# SCIENCES

WHITWORTH
UNIVERSITY

The sciences are strong at Whitworth. Our faculty members are Christian scholars who love to teach and conduct research with students. They provide students with an interactive, in-depth science education that equips them to investigate the natural world, solve real-world problems and serve the needs of humanity.

Our science program provides enhanced career and graduate-school preparation through faculty-student research and experiential learning that develop students' ingenuity and creativity. Competitive research grants from NASA, the National Science Foundation and other funding agencies support student research projects year-round. Students also have opportunities to present their original research at local, regional and national conferences.

Students receive competitive scholarships and fellowships to the country's top graduate schools, including Massachusetts Institute of Technology, Columbia University and Harvard. Our graduates also lead successful careers in a broad range of fields, from aerospace engineering, software development and environmental science to medicine, nursing and physical therapy.

**In the 2019-20 academic year, 1,111 students (46.5 percent of the student body) were majoring in biology, chemistry, computer science, engineering, health science, math, kinesiology or physics at Whitworth.**

**Each summer, students can pursue unique research opportunities on campus or nationwide that often provide a stipend as well as room and board. Off-campus locations have included NASA Space Academy, Duke University, Los Alamos National Laboratory and Stanford University.**

# WHITWORTH SCIENCE FACILITIES

## ROBINSON SCIENCE HALL

The William P. and Bonnie V. Robinson Science Hall is a three-story, 63,000-square-foot facility dedicated to biology, chemistry and health science. Robinson Hall contains high-tech classrooms and state-of-the-art laboratories, research facilities and instrumentation that enable the faculty-student research and hands-on learning for which Whitworth is known. The building's main level features a coffee shop, study areas and a plaza; faculty offices on each level enhance faculty-student interaction. Campus landscaping includes two teaching gardens with native plants and trees that reflect a variety of distinct zones in the Northwest. The Nelson Garden also includes a lighted courtyard, a water feature and benches with Wi-Fi hotspots.

## JOHNSTON SCIENCE CENTER

The Eric Johnston Science Center is home to the offices of the engineering & physics and math & computer science departments. The building includes classrooms, labs, two greenhouses, a science library and an auditorium.

### HIGHLIGHTS OF WHITWORTH SCIENCE FACILITIES

- Compound and stereo microscopes for lab courses
- Crystallography center equipped with a single-crystal X-ray diffractometer
- Nuclear magnetic resonance (NMR) spectrometer
- qPCR instrument for molecular analysis
- Vivarium to study live animals
- Anatomy & physiology lab with human cadavers

**Robinson Science Hall's top-of-the-line equipment allows students to perform experiments that meet the high standards of today's quickly evolving research environment. Of course the coffee shop is, like the research equipment, indispensable to our productivity!**

**Aaron Putzke** | Professor of Biology


BIO
LOGY

The Whitworth Biology Department emphasizes breadth of knowledge about all levels of the natural world and the practical application of that knowledge through faculty-student collaborative research.

Whitworth exposes students to the major ideas of biology and their effects on how we view the meaning of life and human nature. At the same time, the department introduces students to the technical skills required for biology professionals and for graduate study in the field or laboratory. This exploration also prepares students to enter positions in healthcare, pharmaceuticals, education, environmental science and related research fields.

## RECENT GRADUATES

**Jenna Morris** is seeking a master of science degree in environmental and forest sciences at the University of Washington.

**Tanner Scholten** is a technician for the Washington Department of Fish and Wildlife, working to conserve salmon in the Wenatchee River watershed.

**Alex Hoffmann** received his M.D. from the University of Washington School of Medicine and is completing his residency at Harvard Medical School in Boston.

**I worked with Dr. Aaron Putzke (pictured at left) researching zebrafish to discover how cells communicate with each other during embryogenesis. I also gained a great deal of useful experience for medical school by taking comparative anatomy with Dr. Michael Sardinia in the human anatomy lab. The first-floor lounge became my home my senior year – I made so many great memories there with friends who have gone off across the country to do amazing things.**

**Alex Hoffman** | Biology Major

## BIOLOGY PROGRAM HIGHLIGHTS

- Vivariam with live animals, and an anatomy & physiology lab with human cadavers
- Field biology study opportunities, both internationally and at the 605-acre Verbrugge Environmental Center

## DEGREES/PROGRAMS OFFERED

Biology (B.A., B.S., minor)
Environmental Science (B.S.)
Environmental Studies (B.A., minor)

## INTERDISCIPLINARY PROGRAMS

Biophysics (B.S.)
Biochemistry (track)
Bioinformatics (B.S.)

