UNIVERSITY OF CALIFORNIA

James B. Milliken
President

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DIVISION OF AGRICULTURE AND NATURAL RESOURCES

May 5, 2026

The Honorable John Laird
Chair, Joint Legislative Budget Committee
1020 N Street, Room 502
Sacramento, California 95814

Dear Senator Laird:

Pursuant to Item 6440-001-0001 of the 2010-11 Budget Act, Provision 7, enclosed is the University of California's report to the Legislature on California State Summer School for Mathematics and Science (COSMOS), 2021-2025.

If you have any questions regarding this report, Associate Vice President Cain Diaz would be pleased to speak with you. Cain can be reached by telephone at (510) 987-9350, or by e-mail at Cain.Diaz@ucop.edu.

Sincerely,

James B. Milliken
President

Enclosure

cc: Senate Budget and Fiscal Review
The Honorable Lena Gonzalez, Chair
Senate Budget and Fiscal Review Subcommittee #1
(Attn: Mr. Diego Lopez)
(Attn: Mr. Kirk Feely)
The Honorable David A. Alvarez, Chair
Assembly Budget Subcommittee #3
(Attn: Mr. Christian Griffith)
(Attn: Mr. Tobias Wolken)
Mr. Hans Hemann, Joint Legislative Budget Committee
Ms. Jessica Holmes, Department of Finance
Ms. Jessica Deitchman, Department of Finance
Ms. Gabriela Chavez, Department of Finance
Mr. Gabriel Petek, Legislative Analyst Office
Ms. Jennifer Pacella, Legislative Analyst Office
Ms. Florence Bouvet, Legislative Analyst's Office
Provost and Executive Vice President Katherine S. Newman
Executive Vice President and Chief Financial Officer Nathan Brostorm

Vice President and Vice Provost Yvette Gullatt
Associate Vice Provost Cynthia Davalos
Senior Vice President Meredith Turner
Associate Vice President Cain Diaz
Associate Vice President and Director Kathleen Fullerton

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University of California
Report on the California State Summer School for Mathematics and Science, 2021-2025
March 2026

Legislative Request

Item 6440-001-0001 of the 2010–11 Budget Act requires the University of California (UC) to provide a report to the Legislature on *COSMOS Program Outcomes and Effectiveness*. The Budget Act reads:

> "7. Of the funds appropriated in Schedule (1), $1,897,200 is for the California State Summer School for Mathematics and Science (COSMOS). The University of California shall report on the outcomes and effectiveness of COSMOS every five years, commencing April 1, 2011."

Section 8669.1 of the Education Code reads:

> "It is the intent of the Legislature that the University of California conduct an evaluation on the effectiveness of the California State Summer School for Mathematics and Science every two years from the effective date of the act that amends this section."

University of California Response

The California Legislature established the California State Summer School for Mathematics and Science (COSMOS) in 1998 (Assembly Bill 2536), with the goal of engaging highly talented and motivated students in an intensive program of study, experimentation, and activities to further their interests and skills in science, technology, engineering, and mathematics. The Request for Proposal to host COSMOS was awarded to the University of California, and the program launched at Irvine and Santa Cruz in 2000. Due to high demand, UC has added additional campuses over time: Davis in 2001, San Diego in 2004, and Los Angeles in 2024, with Merced planning to launch in 2026.

The long-term goals of the COSMOS program require a multiyear examination of how COSMOS participants fare. This COSMOS report to the Legislature covers summer 2021 through summer 2025 and provides information on the program and participants, program funding and costs, and college destinations of COSMOS alumni.

Executive Summary

- From summer 2021 through summer 2025, 5,385 students participated in COSMOS. Over time, enrollment has risen steadily, from 940 participants in summer 2021 to 1,275 participants in summer 2025, which is an increase of 36 percent.
- The demand for admission to COSMOS is strong and has been since its inception. For example, of 4,512 completed applications for summer 2021, 1,164 (26 percent) were admitted, and 340 (8 percent) remained on the waitlist.

