

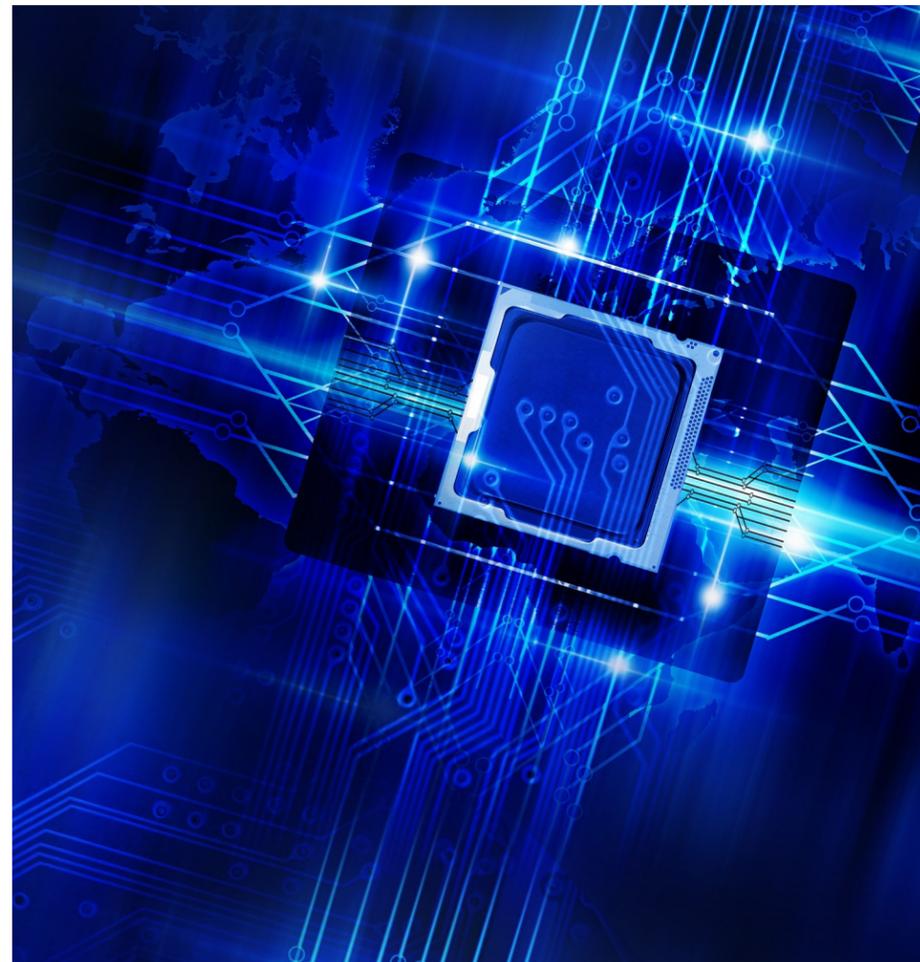
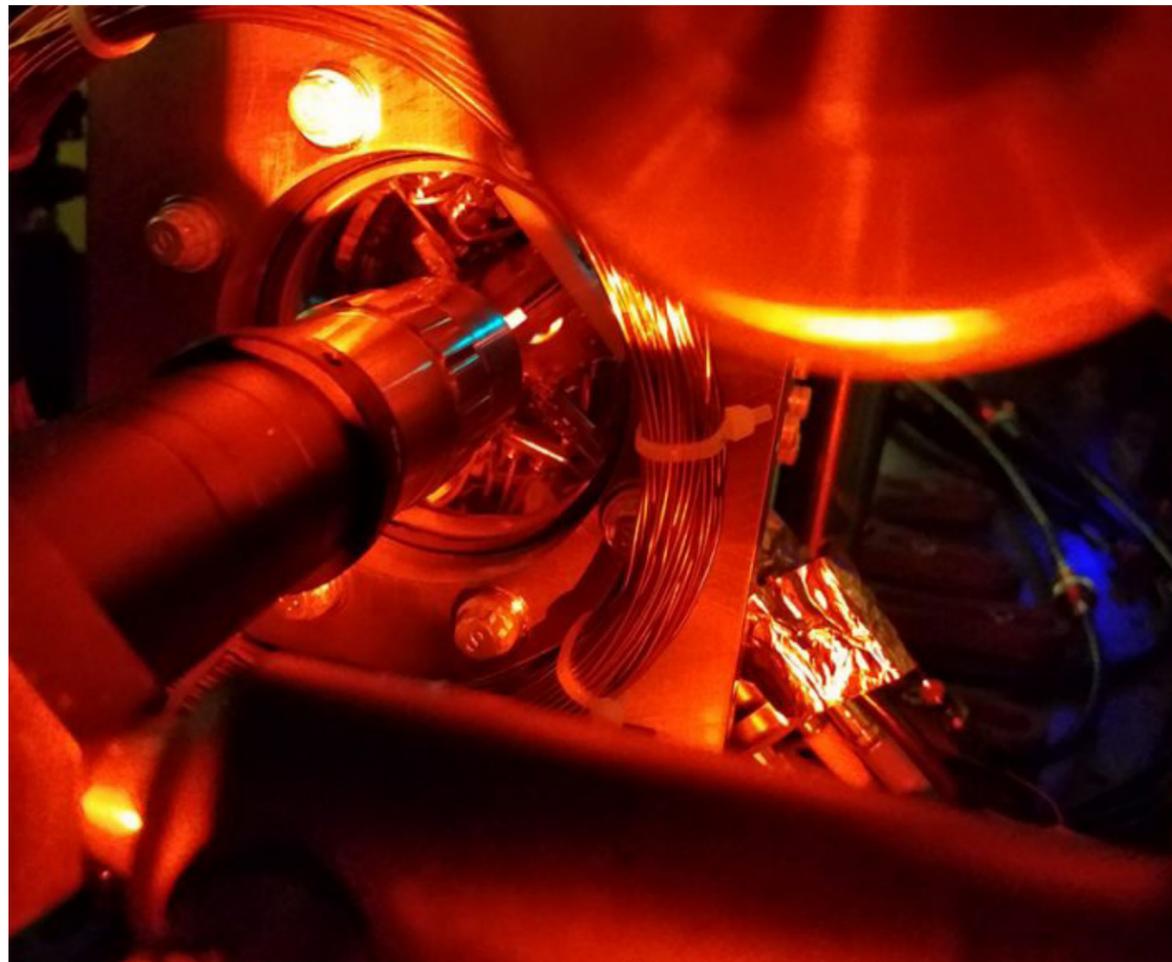