## FOR MORE INFORMATION

Department Chair:
Grant Casady, Associate Professor
gcasady@whitworth.edu
509.777.4597

**whitworth.edu/biology**


CHEM
ISTRY

Whitworth's innovative approach to the study of chemistry grounds first-year students in the major themes in the field. Students also complete core courses that introduce them to the principles of chemistry, and they choose from a variety of upper-division chemistry courses that support their career and graduate-school objectives. These elective courses offer students laboratory and/or field experiences in specialized areas.

Our chemistry professors are committed to developing students who are critical thinkers and who can adapt to the shifting complexities of the sciences. A chemistry degree from Whitworth prepares students for a variety of careers in the biological, medical and environmental fields, and in research and development in industrial and government laboratories. The degree also prepares students for graduate study in chemistry, medicine, dentistry and pharmacy.

## RECENT GRADUATES

**Thu (Mi) Nguyen** is pursuing a Ph.D. in chemistry at the University of Illinois at Chicago.

**Joseph Regalado** is a process engineer at Kaiser Aluminum in Spokane. He earned a master of science degree in materials science and engineering from the University of Washington.

**Dustin Dillon** is a laboratory technician at UCLA Health in Los Angeles.

**"What prepared me the most for graduate school was that research was a requirement for graduation. Because of my monthlong research, I had a more competitive profile compared to my peers. Second, I was taught to write scientific papers and make posters. I am so glad that I had writing-intensive courses and seminars."**

**Thu (Mi) Nguyen** | Chemistry Major

## CHEMISTRY PROGRAM HIGHLIGHTS

- On- and off-campus research opportunities for students pursuing chemistry B.S. degrees
- Specialized courses and research in green chemistry
- High placement rate in graduate schools and careers

## DEGREES/PROGRAMS OFFERED

Chemistry (B.A., B.S., minor)

## INTERDISCIPLINARY PROGRAMS

Biochemistry (track)
Physical Chemistry (track)

## FOR MORE INFORMATION

Department Chair:
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# HEALTH SCIENCE

Our comprehensive health science program helps students develop an understanding of the form and function of the human body through science, theory and application in a variety of classroom and clinical settings. What sets this major apart is its integration of biological, chemical and social/psychological perspectives, which allows students to understand the dynamics of human health and wellness.

A health science degree from Whitworth prepares students for careers, graduate programs and professional schools in areas including medicine, physical therapy, chiropractic care, physician assistant, human physiology, nutrition, public health, disease prevention and other health-related professions.

## RECENT GRADUATES

**Jacob Kriegbaum** is a physical therapist at Acceleration Physical Therapy in Spokane. He earned a doctor of physical therapy degree from Eastern Washington University.

**Isaac Fonken** is a physician at Poudre Valley Hospital in Fort Collins, Colo. He graduated from the University of Colorado School of Medicine.

**Erin Witthuhn** is the aquatics director at Pikes Peak YMCA in Colorado Springs. She earned a master's degree in sport and exercise science at the University of Northern Colorado.

**"In the health sciences department, each of the professors contributed to my learning experience, either by challenging me to think outside the box or by inspiring me to take responsibility for my education. My advisor, Mike Ediger, was particularly instrumental in supporting my education and preparing me for life after Whitworth."**

**Shannon (Eshoff) Zelewski** | Health Science Major

## HEALTH SCIENCE PROGRAM HIGHLIGHTS

- Human-performance lab
- Anatomy & physiology lab
- Excellent graduate school placement rate

## DEGREES/PROGRAMS OFFERED

Community Health (B.A.)

Health Science (B.S.)

Nursing (B.S.)

