

MORAVIAN COLLEGE

DEPARTMENT OF PHYSICS and EARTH SCIENCE

An overview of the department and its offerings. For further information, visit the website at www.moravian.edu/physics.

The study of science can be a challenging, yet rewarding, endeavor for students who choose to pursue it. In particular, the study of physics constitutes a strong major at Moravian College because of the unique experiences that are available. These experiences are characterized by a strong foundational preparation, meaningful community outreach, a student-centered esprit de corps, and opportunities for students to engage in their own research.

Strong, Personalized Academic Majors

Moravian's physics and earth science department offers an experience that is different in many important ways from other colleges and universities.

Rather than incorporate all upper level laboratory experiences into a single advanced laboratory course, Moravian offers a number of advanced lab experiences that are associated with specific courses including Linear Electronics, Modern Physics, Optics, Electricity and Magnetism I and II, and Quantum Mechanics. Through this experimentally oriented curriculum, students acquire a wide range of valuable experimental skills.

Students will effectively complete a mathematics minor while earning a physics major, witnessing mathematical techniques alongside practical applied uses.

Physics majors work with computers in a number of different ways and are offered courses that are not included

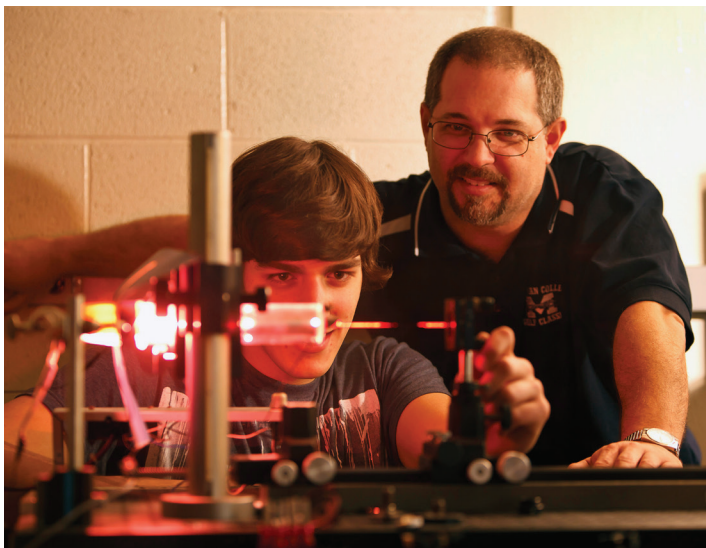


in other school curriculums, such as year-long courses in mechanics, electricity, and magnetism.

Our department has a strong history of students performing independent research through the Honors program, independent studies, and SOAR (Student Opportunities for Academic Research). In Honors, the student performs a year-long research project and writes and defends a comprehensive thesis. The department also has a strong history of graduates who have gone on to continuing graduate education—approximately 58 percent in the past decade. Moravian ranked 12th in the nation in a Franklin and Marshall College poll measuring physics students who go on to obtain a Ph.D. in physics.

One of the more attractive aspects of the department is its size—with a faculty of three full-time professors and two to six majors each year, typically. (The national average is approximately three majors graduating per year for all institutions.) At Moravian, personal attention and small classes are the norm. Faculty interact with students on a daily basis and are responsible for all laboratories; teaching assistants or graduate students do not run labs.

As upperclassmen, physics majors are assigned to a student research lab that they can use as their own personal office, and are granted access to all of the labs. Students feel connected to the environment within the department and spend time in the labs doing science and





performing research, developing a camaraderie with their fellow physics majors. The Moravian College chapter of the Society of Physics Students (SPS) is one of the longest operating such chapters, and one of the strongest, in the country, among liberal arts schools.

The department currently consists of three teaching labs, five research labs, a student lounge, machine shop, rooftop astronomy station, and an instrument lab.

Multiple degrees are offered, depending on the interests of the student—both the Bachelor of Science and Bachelor of Arts. In addition, significant cooperative and dual degree programs in geology and engineering also are available with other institutions. For example, a Moravian physics major may earn a B.S. at Moravian and an M.S. in engineering from Lehigh University.

Hands-On Learning— Characteristics of the successful physicist

Students who choose to major in physics are exposed to a wide variety of courses both within the program and as part of the broad-based liberal arts education provided at Moravian. The successful graduate of this department will leave Moravian having acquired certain general characteristics:

- The ability to think critically and problem-solve using many methods.
- Independence—through the SOAR and Honors programs which allow independent research while working closely with a faculty member.
- A strong work ethic—due to the challenging workload required of physics students.
- Creativity—from the chance to formulate unique solutions to problems that require innovative thinking and applications of diverse methods to obtain solutions.

- Curiosity—the open-ended avenues for exploration created by the experiments students perform encourage a spirit of curiosity.
- Good communication skills—fostered by presentations made locally and at regional and national conferences.
- Strong experimental experiences—students apply ideas learned in class in experimental studies and labs.
- Solid mathematical foundation—because physics is a mathematically oriented science.

Alumni Careers in Physics and Earth Science

- Ainsley Niemkiewicz '08 earned a master's degree in medical physics from University of Pennsylvania, and works as a medical physicist in Florida.
- Matt Devlin '07 earned a Master of Science in engineering from Lehigh University and works for an engineering firm in New York.
- Dan Corey '05 majored in both physics and economics and works for an energy company in New Jersey.
- Katie Washer '05 teaches physics at Emmaus High School in Emmaus, Pa.
- Steve Sweeney '03 earned his Ph.D. in physics from Lehigh University and teaches physics at King's College.
- Aaron Buckner '03 earned a Master of Science in engineering from Notre Dame University and works as a mechanical engineer at Grumman Aircraft.
- Laurie Sibbach Morgus '01 earned a Ph.D. in physics from Lehigh University and taught at Drew University. She works as a sales manager at Thor Labs.
- Chad Weiler '00 earned his Ph.D. in optical science from the University of Arizona and works at Johns Hopkins University Applied Physics Lab.
- April Major '93 earned a law degree from Villanova University.
- Scott Pfeiffer '92 works for an acoustical engineering company in Chicago.

Long before 1776,
Moravian College stood for
life, liberty, and the pursuit of happiness.
As the sixth-oldest college in America,
we believe everyone is born with an innate love of learning.

Our mission is to set it free.

To every student of every circumstance,
we promise the power of the liberal arts,
a whole wide world of experience,
and a deeper enjoyment of life.

Pursue them all with passion.