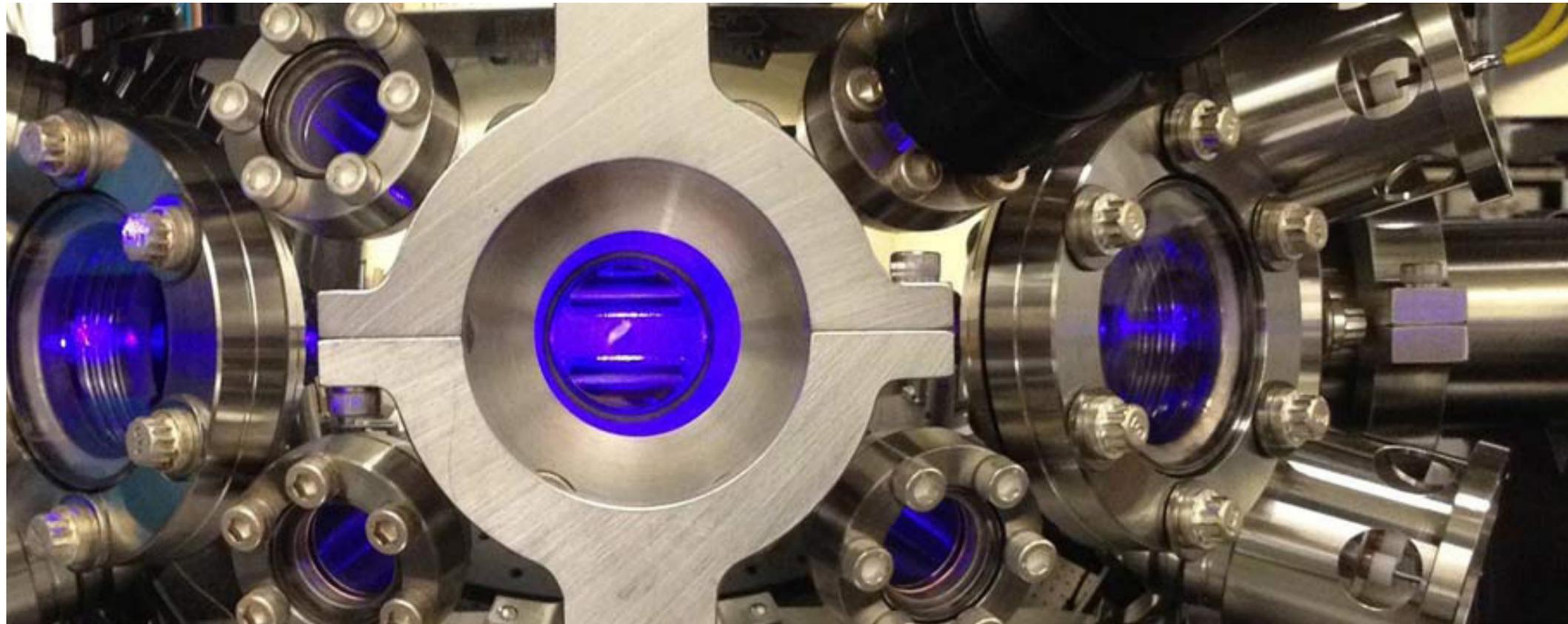
# THE FUTURE STARTS HERE