Pre-Athletic Training

Pre-Chiropractic

Pre-Pharmacy

Pre-Physical Therapy

Pre-Physician Assistant

## FOR MORE INFORMATION

Department Chair:
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**whitworth.edu/healthscience**

# PRE-MED

A team of dedicated faculty advisors leads a sequence of specialized seminars for students in pre-med and other pre-professional health tracks. The pre-med student club also offers support, MCAT preparation and guest speakers from healthcare fields. Students who complete Whitworth's recommended pre-med program have a 100 percent acceptance rate to at least one medical school. Students are accepted to some of the top medical schools in the country, including the University of Washington, Oregon Health & Science University, Cornell University, Duke University, Boston University, the University of Pennsylvania, Chicago Medical School and Mount Sinai University.

## RECENT GRADUATES

**Kristin Santroch Ozimek** graduated with a doctor of dental medicine degree from the University of Pennsylvania through the U.S. Air Force Health Professions Scholarship Program. She is a general dentist for Ketchikan Indian Community Tribal Health Clinic in Ketchikan, Alaska.

**Luke Welle** graduated from Oregon Health & Science University School of Medicine and is a resident physician in the University of New Mexico's Department of Emergency Medicine.

**Samantha Wolf** graduated with a doctor of veterinary medicine from Washington State University and is an associate veterinarian at VCA North Division Animal Medical Center in Spokane.

> **"I didn't expect to have such a great community of both students and professors alongside me these last four years. The experiences, opportunities and conversations I have had as part of the pre-med program have opened my eyes to healthcare not only in the United States, but in other parts of the world as well. I definitely feel holistically prepared for what comes next."**
>
> **Nathalia Alvarez** | Biology Major, Pre-Med Program

## PRE-PROFESSIONAL PROGRAMS

Pre-Chiropractic
Pre-Dentistry
Pre-Medicine
Pre-Pharmacy
Pre-Physical Therapy
Pre-Physician Assistant
Pre-Veterinary

## FOR MORE INFORMATION

Co-Advisor:
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Co-advisor:
Karen Stevens, Professor, Chemistry
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Co-advisor:
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# ATHLETIC TRAINING

Whitworth's nationally accredited athletic training program merges a rigorous academic discipline with a variety of practical clinical experiences while students work toward a master of science in athletic training (MSAT). The program provides students with a strong foundation in the prevention, diagnosis, treatment and rehabilitation of injuries and illnesses in a variety of settings.

Whitworth designed its MSAT program in response to nationwide changes that require accredited athletic training programs to transition to the master's level. Students can complete an accelerated bachelor's and master's degree in only five years, or they can complete the master's degree alone in two years. We strive to prepare athletic trainers who are excellent clinicians and who live out Whitworth's mission through servant leadership and the practice of holistic healthcare.

## RECENT GRADUATES

**Brianna Pace** is a clinical athletic trainer for the Seattle Sounders Football Club, working primarily with its developmental academy.

**Corall Hjert** is an injury prevention specialist at Amazon.

**David Whitmore** is an athletic trainer with Work-Fit, providing care to aerospace mechanics in Washington.

**My relationship with my professors delves much deeper than grades, evaluations and tests. I receive incredible one-on-one time with my mentors and professors in both my clinical and classroom experiences, which makes all the difference. I didn't expect Whitworth's athletic training program to change my life the way that it has.**

**Olivia Bartlett** | Athletic Training Major

## ATHLETIC TRAINING PROGRAM HIGHLIGHTS

- Off-campus clinical rotations
- Small cohorts of students complete the program as a unit
- Clinical experience working with our 21 NCAA DIII sports programs
- Graduates are prepared to take the national Board of Certification exam to become a certified athletic trainer

## DEGREES/PROGRAMS OFFERED

Health Science (B.S.) pre-athletic training track

Athletic Training (M.S.)

Dual degree option (B.S. in Health Science and M.S. in Athletic Training)

## FOR MORE INFORMATION

Advisor:
Stacey Nauman Ortiz,
Assistant Professor
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509.777.3464

**whitworth.edu/athletictraining**


# NURSING

The undergraduate nursing major, leading to the bachelor of science degree in nursing, is offered through a consortium that includes Whitworth, Washington State University and Eastern Washington University. Students generally complete two or three years of study at Whitworth before applying for admission into the WSU College of Nursing. Accepted students then engage in a unique blend of coursework, clinical training and community experience at the nursing school facility, located 7 miles from Whitworth, in downtown Spokane's University District.