- Using higher education enrollment data from the National Student Clearinghouse, UC has been able to track 3,413 of 6,682 (51 percent) alumni from summer 2017 to summer 2025 as having enrolled at a college or university after completing high school. This reflects confirmed enrollment outcomes for those participants for whom data are available.
- Of the 3,413 COSMOS alumni enrolled at colleges and universities, 2,205 (65 percent) attended four-year institutions, with 1,154 (34 percent) at UC campuses, 958 (28 percent) at private or out-of-state universities, and 93 (3 percent) at California State University campuses. Another 1,166 (34 percent) enrolled at California Community Colleges (two-year programs), and the remaining 42 (1 percent) enrolled at private or out-of-state two-year institutions.
- Among the 1,154 COSMOS alumni who enrolled at UC campuses, 35 percent were at UC Berkeley, 22 percent at UC Los Angeles, 12 percent at UC San Diego, 8 percent at UC Davis, 11 percent at UC Santa Barbara, 6 percent at UC Irvine, 4 percent at UC Santa Cruz, and 1 percent each at UC Riverside and UC Merced.
- Also, of the 1,154 COSMOS alumni enrolled at UC campuses, 906 (79 percent) entered with declared majors. Of these 906 students, 819 (90 percent) have declared STEM (science, technology, engineering, and mathematics) majors.
- After UC, the top ten four-year universities at which COSMOS alumni most often enrolled are University of Southern California, Carnegie Mellon University, Stanford University, University of Pennsylvania, Massachusetts Institute of Technology, Cornell University, University of Illinois at Urbana-Champaign, University of Chicago, California Polytechnic State University, and Purdue University.

Mission and Goals

The mission of the COSMOS program is to provide outstanding high school students in STEM disciplines with opportunities to delve deeply into their subjects and prepare for careers in the STEM fields.

In 2002, the University of California convened an expert advisory board to design the COSMOS program. The board set out the following goals for the COSMOS program:

- To engage talented students in high-level teaching and learning
- To establish a community of scholars that fosters analytical thinking and experimentation
- To connect students to institutions of higher learning and research facilities
- To develop models for excellence in science and mathematics education
- To ensure that the COSMOS student body reflects California's geographic, economic, and cultural diversity

Program Description

The COSMOS summer sessions last four weeks and straddle State fiscal years. For funding purposes, each summer session is aligned with the earlier fiscal year; for example, the summer 2021 session is funded from FY 2020–21 dollars.

Over a four-week summer session, COSMOS courses or "clusters" address advanced topics in the STEM fields that go well beyond the typical high school curriculum. COSMOS clusters typically consist of two science and/or mathematics courses and a science communication course. (Science communication courses teach students how to present science projects to diverse audiences.) The clusters vary by campus and by session but have included such subjects as astronomy, aerospace/mechanical engineering, biomedical sciences, computer science, ecology, marine science, robotics, game theory, and more. (Please see Appendix A for a list of COSMOS clusters by campus planned for summer 2026.)

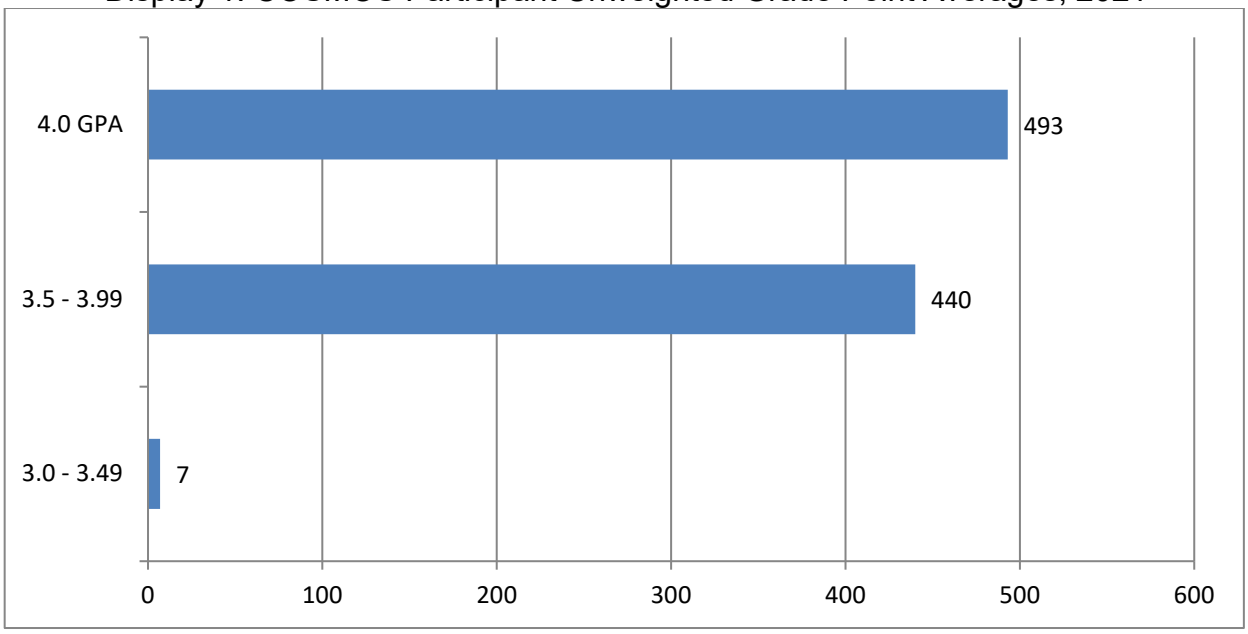
The cluster courses are intensive, emphasizing current research underway at the University of California. Distinguished faculty and researchers teach the COSMOS courses and supervise the students. Typically, 22 to 25 students participate in a given COSMOS cluster, and the ratio of students to faculty is usually five to one. COSMOS aims to keep the faculty-student ratio low for each cluster so that students benefit from one-on-one faculty mentorship. On weekdays, students typically work from 9 a.m. to 4 p.m. in university classrooms (attending lectures and discussions) and laboratories, augmented with field trips and/or fieldwork.

