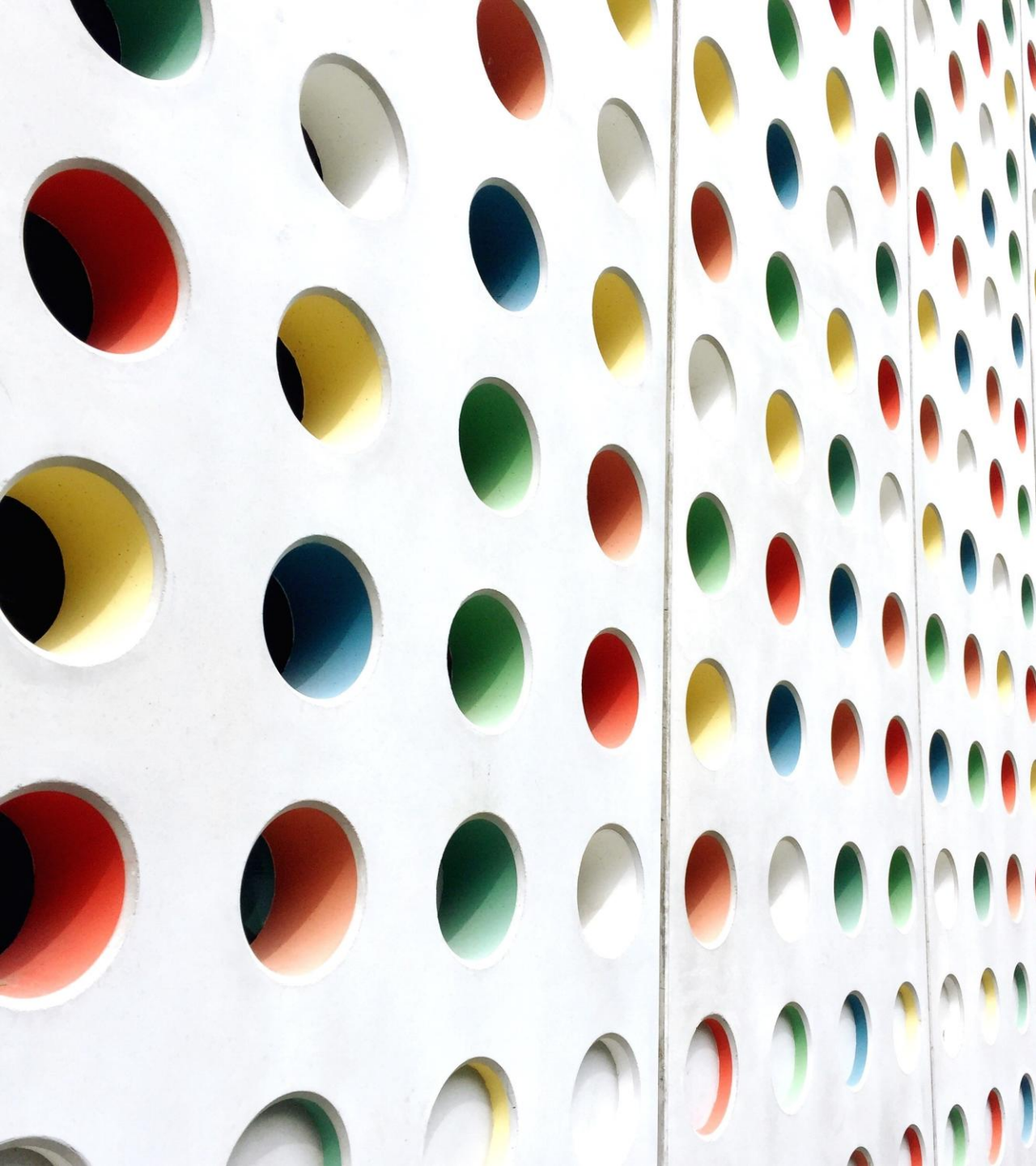




# Undergraduate Research Opportunities

FUTURE IGNITED 2026

STUDENT-FACULTY PROGRAMS OFFICE

[WWW.SFP.CALTECH.EDU](http://WWW.SFP.CALTECH.EDU)