## RECENT GRADUATES

**Candyce Brombach** is a surgical/trauma intensive care unit nurse at Sharp Memorial Hospital, in San Diego.

**Ben Ritter** is an R.N. at St. Alphonsus Regional Medical Center, in Boise, Idaho.

**Michelle Bauman** is a medical unit R.N. at Seattle Children's Hospital.

> **I chose to study nursing at Whitworth because this university is very committed to academics, which is important to me. I'm challenged in my classes, so I know I am receiving a great education. Being at Whitworth has definitely changed my life for the better.**
>
> **Chelsey Hayes** | Nursing Major

## NURSING PROGRAM HIGHLIGHTS

- Excellent faculty advising
- Clinical rotations provide real-world experience
- WSU College of Nursing is nationally recognized

## FOR MORE INFORMATION

Advisor:
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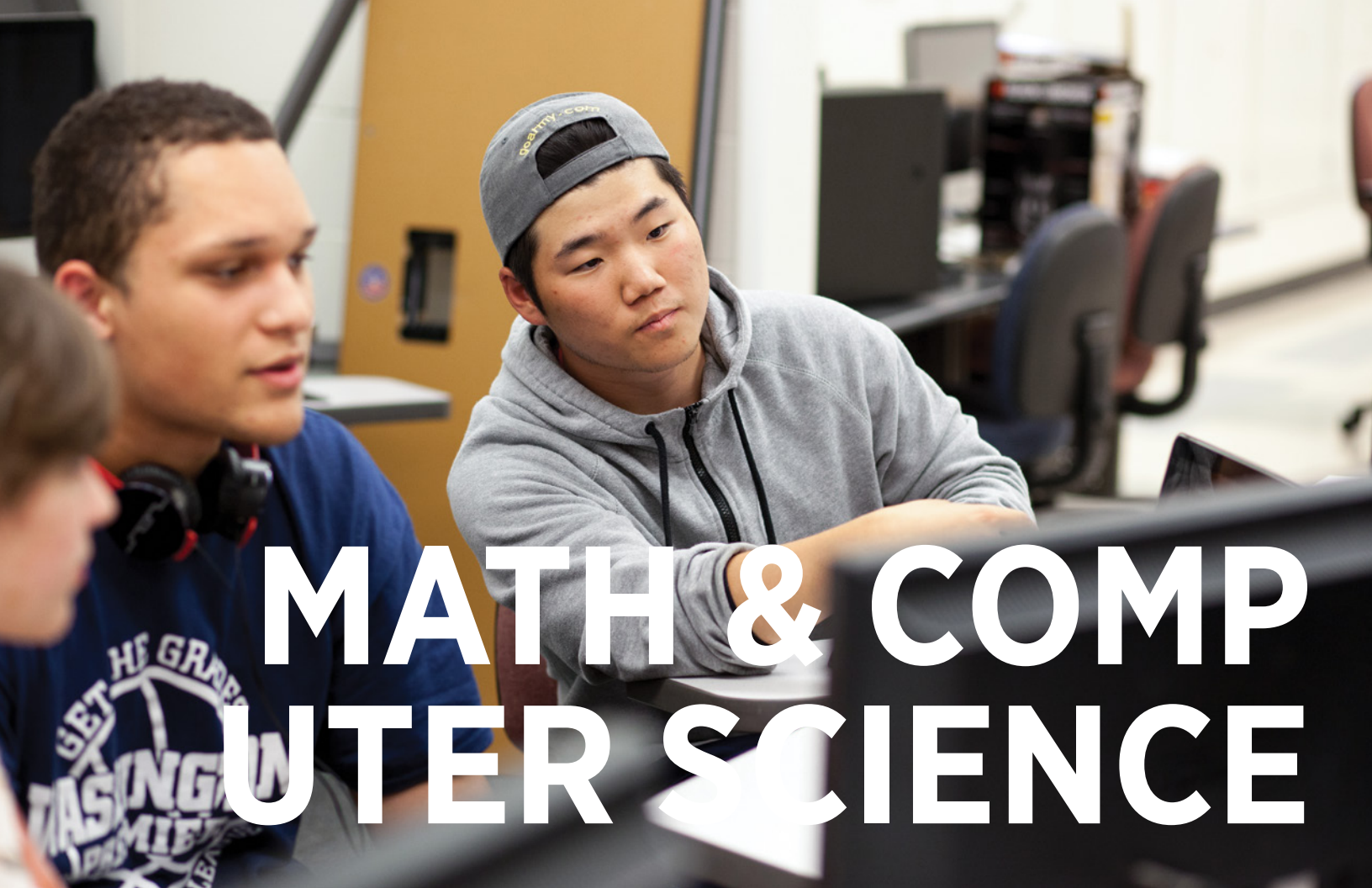
**whitworth.edu/nursing**


