



UC SANTA BARBARA
Admissions, Outreach, & Diversity
Graduate Division

UC LEADS

UC Leadership through Advanced DegreeS

UC San Diego Multilayer Resistance

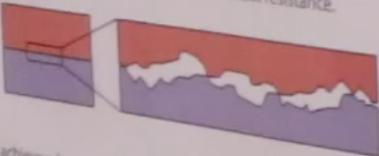
¹Department of
²Department of

Motivation

Air conditioners cost homeowners \$29 billion dollars in energy costs and produce an estimated 117 million tons of carbon dioxide in the U.S. each year¹. In an effort to reduce our dependence on unsustainable sources of energy, this project aims to create a novel material for windows with a thermal conductivity equal to air (0.02 W/mK). A material with low thermal conductivity inhibits heat flow and can save us a substantial amount of money in air conditioning costs and prevent carbon dioxide emissions.

Core Concepts

At the interface where two solid materials meet, on the macroscale they are seemingly flat. However, upon closer inspection, microscale analysis shows two rough surfaces that are not in perfect contact with each other. As heat is passed through, it is inhibited by a layer of air. This concept is known as thermal contact resistance.



To achieve a low thermal conductivity using thermal contact resistance a multilayered material was constructed. Each additional layer increases the thermal resistance of the sample.



THE MISSION

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The **University of California Leadership Excellence through Advanced Degrees (UC LEADS)** program is designed to engage and educate California's future leaders by **preparing promising students** for advanced education in science, technology, engineering, and mathematics (STEM). UC LEADS is designed to identify **upper-division UCSB undergraduate students** with the potential to succeed in these disciplines, but who have experienced situations or conditions that have adversely impacted their advancement in their field of study.



Once chosen as UC LEADS Scholars, the students embark upon a **two-year program of scientific research and graduate school preparation** guided by individual Faculty Mentors. Scholars are provided with an excellent opportunity to explore their discipline, experience a research environment, and improve their opportunities for future study in their chosen field. The Scholars gain **valuable educational experience**, the University develops **a better prepared and more diverse graduate applicant pool**, and ultimately, the state gets well-educated future leaders. One of the hallmarks of the UC LEADS program is that scholars spend their **second summer as a summer program scholar** at another UC Campus.



UC LEADS Program Offerings

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8 Week Summer Program (June to August)

\$4500 Summer Program Stipend (1st year)



\$5000 Summer Program Stipend (2nd year) to do Research at Another UC Campus



Housing Accommodations for 2nd Summer



Summer weekly Academic Enrichment and Professional Development Workshops

Preparation for the GRE

7th week Summer Symposium

8th week Summer Poster Presentation

Spring UC LEADS System-Wide Symposium + Conference Attendance Opportunities



Additional Academic Year Programming/Activities

2 years

Research &
Professional
Development

Who is eligible for UC LEADS?