[WWW.WAVE.CALTECH.EDU](http://WWW.WAVE.CALTECH.EDU)

# Introduction

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- ❑ What is Undergraduate Research?
- ❑ Overview of Caltech Programs
  - WAVE Fellows
  - Amgen Scholars
  - SURF (Summer Undergraduate Research Fellowships)
  - LIGO SURF
- ❑ The application process
- ❑ Research overview and identifying possible mentors
- ❑ Timeline
- ❑ Questions



# What Is Undergraduate Research?

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An inquiry or investigation conducted by an undergraduate student that makes an original intellectual or creative contribution to the discipline (Council on Undergraduate Research)

- Mentored
- Self-directed exploration
- Engaged, active, and experience-based learning
- Includes basic and applied research

# Why is it important?

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- Opportunity to put classroom learning into practice
- Academic and career path clarification
- Provides an academic community of faculty, scholars, grad students, and other undergraduates
- Improves your oral and writing communication skills
- Opportunity to make an original contribution to your field
- Impacts academic success—retention, engagement, persistence

(NSF; Boyer Commission, 1995; AACU, 2008)

# Real and Perceived Barriers

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- Inexperience
- I don't know where to start
- Not enough academic background
- Family or work responsibilities/Lack of time
- Financial constraints

(NSF; Boyer Commission, 1995; AACU, 2008)

# How to get Started?

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- Use your academic network: faculty, advisor, and peers!
- Search online at schools of interest
  - REUs
  - McNair program
- Search online for clearinghouse
- Pathways to Science
- Directly contact faculty of interest
- Be assertive, but not aggressive or entitled
- Do not spam faculty! Choose wisely and demonstrate an interest.
- YOU are here!

# WAVE Fellows: Our Mission

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The WAVE Fellows program supports this goal by increasing visibility and accessibility to Caltech's PhD programs to undergraduates in STEM fields who are seriously considering attending graduate school. WAVE Fellows is a 10-week undergraduate research program that provides robust programming in the areas of academic and professional development. The program is extended, but not limited to



# Eligibility

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Be sophomore junior, or non-graduating senior