Students are required to live on campus for the duration of the program, which gives them many opportunities to interact with a community of student scholars who support and learn from one another and who share the same interests in mathematics and science. Evening and weekend activities, including recreational activities and additional field trips, are planned and supervised. A statewide advisory board, composed of scientific and technological leaders in higher education and industry, guides the COSMOS program. Representatives include leaders from the philanthropic, industrial, business, legislative, and nonprofit community. (Please see Appendix B for a list of current advisory board members.)

Caliber and Number of Student Participants

Caliber of Participants — Each campus can accommodate an average of just over 250 participants per summer session and thus selection is competitive. For example, of 4,512 completed applications for summer 2021, 1,164 (26 percent) were admitted, and 340 (8 percent) remained on the waitlist. Applicants must demonstrate academic excellence. For example, in summer 2021, nearly all COSMOS attendees had an unweighted GPA of at least 3.5, with an overall average of 3.94. (Display 1)

Display 1: COSMOS Participant Unweighted Grade Point Averages, 2021



Source: COSMOS application database

Number of Participants — Display 2 indicates a steady rise in the number of students participating in COSMOS from 940 participants in summer 2021 to 1,275 participants for summer 2025, an increase of 36 percent.

Display 2: COSMOS Participants by Year and Campus, 2021–2025

UC Campus	**2021**	**2022**	**2023**	**2024**	**2025**	**Total 2021–2025**
Davis	209	234	253	205	279	1,180
Irvine	194	199	203	227	229	1,052
Los Angeles	-	-	-	131	209	340
San Diego	253	268	264	302	237	1,324
Santa Cruz	284	294	293	297	321	1,489
Total	940	995	1,013	1,162	1,275	5,385