MATH & COMP
UTER SCIENCE

The Whitworth Mathematics & Computer Science Department offers a strong, interdisciplinary foundation in mathematics, statistics, computer programming, databases, networks and software engineering. Professors, many of whom have industry experience, challenge students to go beyond the traditional classroom to pursue research and development, service-learning projects, internships and teaching assistantships.

Graduates of Whitworth's math & computer science department are prepared to excel in graduate school and to thrive in high-tech industries as software programmers, systems analysts and technicians, as well as in other positions. Graduates play vital roles in research and development, educational organizations and government agencies. Graduates also go on to work in the business, legal, engineering and data science fields.

## RECENT GRADUATES

**Kat Duarte** interned with Google during college and is now an analyst on the company's trust and safety team.

**Andrew Dodge** is a biostatistician at the Mayo Clinic in Rochester, Minn. He earned a master's degree in biostatistics from Georgetown University.

**Jose Oronia** is a software engineer at T-Mobile in Snoqualmie, Wash.

**"I conducted computer-science education research throughout college. The first two years I worked with the National Center for Women & Information Technology and the Department of Defense. My junior and senior years I conducted research with mentorship from Dr. Pete Tucker and Dr. Martha Gady. I gained a passion for education while conducting this research, and it ultimately helped dictate what companies I was interested in working for, since social impact is important to me when choosing a workplace."**

**Kat Duarte** | Computer Science Major

## MATH AND COMPUTER SCIENCE PROGRAM HIGHLIGHTS

- Capstone career-preparation and networking course
- High-demand software quality assurance and testing program
- International perspective and study abroad opportunities

## DEGREES/PROGRAMS OFFERED

Computer Science (B.S., B.A., minor, tracks)
Mathematics (B.A., B.S., minor)
Applied Mathematics (B.S.)
Bioinformatics (B.S.)
Information Technology (minor)
Business (track)
International Project Management (track)
Network Systems (track)
Mathematical Economics (track)
Mathematical Finance (track)
Data Science (track)

