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Adjunct Professor of Physics; President and CEO, Quality Electrodynamics  
Hardware technology in imaging

Evalyn Gates, PhD  
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Adjunct Professor of Physics  
Cosmology and particle astrophysics

John T. Giblin, Jr., PhD  
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Theoretical cosmology; high energy physics and particle physics; high performance computing and gravitational waves

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Adjunct Professor of Physics; Professor, Wayne State University  
Physics of imaging; experimental biophysics

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Solid-state spectroscopy, quantum optics and devices; machine/deep learning-informed physics modeling

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Theoretical physics; atomic physics; astrophysics

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Biophysics

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Adjunct Assistant Professor of Physics; Kent Displays, Inc.

Shmaryu Shvartsman, PhD  
(Tomsk State University)  
Adjunct Professor of Physics; Principal Scientist, ViewRay, Inc.  
General physics research and development

Mano Singham, PhD  
(University of Pittsburgh)  
Adjunct Associate Professor of Physics  
History and philosophy of science, nuclear and particle physics, and learning theory

Michael Thompson, PhD  
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Adjunct Assistant Professor of Physics; Senior Scientist, Fujifilm Healthcare America  
Physics of magnetic resonance imaging

Andrew Tolley, PhD  
(University of Cambridge)  
Adjunct Professor of Physics  
Early universe cosmology; dark energy; gravity; extra dimensions; branes

Mesfin Tsige, PhD  
(Case Western Reserve University)  
Adjunct Professor of Physics  
Theory of solids; polymers and other materials

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**Emeritus Faculty**

Gary S. Chottiner, PhD  
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Emeritus Professor of Physics

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Emeritus Professor of Physics

David E. Farrell, PhD  
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William J. Fickinger, PhD  
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Kenneth L. Kowalski, PhD  
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Benjamin Segall, PhD  
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Philip L. Taylor, PhD
(Cambridge University)

*Distinguished University Professor and Perkins Emeritus Professor of Physics*

**Programs**
- Engineering Physics, BSE
- Physics, BA
- Physics, BS
- Physics, Minor
- Physics, MS
- Physics, PhD

**Dual Degrees**
- Programs toward Graduate or Professional Degrees