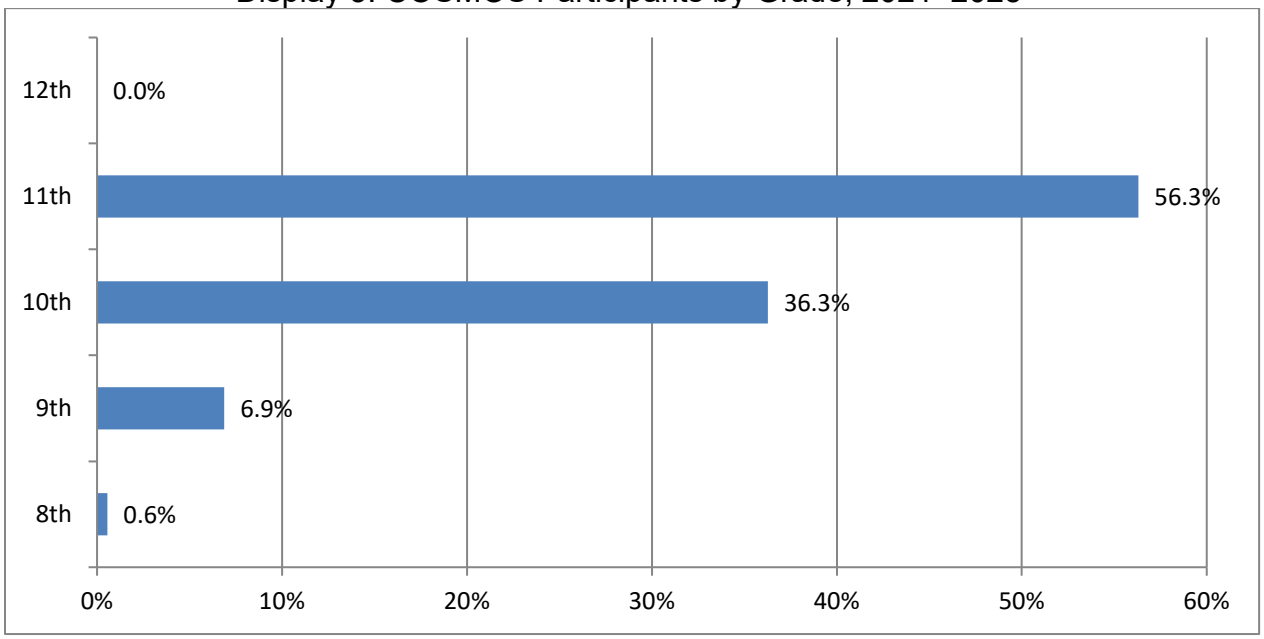
Source: COSMOS application database

Demographics of Student Participants

Grade Level of Participants — As mandated by the authorizing legislation, COSMOS participants may apply as early as the eighth grade to attend a summer session before entering high school, and participants may also apply immediately after graduating from high school, but both are rare; the vast majority of applicants are in the process of completing ninth, tenth, or eleventh grade.

Display 3 shows the percentages of summer 2021 to summer 2025 COSMOS participants by the grade level they most recently finished before the summer of their participation. Less than 1 percent applied as eighth graders and participated in a COSMOS session before beginning their freshman year of high school, while most students participated in the summer before their junior (36 percent) or senior year (56 percent).

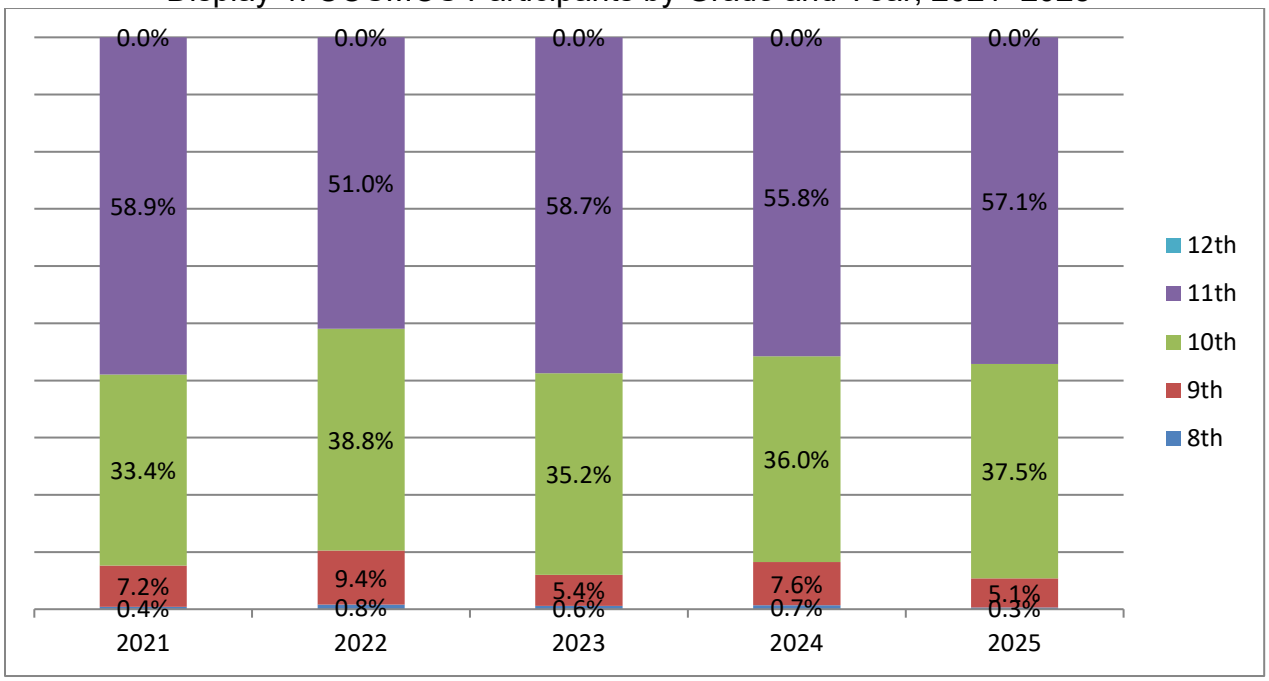
Display 3: COSMOS Participants by Grade, 2021–2025



Source: COSMOS application database

Over time, participation by grade level has remained relatively consistent, with the majority of students attending the summer after their 11th-grade year. As indicated in Display 4, slight fluctuations have occurred across all grade levels.

