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Stellar Scholar

UC Santa Barbara student Alec Cao will take a post-graduation trip most undergraduates can only dream of when he moves to England this summer for a full year of high-level research with an expert mentor.

Cao, a fourth-year physics major in the university's College of Creative Studies (CCS), has been named one of only 16 winners of the 2021 Churchill Scholarship, a highly competitive annual award that offers outstanding American students the opportunity to pursue graduate studies in engineering, mathematics or science at Churchill College, University of Cambridge.

The scholarship, which was set up at the request of Sir Winston Churchill to fulfill his vision of advancing science and technology on both sides of the Atlantic, provides funding for a year of Master's study. It offers recipients the opportunity to undertake independent research, make connections with future colleagues from around the world and study at the only college at Cambridge that is focused on STEM subjects. Cao is this year's sole awardee from the entire UC system.

"Winning this scholarship is an amazing opportunity to explore myself a little more by putting myself in a different environment and culture," Cao said. "In terms of my career goals, this is an amazing opportunity to work closely with a professor who is doing novel research in his field."

Cao currently works in the lab of professor David Weld, who specializes in the area of ultracold atomic physics. At Cambridge, he will conduct research with professor

Zoran Hadzibabic.

“Alec is a truly unusual talent in the lab, and his research accomplishments have already far exceeded my expectations,” said Weld. “Ultracold atomic physics is a technically demanding field. The complex optical and electronic systems which comprise a quantum degenerate gas machine stretch the limits of tabletop experimentation. Most strong undergraduates spend their entire time at UCSB working on a subset of these systems; Alec has already mastered them all. It’s been a real pleasure working with him, and I can’t wait to see what he accomplishes in the future.”

After he completes his year abroad, Cao plans to begin a Ph.D. program. “For me, it’s about my connection with this particular professor and his work,” he said. “He’s leading really creative and unique experiments, so I’ll be gaining skills that I wouldn’t get going directly to a Ph.D.”

As a CCS student, Cao said he was able to do advanced coursework that helped him mature as a physicist, and he benefitted from close working relationships with faculty. “Opportunities for undergraduate physics research is excellent at UCSB,” he said. “Through CCS, I got an early chance to pursue advanced research with my current advisor despite my lack of experience.”

“Alec embodies the CCS spirit by feeding his passionate curiosity through the incredible opportunities available across campus,” said CCS Dean Gerardo Aldana. “He has excelled at two hallmarks of the CCS experience: creating knowledge and collaborating closely with faculty on original research. We congratulate him and his mentors on this amazing recognition.”

Cao also credits UC Santa Barbara’s stellar undergraduate research opportunities with igniting his interest in ultracold atom physics, and setting him on a path that led to the Churchill Scholarship and, ultimately, to his future career.

“I knew absolutely nothing about this field before coming to the university,” he said. “Early on, I was looking for any research opportunity and was offered this small project in my current lab. It grew from there, as I was given a lot of amazing opportunities to do high-level work. That helped me fall in love with the field and that’s why I’m continuing to pursue it.”

Churchill scholarships have been awarded continuously since 1965. UC Santa Barbara has had two prior winners of the scholarship, in 2009 and in 2019.

About UC Santa Barbara

The University of California, Santa Barbara is a leading research institution that also provides a comprehensive liberal arts learning experience. Our academic community of faculty, students, and staff is characterized by a culture of interdisciplinary collaboration that is responsive to the needs of our multicultural and global society. All of this takes place within a living and learning environment like no other, as we draw inspiration from the beauty and resources of our extraordinary location at the edge of the Pacific Ocean.