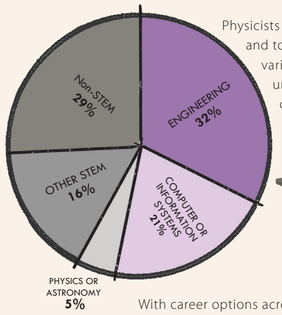
WHAT CAN I DO WITH A PHYSICS DEGREE?



FIELD OF EMPLOYMENT FOR PHYSICS BACHELOR'S IN THE PRIVATE SECTOR
(NATIONAL CLASSES OF '09 and '10)
Source: AIP Statistics, www.aip.org/careersvc/pify/indigo.html

Physicists are trained to formulate their understanding of a problem in precise terms and to communicate these ideas to others. These skills give physics majors a variety of career paths. Many physicists conduct basic research in industry, universities, hospitals and government. Others teach in high schools and colleges. A large number of physicists also go into engineering fields or financial jobs. Nearly any job requiring problem-solving skills will benefit from an employee with a degree in physics.

With career options across numerous industries and trades, physics graduates from Kansas State University work in many fields, including:

- Electronics engineers (Arbor Scientific)
- High school teachers (many examples)
- Patent law scientists (U.S. Patent Office)
- Accounting (Anderson Consulting)
- Weather systems analyst (ITT Space Systems)
- Oil and gas explorations (Reeves Wireline Services)
- Financial services (Tradebot Systems)
- Telecommunications (Century Tel)

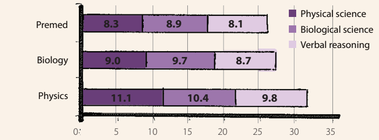
WHAT ABOUT AFTER I GRADUATE?

Across the nation over the past decade, roughly 95 percent of graduates with bachelor's degrees in physics found employment or enrolled in graduate school immediately following graduation.

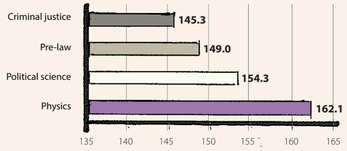
A bachelor's degree in physics is often not the last stop in a student's education. Graduates from Kansas State university have won some of the most prestigious graduate scholarships, and have been accepted to some of the most prestigious graduate programs, including:

- Oxford University
- University of Illinois, Urbana-Champaign
- Cornell
- MIT
- University of California, Berkeley

Average MCAT scores by selected majors
Source: AIP Statistics, Association of American Medical Colleges, FY 2012



Average LSAT scores by selected majors
Source: AIP Statistics, Law School Admission Council, 2012 academic year



STUDENT PROFILES

Karan Mehra | Sophomore | B.S. Physics & B.S. Electrical Engineering

Why did you decide to go into physics?
"I went into physics because I have been naturally curious about the universe in which we live. It may seem like a 'cheesy' answer, but it is true. I am also studying electrical engineering, and since several of the courses between a physics and the electrical engineering major overlapped, I decided to major in both."

What do you really like about physics?
"I like that there is a simple answer for everything in physics. Although the concepts are sometimes hard to grasp, once someone understands the concept, there are patterns that emerge."

What do you plan on doing after you graduate?
"I want to work in technology with consumer products, such as phones that deal with communication of data through radio waves."

What advice would you give to students who are interested in doing a dual degree?
"It all comes down to time management. Know what you have to do and when you have to finish it. Find people in your physics classes with whom you can work on homework and study. My advice is to just be efficient with your time."

Tia Camarillo | Junior | B.S. Physics

Why did you decide to go into physics?
"I actually started off at K-State in a different major. However, because I had taken several advanced placement tests in high school, I got a job tutoring introductory physics students. I started getting jealous of their course work. I wanted to understand these concepts more intimately. I wanted the challenge, and I had so many questions. A motivating set of circumstances later and I was a physics major."

What do you really like about physics?
"It's exhilarating to know that there's a community specifically dedicated to studying how the universe and everything in it works, and I am a part of that study. I really like that I have the opportunity to contribute to something so worthwhile."

Any other thoughts?
"I immediately got involved with the physics club. Not only is it a great place to get help, study and collaborate with other physics majors, but it's such a fun and motivating atmosphere. I have experienced a very involved social environment, and the friendships are great."

Brendan Heffernan |Senior | B.S. Physics

What do you really like about physics?
"I really enjoy the challenge of understanding nature at its most fundamental level. I like how unintuitive it can be in the limits of small or fast, but that the models describing these unconventional behaviors are still consistent with our everyday experiences under the right conditions."