---

## QUANTUM SCIENCE AND TECHNOLOGY AT UCLA

**UCLA** College  
Physical Sciences

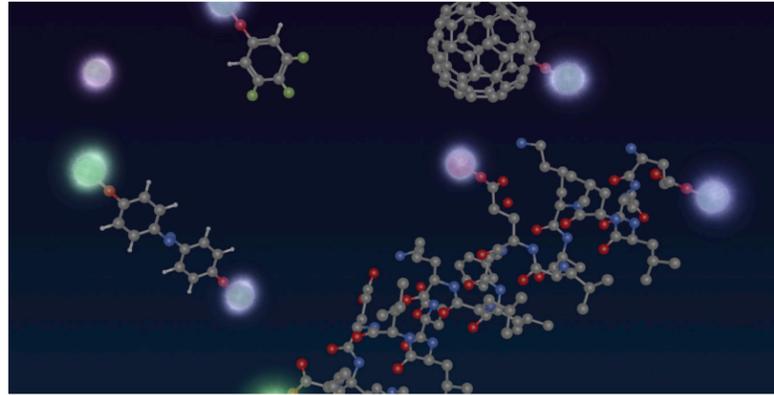
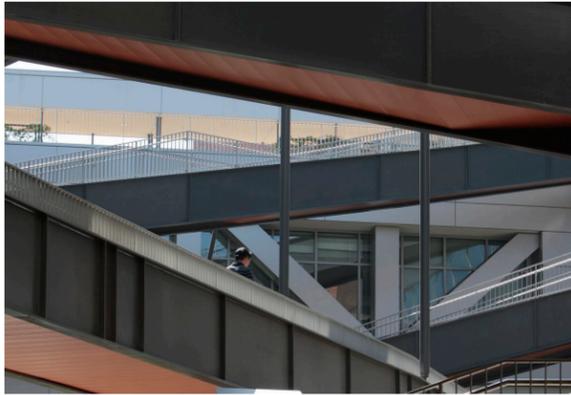
**UCLA** Samueli  
School of Engineering



**THE STUDY OF MATTER**  
and its interactions at the most fundamental level, quantum physics asks questions that have the power to propel human society forward and reshape not only our understanding of the universe but potentially the universe itself.