## FOR MORE INFORMATION

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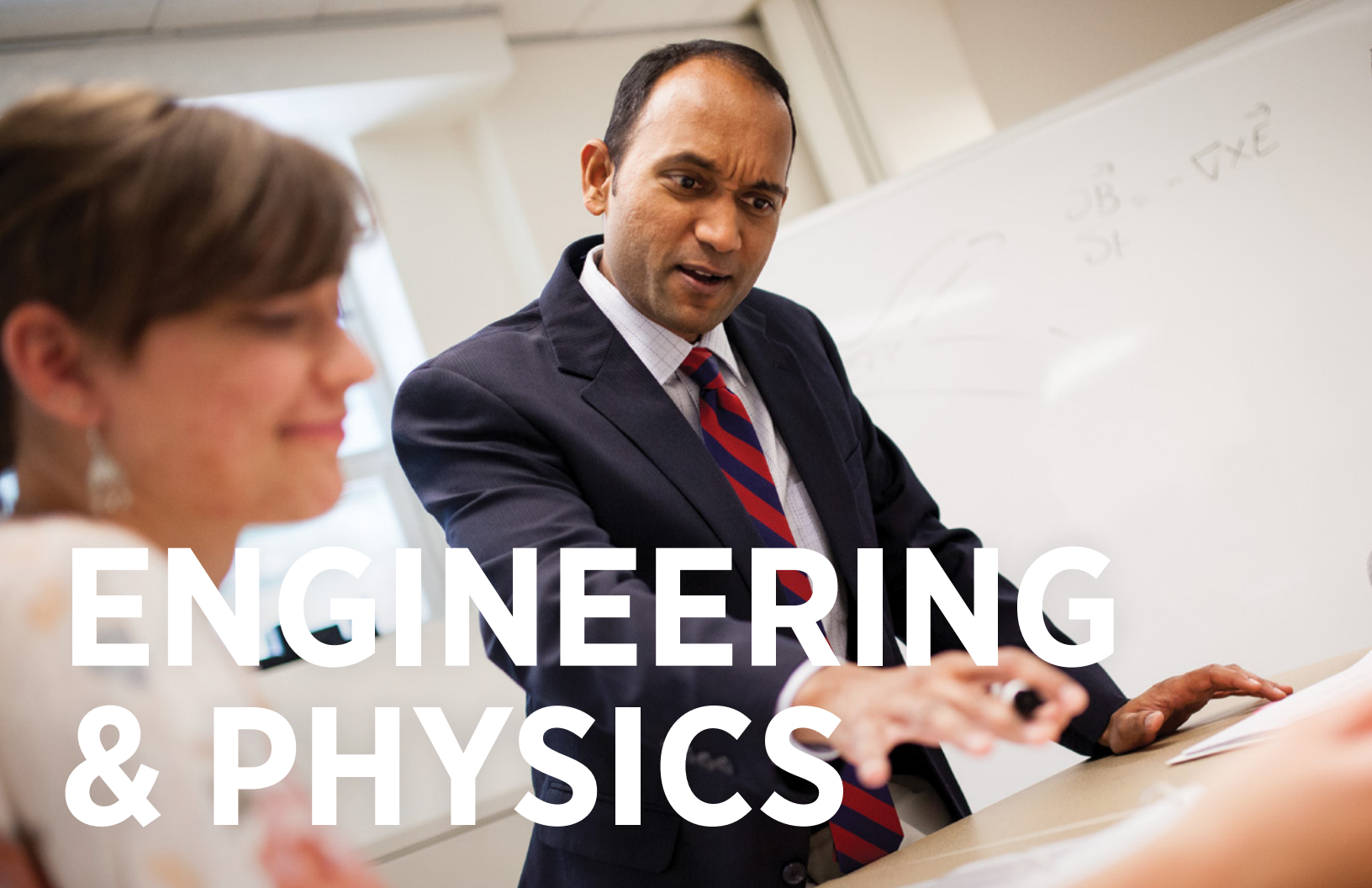
**whitworth.edu/mcs**



# ENGINEERING & PHYSICS

Engineers and physicists are best prepared for a rapidly changing and interconnected world when they have a broad liberal arts education that equips them to anticipate, understand and adapt. Students can choose a four-year engineering degree that provides a broad engineering background that includes both mechanical and electrical emphases. Or our 3-2 program allows students to receive a bachelor's degree from Whitworth and a bachelor's degree in a specific engineering field from one of our partner schools. We have formal agreements with Columbia University, Washington University in St. Louis and Washington State University.

Physics majors are prepared for success in the world's best graduate programs, teaching careers at the high school level, employment as applied physicists, and technical careers in business. Biophysics majors are well prepared for medical school or graduate programs in medical physics, biomedical engineering and biophysics.

## RECENT GRADUATES

**David Hoff** is an engineering program manager at Apple. He earned a master's degree in management science and engineering at Stanford University.

**Katie Olleman** is a bridge designer for the Washington State Department of Transportation. She earned master's degrees in civil engineering and mechanical engineering at the University of Washington.

**Nick Brunner** is a software engineer at The Johns Hopkins University Applied Physics Laboratory in Laurel, Md. He earned a master's degree in electrical engineering from Washington University in St. Louis.