Have a cumulative GPA of at least 3.4

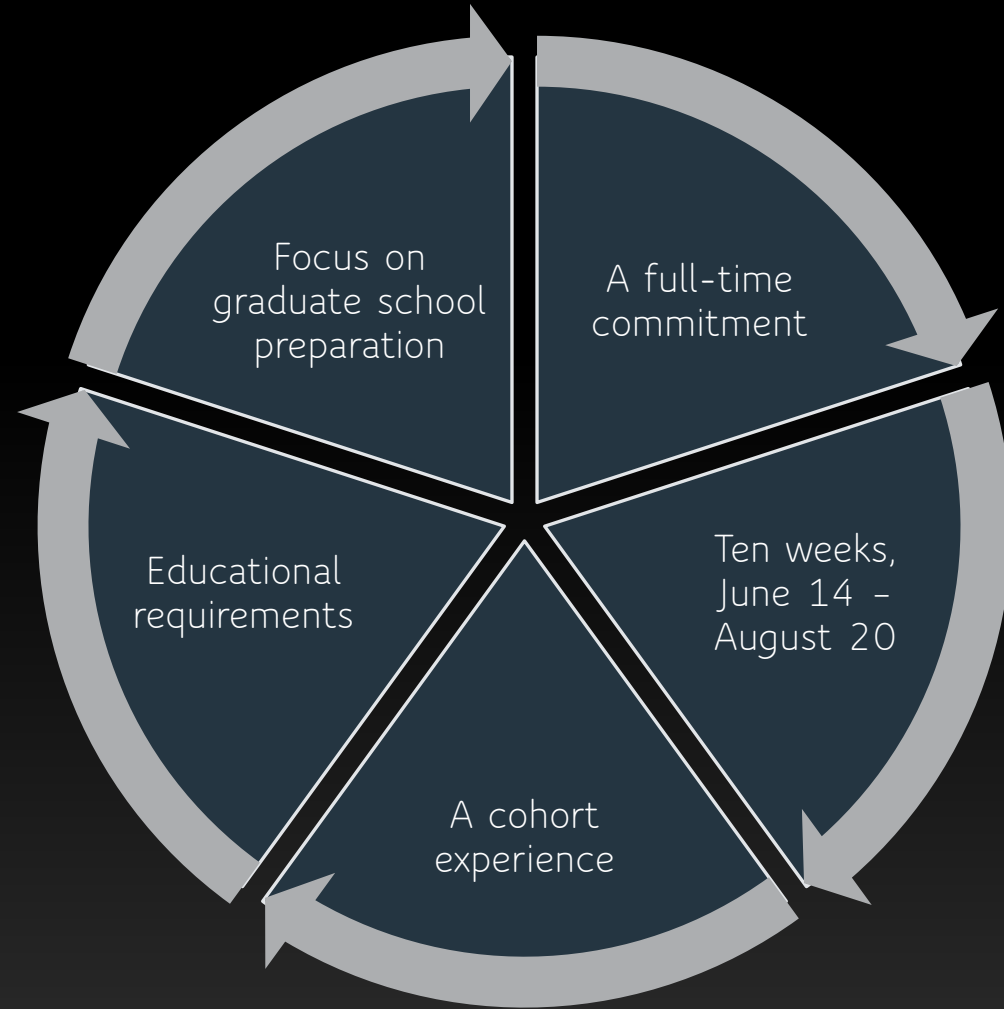
Have an interest in pursuing a PhD or joint MD/PhD