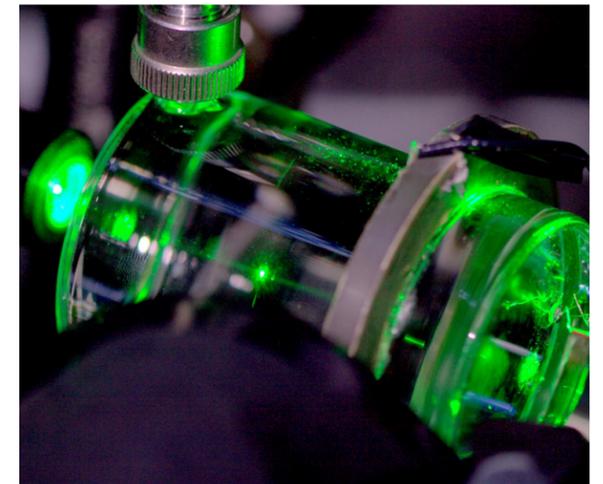
Rooted in one of the most dynamic cities in the world, the nexus of UCLA and Southern California is the heartbeat of the field, priming us to lead quantum science and technology to unprecedented heights for the benefit of all.

The UCLA Center for Quantum Science and Engineering (CQSE) is a diverse group of nationally recognized scientists, thought leaders and educators who are driving the field of quantum science and engineering forward through collaborative research projects that tackle this field's most challenging problems. **JOIN US.**

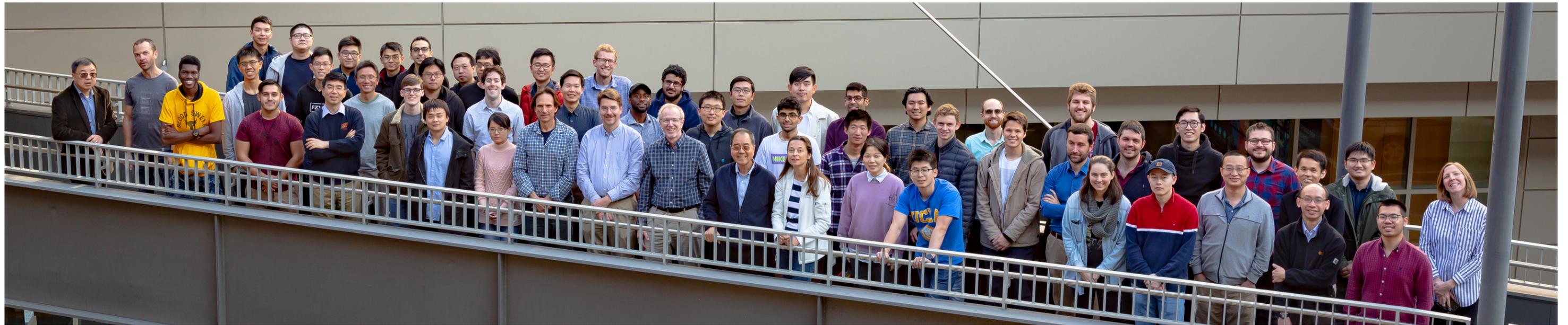


**A JOINT EFFORT OF THE**  
UCLA College Division of Physical  
Sciences and the Henry Samueli School  
of Engineering and Applied Science,  
UCLA CQSE coordinates research  
and teaching activities in quantum  
information science and technology  
across UCLA, including:

- » Cutting-edge research
- » A first-of-its-kind professional  
master's degree in the field  
of quantum science and technology
- » A new off-campus facility for  
academic-industry collaborations  
and startup incubation
- » Building a consortium of industry,  
national laboratories, startups and  
academics to advance the field and  
develop new approaches to research,  
innovation and education



# UCLA CQSE TEAM



**Mark Gyure**, executive director  
Adjunct Professor, Department of Electrical and Computer Engineering

**Eric Hudson**, co-director, physical sciences  
Professor and David S. Saxon Presidential Chair in Physics, Department of Physics and Astronomy

**Kang Wang**, co-director, engineering  
Distinguished Professor and Raytheon Company Chair in Electrical Engineering, Department of Electrical and Computer Engineering