**Whitworth prepared me to thrive as a master's student. I felt over-prepared for all of my courses. The mentoring I received from my professors is unparalleled in availability and quality. It was instrumental in my personal and professional growth.**

**David Hoff** | Engineering-Physics Major

## ENGINEERING & PHYSICS PROGRAM HIGHLIGHTS

- Extended laboratory projects
- Record placement of students into top graduate programs
- Individual mentoring by professors

## PROGRAMS OFFERED

Engineering (B.S.)
Engineering (3-2 program)
Physics (B.A., B.S., minor)
Applied Physics (B.A.)
Biophysics (B.S.)

## FOR MORE INFORMATION

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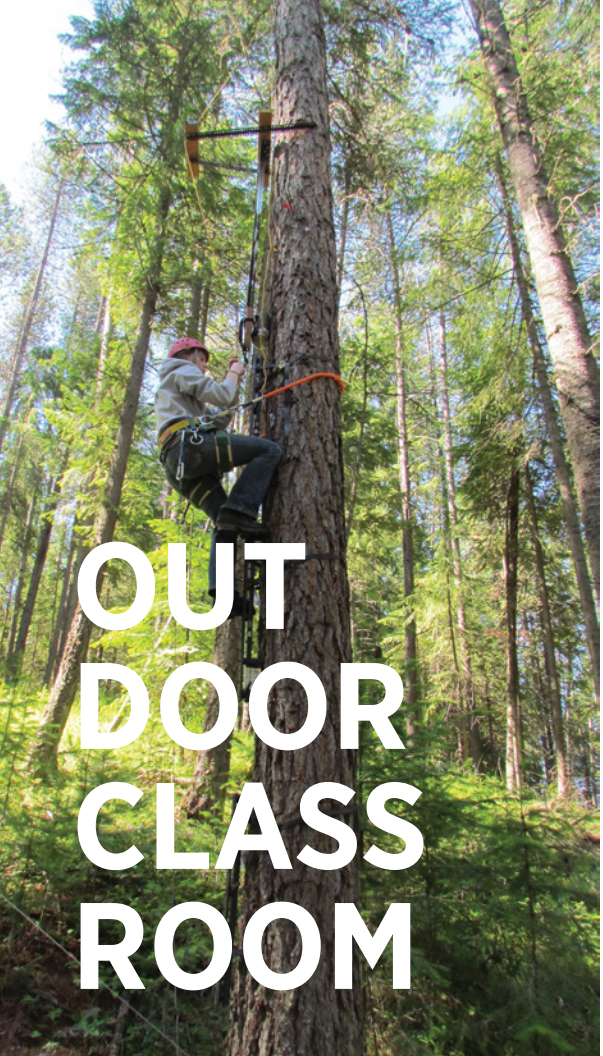

# OUT DOOR CLASS ROOM

Whitworth's Verbrugge Environmental Center, nestled in the beautiful Scotia Valley 35 miles northeast of campus, offers 605 acres of forested land where faculty members and students do hands-on research and learning. The center provides a unique local context in which students investigate issues related to resource conservation, human ecology, ethno-botany and ecosystem restoration; they also engage in basic and applied ecological research.

## OPPORTUNITIES INCLUDE:

- Assessing reforestation and habitat restoration
- Researching hydrology and vegetation dynamics in response to climate variations
- Studying the intersection of economic, cultural and ecological forces in the region

## FOR MORE INFORMATION

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# OFF-CAMPUS STUDY OPPOR TUNITIES

## JAN TERM/MAY TERM

During January or May, Whitworth science students have the opportunity to participate for three weeks in off-campus study programs that are led by faculty members and provide invaluable cross-cultural experiences and hands-on learning.

## A SAMPLE OF FACULTY-LED OFF-CAMPUS STUDY PROGRAMS

**England and Germany**: Math History

**Ireland and Wales; India**: Computer Science

**Japan**: Athletic Training

**South Africa**: Health Sciences

**England, France and Germany**: Chemistry

**Tanzania**: Biology and Political Science

**North Cascades, Wash.**: Ecology & the Bible (pictured at left)

Discover more at whitworth.edu