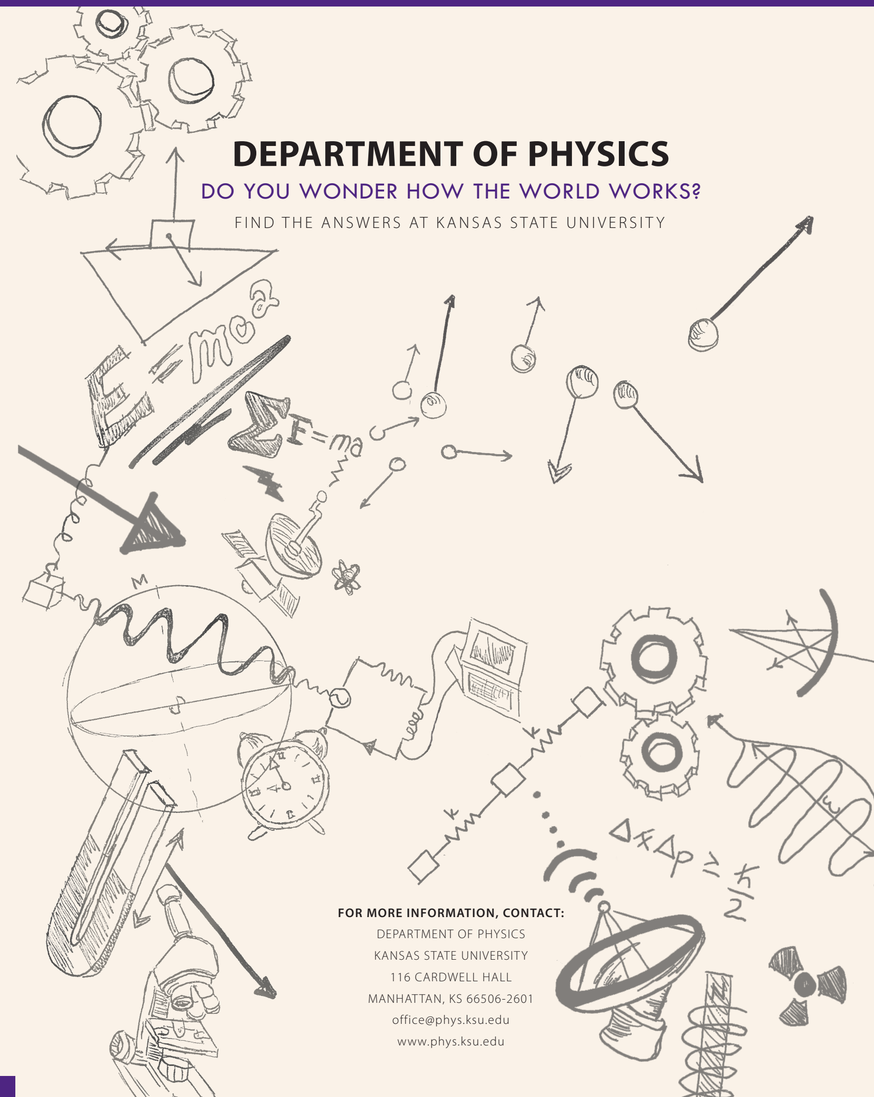
What do you plan on doing after you graduate?
"I plan on going to graduate school to get a doctorate in physics, and then enter academia."

Describe your experience doing undergraduate research.
"My research involves designing and calibrating an apparatus to measure backscattered light from irregularly shaped particles. This data is important for modeling how aerosols in the atmosphere affect global climate. Through my research, I've learned to think critically about experimental setups and have gotten pretty good at hunting down sources of error. It's also provided me with invaluable experience communicating scientific ideas both to people within the light scattering discipline and to those of a more general background."

DEPARTMENT OF PHYSICS

DO YOU WONDER HOW THE WORLD WORKS?

FIND THE ANSWERS AT KANSAS STATE UNIVERSITY



FOR MORE INFORMATION, CONTACT:
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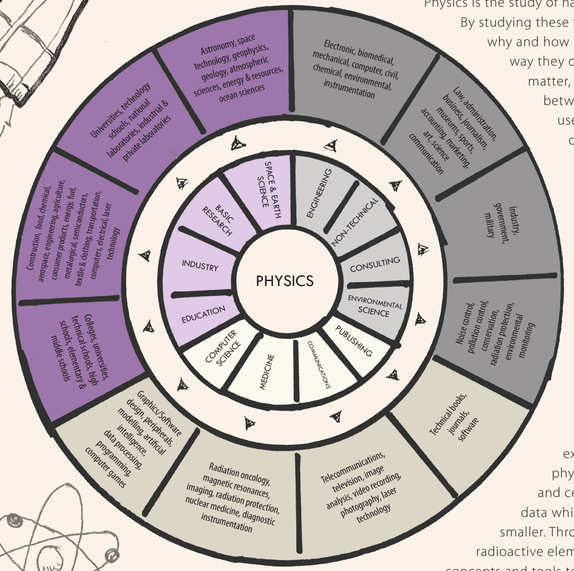
WHAT IS PHYSICS?

