

Physics at Indiana University

Guide to graduate programs at Indiana University, Bloomington



Graduate study in physics at IUB

Graduate school is a time when students build on their course work to become independent researchers in their field of choice. At IUB we guarantee support for all entering students either as teaching or research assistants. By their second year, most students have found a research faculty advisor and are supported by their research. Our ~40 faculty members are currently advising ~80 graduate students in their research, a ratio which allows for excellent access to faculty members. While you consider your plans for graduate school, give us a look – I think you'll be glad you did.

Rick VanKooten
Chair, Department of Physics
Indiana University



Research topics spanning the world of physics

The faculty at IUB are leaders in a wide variety of fields ranging from the study of complex biological systems to investigations of the mysterious neutrino. As a student you will be an integral part of a team researching:

➤ **Accelerator Physics:** *Ours is one of the most successful accelerator physics programs in the country and has placed students at every major accelerator in the U.S.*

➤ **Astrophysics:** *We study the rarest cosmic rays and dark energy above the Earth and in space.*

➤ **Biophysics:** *We apply techniques of physics to complex systems such as the principles by which cells process signals, how thoughts travel through the brain, and how flies make decisions during flight.*

➤ **Condensed matter and materials:** *We're exploring theoretically and experimentally the dynamics and atomic and electronic structures of new materials using X-rays and neutrons. Materials with properties such as giant magnetoresistance, high temperature superconductivity, superfluidity, high porosity and non-Newtonian viscoelasticity are expected to address the technological and energy challenges of the upcoming decades.*

➤ **Mathematical physics and computing:** *We study lattice gauge field theories both rigorously and using some of the world's most powerful computers.*

➤ **Neutrino physics:** *Are these ghostly particles the reason we exist? We are leaders of the experiments that just might find out.*

➤ **Nuclear physics:** *Ours is one of the highest ranked nuclear physics groups in the country probing fundamental symmetries and properties of neutrons and protons with unprecedented precision. We are leading efforts to understand the force that binds quarks together and to search for exotic new states of matter*

➤ **Particle physics:** *We're there when the conditions of the Big Bang are recreated at the Tevatron near Chicago and soon the Large Hadron Collider in Geneva, Switzerland and we're ready with the theories of gravity, strings, quanta, and QCD to help explain what we'll see.*



Bloomington Indiana – A Great place to live and work

Bloomington is located among the rolling wooded hills of southern Indiana, and has been singled out as one of the eight most desirable places to live in the U.S. by Rand McNally, one of the top 10 college towns in the U.S. by the New York Times, and is listed among the top 50 "adventure towns" by National Geographic Adventure Magazine. Bloomington is a safe place to live and work, easily navigated by bicycle or public transportation, where the cost of living is a fraction of most U.S. metropolitan areas. Bloomington has a busy calendar of cultural events and its top-rated music school offers world-class opera, chamber, and symphonic music. Indianapolis, 50 miles to the north, offers everything you would expect from a major U.S. city. Find out more on the web at www.visitbloomington.com or come visit us and see for yourself!

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Apply online
www.physics.indiana.edu

At Indiana University, Bloomington our students earn their *Doctor of Philosophy, Master of Science, or Master of Arts in Teaching* in physics while performing cutting-edge research. We offer interdisciplinary degrees in *Astrophysics, Biophysics, Chemical Physics, Mathematical Physics, Scientific Computing, and Beam Physics & Technology*. For more information and to apply, visit our web site at www.physics.indiana.edu, or contact our graduate office at gradphys@indiana.edu.



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