**Richard Ross**, education director  
Program Director, Master of Quantum Science and Technology

**Jens Palsberg**, computer science advisor  
Professor, Department of Computer Science

**Barak Bussel**, chair, UCLA CQSE strategic board

**Clarice Aiello**  
Assistant Professor, Department of Electrical and Computer Engineering

**Anastassia Alexandrova**  
Associate Professor, Department of Chemistry and Biochemistry

**Christopher Anderson**  
Professor, Department of Mathematics

**Amartya Banerjee**  
Assistant Professor, Department of Materials Science and Engineering

**Louis Bouchard**  
Associate Professor, Department of Chemistry and Biochemistry

**Wes Campbell**  
Associate Professor, Department of Physics and Astronomy

**Justin Caram**  
Assistant Professor, Department of Chemistry and Biochemistry

**Sergio Carbajo**  
Assistant Professor, Department of Electrical and Computer Engineering

**Jason Cong**  
Chancellor's Professor, Department of Computer Science

**Lara Dolecek**  
Professor, Department of Electrical and Computer Engineering

**Enrique López Droguett**  
Professor, Department of Civil and Environmental Engineering

**Paul Hamilton**  
Assistant Professor, Department of Physics and Astronomy

**Bahram Jalali**  
Professor, Department of Electrical and Computer Engineering

**Hong-Wen Jiang**  
Professor, Department of Physics and Astronomy

**Zhongbo Kang**  
Assistant Professor, Department of Physics and Astronomy

**Laura Kim**  
Assistant Professor, Department of Materials Science and Engineering

**Anshul Kogar**  
Assistant Professor, Department of Physics and Astronomy

**David Leibbrandt**  
Professor, Department of Physics and Astronomy

**Jason Petta**  
Professor, Department of Physics and Astronomy

**Vwani Roychowdhury**  
Professor, Department of Electrical and Computer Engineering

**Yaroslav Tserkovnyak**  
Professor, Department of Physics and Astronomy

**Paul S. Weiss**  
Professor, Department of Chemistry

**Chee Wei Wong**  
Professor, Department of Electrical and Computer Engineering

## UCLA CQSE QUANTUM INNOVATION HUB

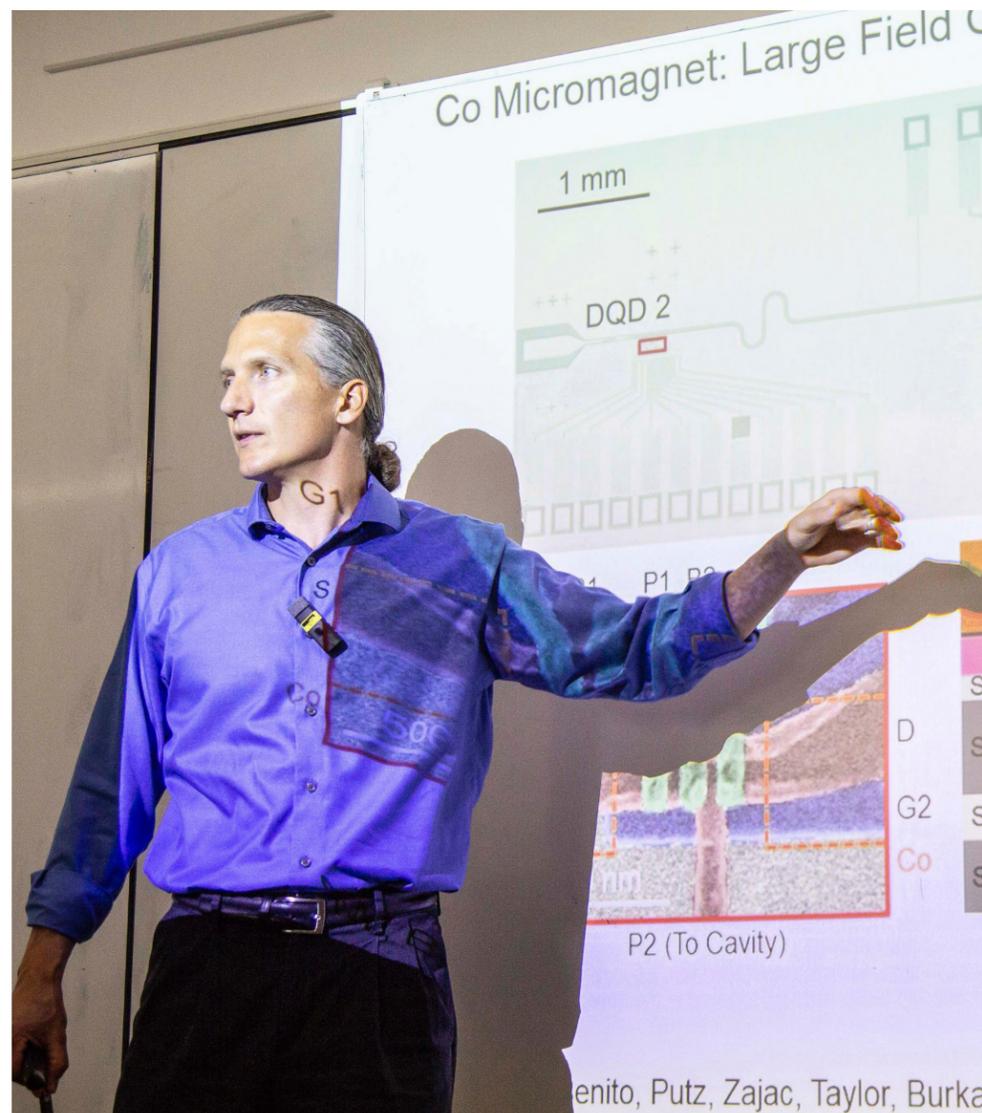
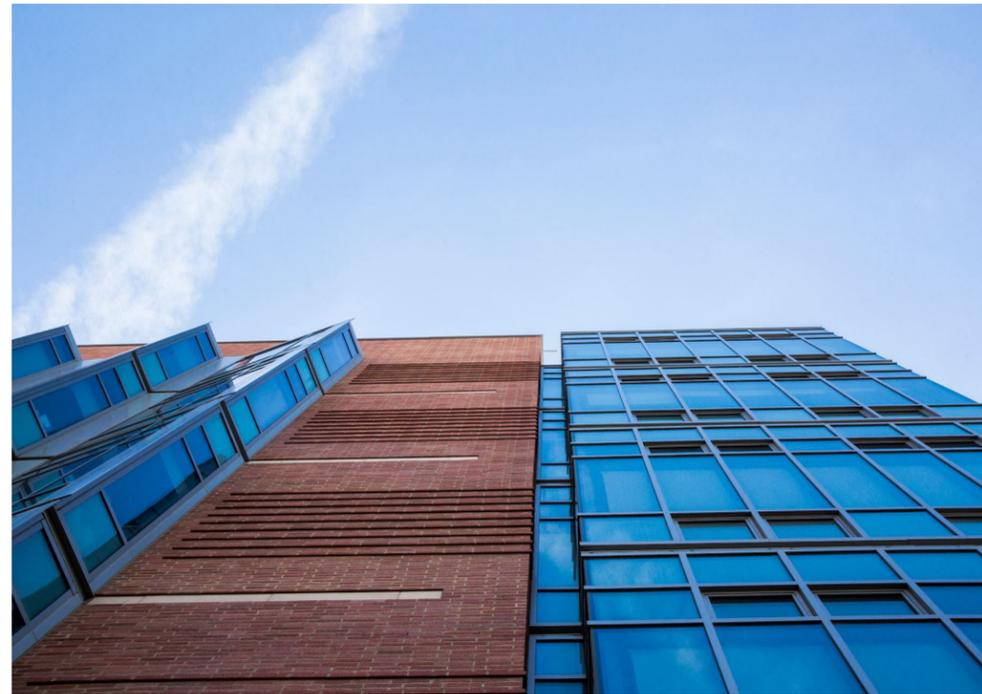
UCLA CQSE is establishing the Quantum Innovation Hub (QIH) to bridge the gap between academia, industry and entrepreneurs.