Must be U.S Citizen, permanent resident, or have DACA status

Most competitive applicants have prior research experience

# The summer program

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# The summer program

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Faculty research  
seminars

Student-faculty  
dinners

Writing and effective  
communication  
workshops

Weekly WAVE cohort  
lunches

The WAVE Council

Campus engagement  
with

- Center for Diversity and Inclusion
- Graduate Dean's Office

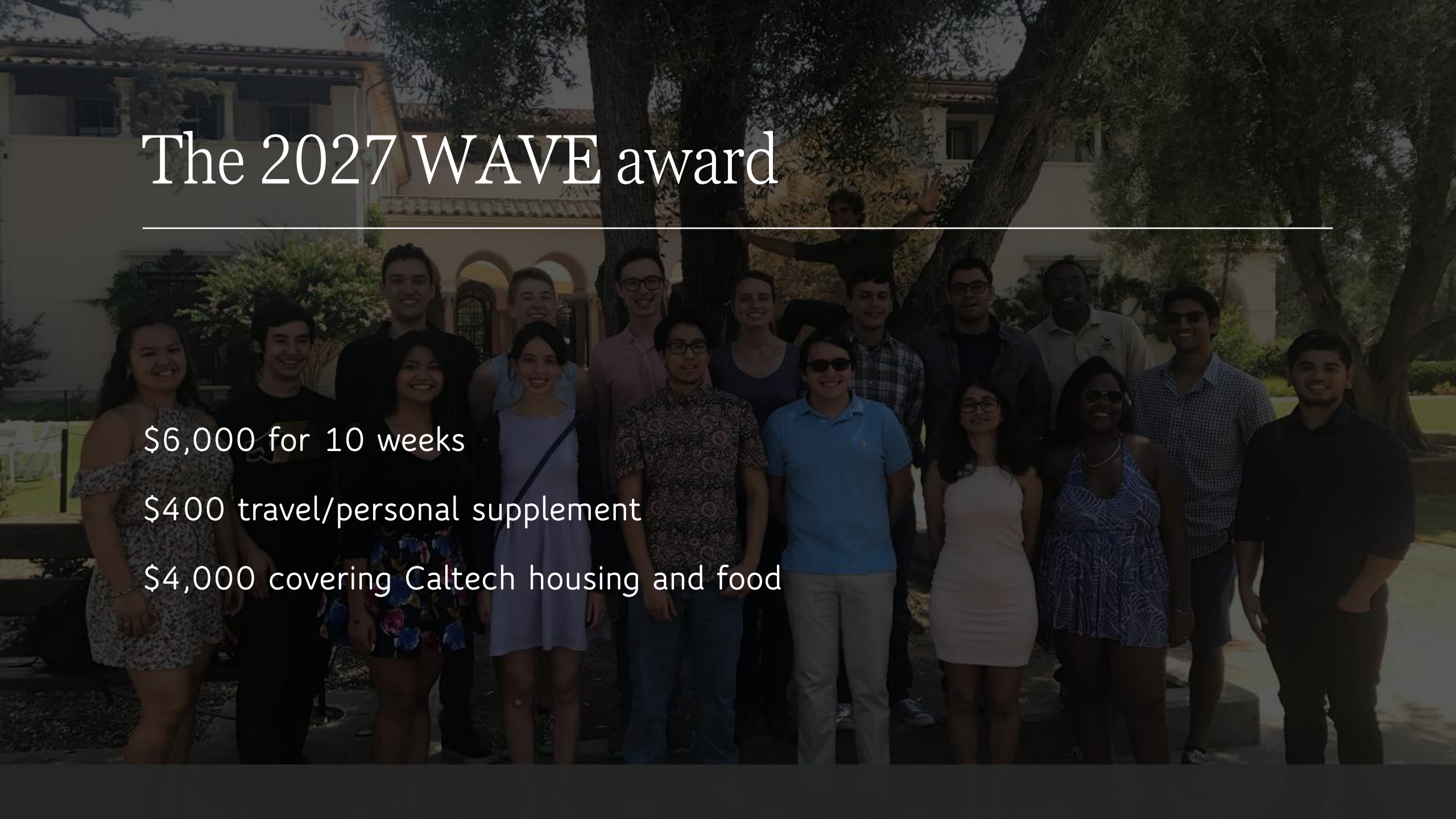
# The 2027 WAVE award

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\$6,000 for 10 weeks

\$400 travel/personal supplement

\$4,000 covering Caltech housing and food

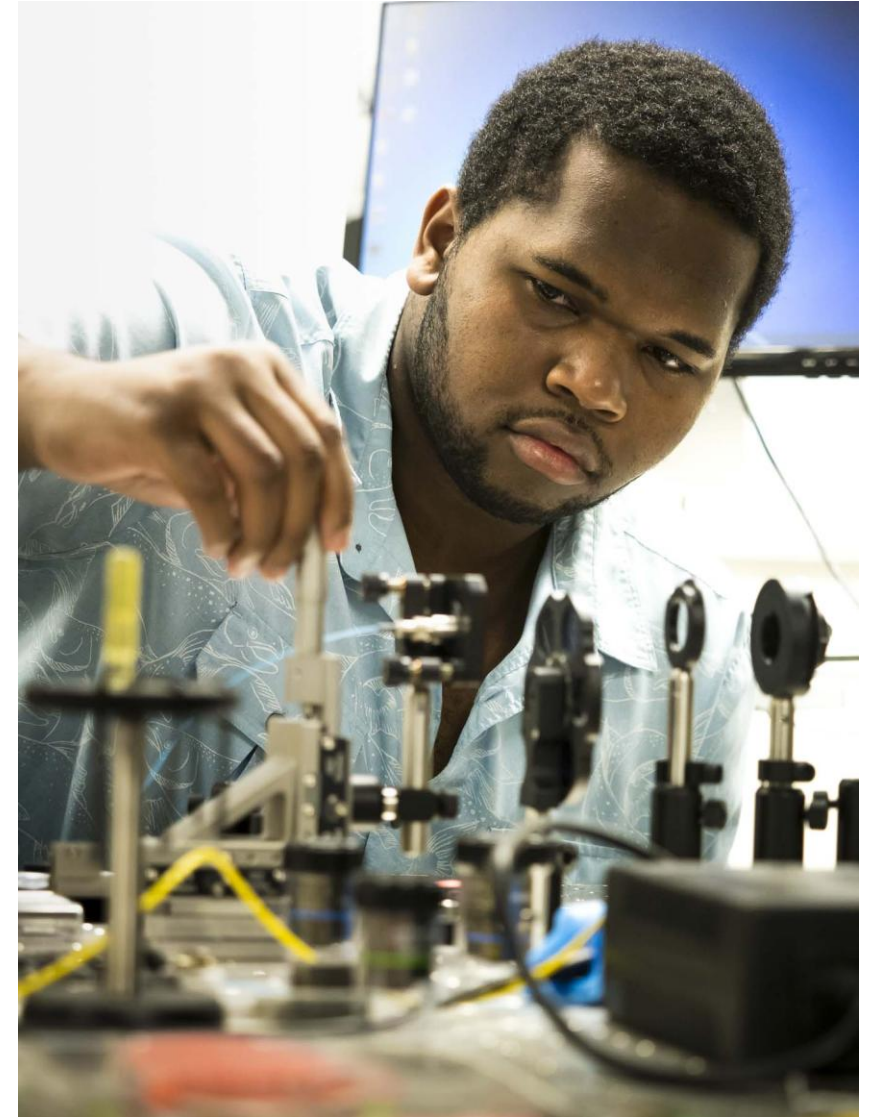


# The application process

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- General information about your academic background, goals, and experience
- Short essay questions on research interests and how you will benefit from being in the program
- Two letters of recommendation
- Unofficial transcript
- Names of three potential research mentors and why

[www.wave.caltech.edu](http://www.wave.caltech.edu)



# Amgen Scholars | Caltech

## RESEARCH EXPERIENCE

10-week, full-time research for visiting students in biology, chemistry, and biotechnology-related fields. Includes faculty mentoring, seminars, professional development, scientific communication, and a national Amgen Scholars conference.

## ELIGIBILITY • VISITING STUDENTS

- Sophomore (at least 4 quarters/3 semesters), junior, or non-graduating senior at a U.S./territory four-year institution
- GPA  $\geq 3.2/4.0$ ; U.S. citizen, permanent resident, or DACA; interested in a PhD or MD/PhD
- Previous Amgen Scholars are ineligible.

