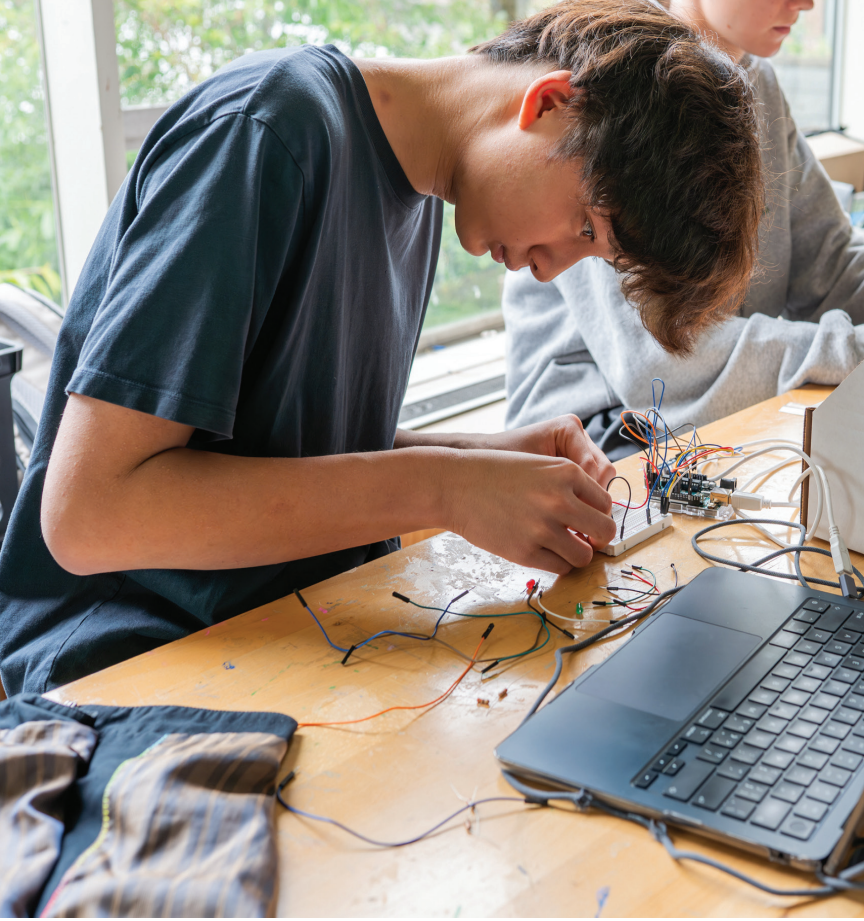


SCIENCE RESEARCH

at Oregon Episcopal School



At OES, science isn't confined to a textbook. By blending rigorous research with active fieldwork across our campus ecosystems, we give students the tools and independence to think, execute, and defend their work like practicing scientists.





Spaces Designed for Discovery

Our campus is home to state-of-the-art labs and instruments built for hands-on learning. It also serves as a natural laboratory, with two wetlands and abundant surrounding ecosystems that provide rich opportunities for field-based observation, data collection, and real-world scientific investigation. Students use advanced equipment and technology to conduct experiments, collect data, and explore real scientific questions.



- Greenhouse Gas Chromatograph
- Microplate Reader
- Fourier Transform Infrared Spectrometer
- Discrete Analyzer
- Automated Behavioral Measurement Equipment
- DNA Sequencer

Students graduate as scientifically literate citizens prepared to thoughtfully evaluate information, solve complex problems, and use their knowledge to make a positive impact in their local and global communities.

Whether a student arrives already passionate about STEM or unsure if science is "their thing," every student is given the opportunity, encouragement, and support to see themselves as a scientist.

Students learn and practice the foundation of inquiry-based science through the study of physics, followed by chemistry and biology. In grades 11 and 12, students have the opportunity to select from an array of electives in which they can continue to explore their specific interests or discover new ones.



Recent science courses include:

- Advanced Bio: Molecular Research
- Advanced Bio: Systems Ecology
- Advanced Chem: Organic Molecules
- Advanced Physics: Mechanics
- Thermodynamics and Optics
- Chemistry and the Visual Arts
- Greenhouse Systems Design
- Marine Science
- Mechanical Systems Engineering
- Process Design Engineering







"I'm really driven by real-world impact and the things I see around me. My science inquiry projects result from looking for novel solutions that answer real-world problems. This often places me outside of my comfort zone, working with materials that I'm not familiar with. But doing work that's translational and using the amazing facilities that OES has is super important to me, and it's really guided my journey scientifically." – Ishaan B.

Research Projects and Exhibitions

Every student completes a Science Inquiry Project (SIP) as a cornerstone of their core science classes.

For each science inquiry project, students observe the world, learn to ask testable questions, design and implement strategies to collect relevant information, and analyze and interpret data to form conclusions. By the time students graduate, they complete multiple projects that demand progressively sophisticated approaches and foster iterative growth.

The Aardvark Science Expo, an annual science, engineering, computer science, and math research exhibition, gives students the chance to present research on topics of their choice. Experts from the Portland area judge the Expo so all students experience what it means to defend their work and communicate their process.

Top projects advance to the Northwest Science Expo (NWSE) and the International Science and Engineering Fair (ISEF).

Recent projects that were finalists for ISEF:

- A low-cost tyrosinase-based biosensor for colorimetric toxicity screening of water samples
- Physics-informed deep learning for robust landslide detection: A dual-stream architecture with geomorphological constraints
- Examining the effects of over-the-counter supplements on paralysis rates of Caenorhabditis elegans exhibiting Alzheimers-like Amyloid-ß plaques
- A computational framework for simulating the mechanical Penrose process using Wolfram Mathematica

OES has the only school fair in Oregon that is a direct pre-qualifier for ISEF







Science Faculty

Our science faculty bring a combination of advanced academic training, professional research experience, and applied expertise across fields. Many have worked in university labs, environmental consulting, engineering design, legal and policy contexts, or industry-based research settings, and they bring that lived experience directly into their teaching.

What sets them apart is not just what they know, but how they teach: they design original, applied courses rooted in their own expertise and passions, creating learning experiences that go far beyond traditional "off-the-shelf" high school science. Their depth of knowledge allows students to engage with complex, real-world problems using the same tools, methods, and ways of thinking as practicing scientists and engineers.

As one of the premier science programs in the nation, OES pairs university-grade facilities with unmatched opportunities for student research.

oes.edu/science

Oregon Episcopal School is a college preparatory, independent school in Portland, Oregon, serving nearly 880 students from Pre-Kindergarten through Grade 12, including approximately 60 boarding students from around the world in Grades 9-12.

Oregon Episcopal School

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