QIH will become the center of gravity for Quantum Information Science and Technology (QIST) in Southern California—and one of the elite quantum ecosystems globally—through uniting academics, major industry participants and leading startups under one roof to advance the state of the art in QIST.

This building will be owned by UCLA but located off-campus on the west side of Los Angeles and occupied by prominent UCLA faculty and researchers, industry leaders, startups and growth-stage companies. It will consist of dedicated and customized lab space, offices and a variety of shared common areas.

All occupants will have access to shared spaces including conference rooms, fabrication facilities, a cafeteria and more, along with an auditorium that will house seminars and colloquiums given by UCLA researchers and other scientists and ecosystem participants from around the world.

UCLA is receiving significant government funding to build and operate the QIH's advanced spin qubit testbed, which will be led by renowned UCLA physicist Jason Petta, allowing researchers to explore these emerging quantum structures. QIH also plans to host a quantum-focused incubator/accelerator through a partnership with UCLA's innovation and entrepreneurship offices, as well as with outside venture capital firms. In addition, The Hub will house the UCLA Quantum LA Consortium to nurture the quantum ecosystem across all boundaries through frequent colloquia, workshops and other events.



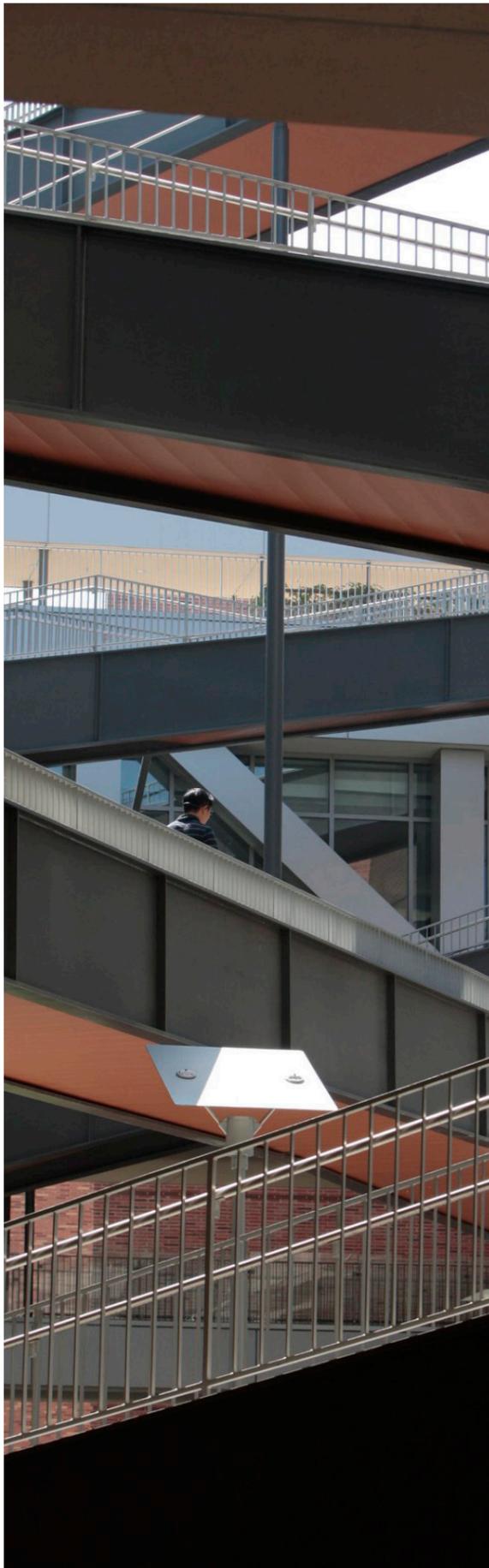
## UCLA MASTER OF QUANTUM SCIENCE AND TECHNOLOGY PROGRAM

The current demand for workers in the quantum industry far outpaces the number of people with the knowledge and practical experience needed to apply for such positions. The new UCLA Master of Quantum Science and Technology (MQST) program, a professional degree program designed to prepare students for careers in research and development of quantum technologies, has launched to address this significant workforce gap. Tailored to those who wish to pursue technical positions that require a unique combination of specialized knowledge and skills, this program addresses the needs of both students and industry while helping safeguard the future of the field.