# SURF | Summer Undergraduate Research Fellowships

## RESEARCH EXPERIENCE

10-week, full-time, in-person mentored research. Students develop a project and proposal with a Caltech faculty mentor, conduct original research, write a technical paper, and present at SURF Seminar Day.

## ELIGIBILITY • VISITING STUDENTS

- Continuing undergraduate, eligible for fall registration
- GPA  $\geq 2.5/4.0$ ; completed second semester or third quarter
- No academic/disciplinary sanctions
- International students may apply for Caltech-campus projects, subject to authorization.

# LIGO SURF | Gravitational Wave Research

## RESEARCH EXPERIENCE

Intensive summer research with LIGO scientists and engineers in gravitational wave astronomy, detector development, optics, lasers, controls, modeling, and data analysis. Projects may be at Caltech or LIGO observatories. Apply directly through LIGO.

## ELIGIBILITY • WHO CAN APPLY

- Undergraduates from U.S. and international institutions are invited to apply.
- Specific project requirements and current eligibility criteria should be checked on the LIGO application site.

# Identifying potential mentors

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Divisions, research  
areas, and  
research centers  
and institutes

2026 Abstract  
Book

Attend Seminar  
Day  
October 17

# Timeline

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## Fall

- Define Research Interest and Seek/Identify Potential Mentors
- Cultivate your Academic Network
- Start Summer Research Applications

## Winter

- Applications are due – January 8 (WAVE and LIGO), February 1 (AMGEN), February 22 (SURF)
- Thank and/or remind your recommenders

## Spring

- Summer plans should be in place
- Share with your network/recommenders what you will be doing in the summer

# Next

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Questions



Follow up

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