Physicists like to ask questions. They try to find answers for almost everything — from questions as complex as how the universe works to questions of everyday phenomena like why the sky is blue. If you like to explore and figure out why things are the way they are, you may enjoy physics.



Physics is the study of natural forces in the universe. By studying these forces, we can understand why and how natural processes work the way they do. When we understand matter, energy and the interactions between them, we can then use that knowledge to discover and create new ideas and technologies. The fundamental ideas of physics underlie all science — astronomy, biology, chemistry and geology — and physics is essential to applied science and engineering.

Physics research and discoveries have contributed to the new and exciting technologies that exist today. For example, innovations using physics allow our computers and cell phones to store more data while becoming increasingly smaller. Through use of MRI, lasers and radioactive elements, doctors apply physics concepts and tools to help diagnose and treat illnesses like cancer. Physics research is also being focused on discovering more efficient and cleaner energy sources. **Many of the problems that will need to be solved in the next several decades will require knowledge of physics.**

Career Plot Source: AIP Statistics, Pub. R-370

WHY STUDY PHYSICS AT K-STATE?

The Kansas State University Department of Physics is one of the top-funded physics departments among its peers in the United States, receiving approximately $7 million in annual external funding. K-State possesses one of the most complete and modern facilities for physics education and research in the central United States.

Students are given the opportunity and encouraged to participate in world-class research conducted alongside our faculty members using state-of-the-art equipment. Our students often publish papers in refereed journals during their undergraduate careers.

The department consists of highly renowned professors from all over the world. There are a total of 30 full-time faculty members, including five university distinguished professors, nine fellows of the American Physical Society (APS), two recipients of outstanding junior investigator awards given by the National Science Foundation (NSF) and U.S. Department of Energy, and two CASE/Carnegie National Professor of the Year winners.

WHAT ARE MY DEGREE OPTIONS?

Regardless of which degree path you choose, your physics course work will allow for hands-on experiences before graduation in physics research areas.

Bachelor of Science in physics:
This degree program provides professional preparation for students who plan to pursue advanced degrees in physics.

Bachelor of Science in general physics:
This degree program provides a broad foundation in fundamental principles for students who wish to pursue careers in technical areas or continue professional or graduate studies in areas outside of physics. This option is often chosen when pursuing a second major or degree.

Bachelor of Arts in physics:
This degree program combines a foundation in physics with a broad general education for students who wish to pursue careers in non-technical areas or continue professional or graduate studies in areas outside of physics.

A physics degree is very flexible and allows for you to simultaneously get a second degree in another academic field. We currently have students getting a dual major or degree in math, psychology, chemistry, and engineering, for example. We offer customized course scheduling to aid you in accomplishing whatever path you are interested.

Note: The need for qualified physics teachers in Kansas and other states is already high and is expected to increase. At Kansas State, students can earn a physics degree and secondary education degree concurrently.

WHAT ARE SOME RESEARCH AREAS?

Physics research is active and exciting. Kansas State University has a thriving physics department that has many vibrant and relevant areas of research.

Atomic, molecular and optical physics
Our researchers in the James Macdonald Laboratory study the fundamental behavior and interactions of atoms, molecules and light using intense ultrashort laser pulses. Our facilities include some of the most advanced laser sources, putting us at the forefront of ultrafast, intense laser science. The lab's many lasers are used to study the physics of intense lasers interacting with atoms and molecules, in order to understand the basic properties of nature, as well as develop applications in telecommunications.

Cosmology and particle astrophysics
K-State's cosmology group researches many topics, such as how and why the universe is expanding, and how the very large-scale properties of the universe are related to the very small-scale properties of atomic matter. They also use experimental data to understand the properties of dark energy, and confirm whether Einstein's theories are still valid.

High-energy physics
This group studies physics at the smallest known scales of the universe; the indivisible particles that make up atoms and matter. The group seeks to provide answers to many fundamental questions of physics such as the existence of extra dimensions of space, dark energy and the nature of the dark matter of the universe, and the origin of mass. The group members collaborate with many groups throughout the world, including the Fermilab near Chicago, and with CERN in Switzerland, where recently they were involved in discovering the Higgs boson.

Physics education research
The physics education group conducts research related to the teaching and learning of physics, and develops learning materials based on that research and the research of others. The group continues to develop cutting-edge teaching technology, as well as improve both in-service and pre-service teacher education.

Soft and condensed matter physics
Our condensed matter physics group performs research in a multitude of areas, including controlled assembly of nanoparticles into 2-D and 3-D solids, the stretching of proteins, and growth of nanowires and their application to living cells. Our soft matter group works at the interface of physics, chemistry and biology.