Physics has brought such revolutions as relativity, quantum mechanics, and the “big bang” theory, profoundly altering the way mankind views the universe.
PHYSICS BACHELOR OF SCIENCE

PHYSICS AT SLU
Want to unlock the secrets of the universe? Want to know how the physical world actually works? In the 20th Century alone, physics has brought such revolutions as relativity, quantum mechanics and the big bang theory, profoundly altering the way mankind views the universe. The Physics degree at SLU stresses not only the fundamentals of physics, but also the understanding of its applications to other areas such as chemistry, biology and engineering. Graduates are prepared to be the discoverers and pioneers of the 21st Century.

The Physics degree at SLU is recognized for its many unique program features, as well as, the student and alumni accomplishments:

• Students can adapt the program to their own career plans through a focused set of eight allied electives. These electives are selected in consultation with the student’s academic advisor, with input from faculty members. For example, a student who wants to go into medicine may take courses in the pre-med program. Students can also use their allied electives to obtain a minor or a second major.

• Undergraduate students have the opportunity to conduct research with faculty members and publish their research findings in conference proceedings or journals.

• A low student-to-faculty ratio ensures undergraduates the opportunity for meaningful interaction with their professors.

• The Summer Undergraduate Research Experience (SURE) allows students to study specific topics of interest under the direction of a faculty member, while receiving a stipend.

• Competitive summer internships and cooperative education programs are available within the industry and with government agencies. Students intern at prestigious organizations such as the Institute of Astrophysics of the Canary Islands, the Keck Graduate Institute, the National Earthquake Information Center and the National Oceanographic and Atmospheric Association (NOAA) Climate Diagnostics Center.

• SLU’s program places an emphasis on computers as the premier solving tools and gives students projects requiring computer-based solutions, helping them to gain expertise in programming and the use of scientific software packages. In laboratory courses, students will learn to use computer interfaces and electronic equipment, preparing them to enter industries that require not just theoretical knowledge, but also the ability to apply principles to real-world situations.

• Students gain a solid foundation in analytical, computational and laboratory skills through course work in mathematics, computer science, and physics.

The B.S. degree emphasizes undergraduate research and applications of computers in physics, taking advantage of the state-of-the-art facilities at Parks College. Students in the program gain a solid foundation in analytical, computational and laboratory skills through work in mathematics, computer science and physics.

Saint Louis University recognizes the importance of the education of the whole person. In order to round out their education, all students at Parks take courses in theology, humanities, ethics, social and behavioral sciences and cultural diversity.

INDUSTRY INTERACTION
Physicists have played a major role in the discovery of many new phenomena leading to whole new technologies. The invention of the transistor, by physicists, has made the computer possible, while the development of lasers has led to diverse applications ranging from laser surgery to supermarket scanners. Post-graduation options for physics majors are numerous and wide-ranging. Many physics graduates can be found continuing their physics education in graduate programs, others go on to medical school, law school or enter the industry, working for companies such as Anheuser-Busch, Boeing or Peabody Energy.
FEATURED FACULTY

Physics Professor, Jean Potvin, Ph.D., applies his research with parachutes to the problem of lunge-feeding by rorqual whales. It appears that the physics of lunge feeding may ultimately limit the maximum size of whales. They consume food in a way that can be compared to the opening of a parachute. A feature was showcased on Discovery Channel’s website.

Dr. Potvin (pictured above) has been working with a team of biologists to construct a physical model of a whale feeding. They suspect the whales practice lunge-feeding. The whale will dive down to great depths to find food. Once it gets deep enough, the whale accelerates rapidly then slows down dramatically, behaving essentially like a parachute.

Through this research, scientists are able to learn about whale feeding behaviors, despite the fact that whales feed deep below sea-level, where observation is difficult.

FEATURED STUDENT GROUP

The Society of Physics Students has a very active chapter at SLU. It was recently awarded the Outstanding Chapter Award by the national organization. The group’s goal is for students interested in physics to explore the lighter side of physics and provide development opportunities. Physics majors, minors and those just passionate about the subject are encouraged to participate in the casual, yet active and award winning group. The group built a Rubens’ tube, which is a wave flame tube, demonstrating a standing wave. It shows the relationship between sound waves and air pressure. The students host demonstrations during major school events and National Engineers Week, when high school students come to Parks to learn about engineering and science.

WHY I CAME TO PARKS

“I came to Parks with the desire to nurture my strong passion for physics and Parks has held true to my expectations. Not only did I receive a terrific theoretical physics education, but I also had the opportunity to create plenty of physics ‘toys’ with other physics enthusiasts. These exciting ventures opened more doors for me, including several summer internships. For example, during my sophomore summer, I had a research internship in biophysics at Keck Graduate Institute in Claremont, California, where I researched the nonlinear dynamics of a gene regulatory network and met several other biophysicists. It was an awesome experience!

Parks has also helped me develop as a leader in the academic community. I took an active role in the Society of Physics Students, serving as the president for two years. We were even named the Society of Physics Students Chapter of the Year 2007-2008! It felt great to achieve such a bounty by only doing what I loved with people that were some of my best friends! Recently, I was also awarded the James D. Collins Award for Excellence in Student Academic Achievement. This honor is not mine alone, but also that of my great professors and friends.”

-Christopher Pierse, physics major
SAINT LOUIS UNIVERSITY ENGINEERING

ABOUT PARKS COLLEGE

Several global challenges have emerged as opportunities for engineering and aviation students of Saint Louis University to make a difference, to apply their education in a context that is technically brilliant, socially responsible and uniquely enterprising, and to ultimately make the world a better, more inclusive place.

As technology alters every facet of our lives, aviation scientists, computer specialists and engineers are more in demand than ever. SLU’s Parks College of Engineering, Aviation and Technology has a world-wide reputation for its aviation and engineering programs. Our alumni have touched every NASA mission, developed patented technology for wind energy and won national and international awards.

“I invite you to make an appointment for a personal tour. Our faculty, staff and students will be delighted to show you around and answer your questions.”

K. Ravindra, Ph.D., Interim Dean

Parks College of Engineering, Aviation and Technology
3450 Lindell Blvd.
St. Louis, MO 63103
Phone: 314-977-8203
Fax: 314-977-8403
Email: engineering@slu.edu
Website: parks.slu.edu

Office of Undergraduate Admission
Saint Louis University
221 N. Grand Blvd.
St. Louis, MO 63103
Phone: 314-977-2500
or 1-800-SLU-FOR-U
Email: admitme@slu.edu
Website: visit.slu.edu