US Citizens and Permanent Residents

Students with AB540 Designation are eligible to apply

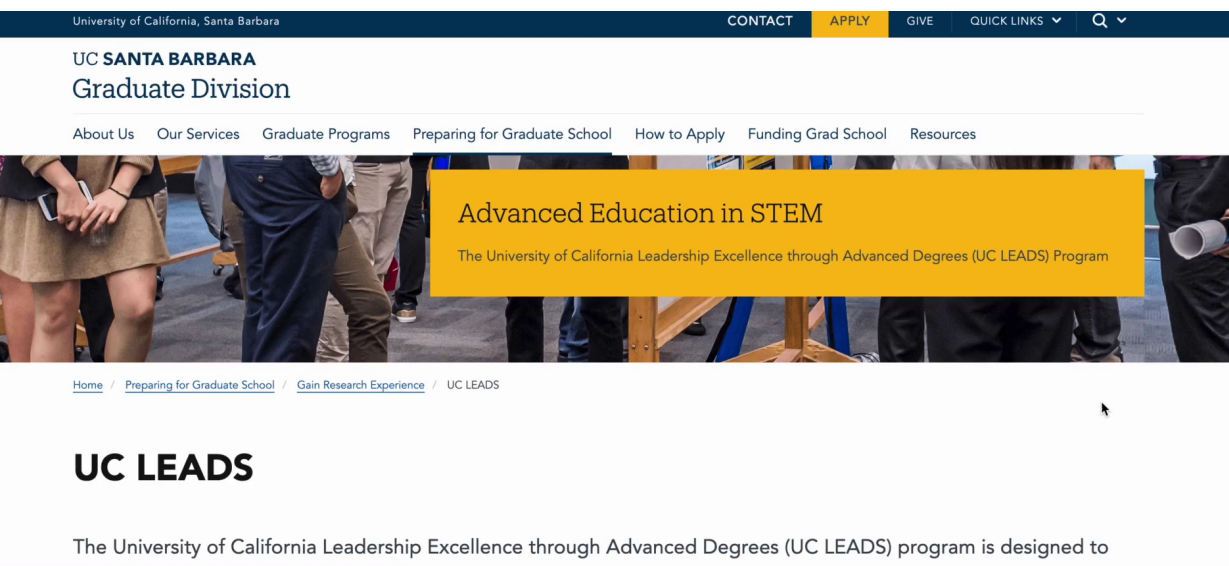
Mathematics, STEM, or Engineering major

Priority Consideration

- Groups underrepresented in higher education
- Students from economically/educationally and disadvantaged backgrounds
- First generation to attend college
- Non-traditional students
- INDIVIDUALS WHO HAVE FACED LIFE CHALLENGES

Students should apply prior to their junior year and/or be on track to receive baccalaureate degree by end of 2nd year of UC LEADS program

Minimum cumulative GPA of 3.0

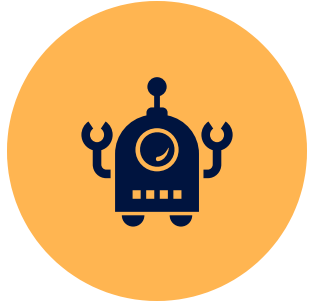


graddiv.ucsb.edu/uc-leads

**Applications
are now
OPEN.**

Deadline is March 17, 2023.

Why **join** UC LEADS?



Mentorship

Scholars are matched individually with UCSB faculty and graduate student mentors who provide training and support fitted to the individual interests and academic goals of the scholar.



Professional and Academic Development

Scholars broaden their professional and academic experiences through workshops, Graduate Record Examination (GRE) training, and presentations to peers, staff, and academics.



Financial Support

Scholars are funded as part of their summer research experiences via summer stipend, housing accommodations, and roundtrip transportation accommodations.



Research Experience

Scholars have an opportunity to engage in summer research experience as a fully funded scholar. Scholars are provided with an excellent opportunity to explore their discipline, experience research, and improve their opportunities for future study in their chosen field.

UC LEADS Workshops

PROGRAM
ORIENTATION

THE GRADUATE
SCHOOL
APPLICATION

WRITING
WORKSHOP:
PERFECTING
THE PERSONAL
STATEMENT

GRE
WORKSHOP

BUILDING
RELATIONSHIPS
WITH FACULTY
MENTORS

EFFECTIVE
PRESENTATION
SKILLS AND
HOW TO
CONFERENCE

+ SPECIAL TOPICS
AND OUTINGS



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SUMMER HOUSING

housing.ucsb.edu

SAN JOAQUIN VILLAGES
APARTMENTS

3 bedroom

2 bathrooms

23 minute walk

to UCSB Campus

**Kitchen and
Living Room**

Meet the Team

Contact us about UC LEADS
at summerprogram@graddiv.ucsb.edu



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Preparation Professional
students planning Academic
visit U C symposium
School Work program
Mentorship GRE LEADS Research
faculty lab Development
Support mentors UC career Financial
other presentations
Graduate 2-year Experience
conferences