

The background of the entire page is a complex, abstract visualization of quantum science. It features a central horizontal band of overlapping, semi-transparent waveforms in shades of green, yellow, and orange. Above and below this band are numerous thin, colorful lines (red, blue, purple, yellow) that crisscross the space, often ending in small, glowing spheres of various colors. The entire composition is framed by a white circular border, with a thick red ring just inside it. The overall effect is one of dynamic energy and interconnectedness.

Quantum Science Summer Camp

July 17-28, 2023

A world-class opportunity for high school students and high school teachers energized to study and use quantum science.

Casper College

Casper, Wyoming

QUANTUM SCIENCE SUMMER CAMP

The Quantum Science Summer Camp is a unique opportunity for high school students and teachers who are energized to study and use quantum science.

Taught by professors and scientists from Texas A&M University's Institute for Quantum Science and Engineering, the camp will delve into selected principles of quantum science in the first week and in applications of quantum science to the study of quantum biological systems in the second week. Science and the scientific method of investigation will underscore the process used by students to give scientific validity to their work in the classroom,

laboratory, and group settings. Special guest lecturers include members from the National Academy of Sciences and other world-renowned scientific organizations.

The opportunity for students to learn from leading researchers, scientists, and professionals in the field of quantum science brings a level of learning and interaction to the Quantum Science Summer Camp that is world-class.

The camp includes an opportunity for a limited number of current high school or college instructors to reinforce their knowledge of selected topics in quantum science and from added live activities.

Topics of Learning

Students will gain experience working in teams, presenting ideas, concepts, and results in a group setting, and will see the scientific method of investigation, exploration, discovery, and validation at work.

- Is matter made of particles and/or waves? What are they? What do they do? How do they interact? How or why does it matter? How does quantum physics differ from traditional or classical physics?
- Quantum uncertainty. Can you know where something is and how it's moving?

- Quantum eraser. Can you erase or change the past?
- Quantum superposition, entanglement and teleportation. Can something be in two places at the same time?
- Quantum computing. A perfect security system needs an unbreakable code.
- What is quantum science and how does it impact our lives today?
- How has quantum science increased our understanding of cellular systems and processes of living organisms?

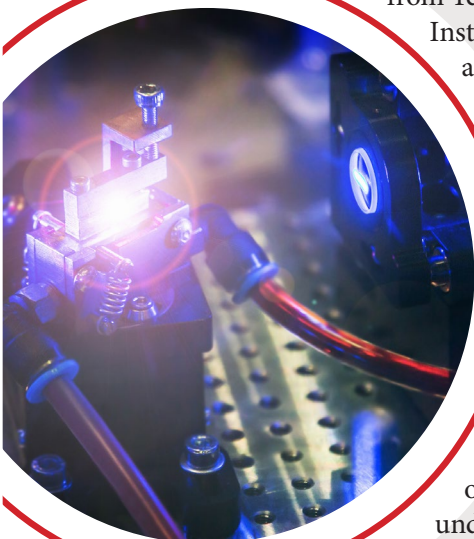
Cost

The Quantum Science Summer Camp is funded through donations from the Wold Foundation; Zimmerman Family Foundation; John P. Ellbogen Foundation; Kemmi Creek Foundation; McMurry Foundation; Tate Foundation; Rocky Mountain Power Foundation; Wyoming Community Foundation; and in partnership with the Institute for Quantum Science & Engineering at Texas A&M University; Texas A&M University; Princeton University; Marlan Scully; Casper College; and the Natrona County School District.

For those selected to attend the Quantum Science Summer Camp, these generous donations make it possible for tuition and on-campus housing and dining expenses to be free for students during the camp program. Students will be responsible for any transportation and travel-related expenses prior to or following the dates of the school.

Location

The Quantum Science Summer Camp is being held at Casper College in Casper, Wyoming, located 4.5 hours north of Denver. If traveling by air, refer to the Natrona County International Airport, CPR, with connections from both Salt Lake City, Utah, and Denver. The airport is located just 15 minutes by taxi from the college.



Camp Director

Marlan Scully was born in Casper and attended both Casper College and the University of Wyoming. He finished his undergraduate studies at Rensselaer Polytechnic Institute and later received his Ph.D. at Yale University. He went on to teach at Texas A&M, Princeton University, and developed a lab at the Baylor Research and Innovation Collaborative. With over 700 scientific articles, many patents, and two textbooks in laser physics and quantum optics, he is highly regarded among the scientific community and a member of the National Academy of Sciences. Every summer, for more than 20 years, Scully has held a summer conference at Casper College on quantum physics, quantum computing, quantum biophotonics, and other advanced quantum science topics. The attendees come from all around the world and typically include the top scientists or researchers in their fields and their students. Nobel Prize laureates and members of the National Academy of Sciences have been featured among conference participants. They come to Casper because of the variety of top scientists who gather here and because Scully makes sure they have a great experience.



Lead Instructor

M. Suhail Zubairy is a distinguished professor in the Department of Physics and Astronomy at Texas A&M University and the inaugural holder of the Munnerlyn-Heep Chair in Quantum Optics. He has made pioneering contributions in the fields of quantum computing, laser physics, and quantum optics. He has authored and co-authored several books and over 300 research papers on a wide variety of research problems relating to theoretical physics. His research and work have been widely recognized by the physics community and he has won many international awards. His book, “Quantum Mechanics for Beginners” — Oxford University Press, May 2020 — is written for someone with only a high school background in physics and mathematics to introduce them to the fascinating world of quantum mechanics. The book includes an introduction to the fields of quantum communication and quantum computing.



Apply Today!

If you're interested in the Quantum Science Summer Camp, go to the website below to learn more or to apply. Participants will be selected based on their application and ability to commit to the full camp schedule.

Application deadline: All applications must be received by March 10, 2023.

Students and teachers apply today:

caspercollege.edu/QuantumScienceCamp

Scan to begin
your application.



Our Partners

Institute for Quantum Science & Engineering
at Texas A&M University
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Funding Assistance Provided by:

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