### The program consists of:

- A rigorous interdisciplinary course curriculum
- A year-long program of laboratory skills development
- An industry-relevant capstone internship

Students will learn how to work in a laboratory with quantum optics, quantum sensing and materials and quantum devices, and they will learn the algorithms, language and tools of quantum computing. A distinguishing feature of the UCLA MQST program is the significant laboratory component. Partnerships are ever evolving with industry leaders, national labs and startups to ensure a robust, diverse range of available internship opportunities.



## PRIORITY GIVING OPPORTUNITIES

### QUANTUM INNOVATION HUB NAMING – \$50,000,000

This gift will secure a visionary partner's name on the QIH, the novel off-campus site owned by UCLA and occupied by UCLA faculty and researchers as well as key industry leaders, startups, growth-stage companies and other collaborators in the emerging field of quantum information science and technology. The Hub is a pioneering space, bringing together the deep domain of knowledge of academics, state-of-the-art technological capacities of industry and long-term government commitment to establish UCLA as the world leader in the future of this field. It serves to enable research that is vital to our national and economic security and to accelerate the advent of practical quantum computing.

### PRIZE POSTDOCTORAL FELLOWSHIP PROGRAM – \$10,000,000

This endowment will create a robust prize postdoctoral fellowship program that will assist with attracting the best scholars in quantum physics who can contribute to the UCLA CQSE's long-term research goals as an integral part of the team. A thriving cohort of postdoctoral researchers constitutes a crucial component of any department. These scholars represent the next generation of faculty members, are fully immersed in pioneering research and make important contributions to the intellectual life of the department, serving as a bridge between graduate students and faculty.

### ENDOWED CHAIR (WITH SALARY SUPPORT) – \$5,000,000

This endowed chair with salary support will sustain a full-time faculty employee on a permanent basis. Endowed chairs help recruit and retain the highest-caliber faculty whose teaching and research exemplify UCLA's mission, and they allow faculty to undertake innovative research not supported by federal grants.

### CENTER FOR QUANTUM SCIENCE AND ENGINEERING ADMINISTRATIVE CHAIR – \$2,000,000

This fund would create an endowed administrative chair to support the research, teaching and service activities of the chair holder, the executive director of the UCLA CQSE. This endowed chair would provide a remarkable base of financial support for the center's groundbreaking research, as well as autonomy and flexibility to enable the executive director to invest in the center's priorities and emerging opportunities.

### ENDOWED GRADUATE STUDENT FELLOWSHIPS – \$400,000+\*

Graduate students are essential to maintaining a world-class education for undergraduate students and helping faculty make significant breakthroughs in their research. Moreover, they are the future of quantum science in higher education, industry and a variety of other fields. Your gift would establish fellowships to support the most deserving graduate students based on merit, financial need or a combination of both, and it would enable the department to continue recruiting and maintaining top physics candidates from around the world.

*\*UCLA College Senior Dean and UCLA Division of Physical Sciences Dean Miguel García-Garibay is dedicating resources to inspire gifts that will transform the division's future through support of endowed chairs. Qualifying gifts to establish an endowed chair in the Division will be matched by up to \$1M. For example, a \$4M gift will receive a match of \$1M for a \$5M endowment. Dean's gift-matching funds are limited and available on a first-come, first-served basis until June 30, 2024; pledges are payable over a five-year period.*

*Qualifying estate gifts made through an irrevocable testamentary pledge may also be matched at 50% during the donor's lifetime (up to \$1M). Estate gift matches are made on a case-by-case basis.*

**UCLA** College **Physical Sciences**

**UCLA**

**Samueli**  
School of Engineering

For more information on supporting the UCLA Center for Quantum Science and Engineering with a pledge gift or an irrevocable testamentary pledge, please contact Amber Buggs at [amberbuggs@support.ucla.edu](mailto:amberbuggs@support.ucla.edu) or (310) 994-5782.