Display 4: COSMOS Participants by Grade and Year, 2021–2025



Source: COSMOS application database

Gender and Ethnicity of Participants — COSMOS students have historically remained evenly split between male and female participants. For example, from summer 2021 to summer 2025, male participants comprise 50.6 percent and female participants comprise 49.1 percent. Students were also given the option for Other/Disclaimer or Decline to State which makes up 0.3 percent of participants/admits from 2021 to 2025.

As indicated in Display 5, participant ethnicities did not vary significantly between 2021 and 2025. All students were asked separately if they identified as Hispanic or Latino. This resulted in a small increase between 2021 to 2025, from 6.8 percent to 7.0 percent, with 2024 seeing a top percentage of 11.9 percent.

Display 5: COSMOS Applicant and Participant Ethnicities by Year, 2021–2025[1]

Ethnicity	Applied in 2021	Attended in 2021	Applied in 2022	Attended in 2022	Applied in 2023	Attended in 2023	Applied in 2024	Admitted in 2024	Applied in 2025	Admitted in 2025
Asian/Asian American	3,619 80.2%	692 73.6%	4,601 80.9%	712 71.6%	5,692 78.4%	710 70.1%	6,676 76.6%	789 67.9%	6,667 77.9%	936 73.4%
White	553 12.3%	185 19.7%	756 13.3%	228 22.9%	1,029 14.2%	237 23.4%	1,328 15.2%	277 23.8%	1,151 13.5%	249 19.5%
Hispanic or Latino	188 4.2%	64 6.8%	264 4.6%	89 8.9%	449 6.2%	104 10.3%	558 6.4%	138 11.9%	405 4.7%	89 7.0%
African American/ Black	42 0.9%	13 1.4%	47 0.8%	14 1.4%	73 1.0%	10 1.0%	112 1.3%	12 1.0%	93 1.1%	11 0.9%
Native American/ Alaskan Native	15 0.3%	4 0.4%	29 0.5%	4 0.4%	62 0.9%	14 1.4%	93 1.1%	11 0.9%	59 0.7%	9 0.7%
Native Hawaiian/ Other Pacific Islander	35 0.8%	8 0.9%	47 0.8%	8 0.8%	82 1.1%	13 1.3%	91 1.0%	12 1.0%	80 0.9%	15 1.2%
Decline to State	424 9.4%	87 9.3%	500 8.8%	93 9.3%	719 9.9%	111 11.0%	966 11.1%	150 12.9%	967 11.3%	146 11.5%

Source: COSMOS application database

[1] Raw data is based on each student who selected the ethnicity; the percentage is that number relative to the total number of attendees from that year. Student who selected more than one ethnicity are represented in each category they selected, leading to totals greater than 100 percent.

The student composition in COSMOS continues to show imbalances in the attendance of different ethnic groups. The balance between genders is slightly in favor of males. In consultation with equity, diversity, and inclusion specialists at the Office of the President and UC Davis, COSMOS leadership is conducting an analysis of the selection process to determine whether adverse biases are having an impact on the program's faculty-led admissions decisions. Early findings indicate that identifying more prospective students from underrepresented groups and encouraging them to apply can positively affect admission and enrollment of more participants from these groups. The program is also revamping its outreach strategies to better reach all qualified students in the State by building stronger relationships with schools and K–12 STEM programs with significant populations of students from underrepresented groups. The program is further broadening its reach by piloting additional participating UC campuses (UCLA, starting in 2024, and UC Merced, starting in 2026). This will create both more regional appeal as well as opening the possibility for serving more students.

Geographic Diversity of Participants — Display 6 shows the number of participants from California by county, where each county has been placed into one of the eleven regions defined by the California County Superintendents Educational Services Association (CCSESA), http://ccsesa.org/. (CCSESA regions comprise multiple counties and provide an organizational mechanism for county superintendents to work together to implement statewide educational programs and policies.)

COSMOS participants have come from every CCSESA region. For summer 2021 to summer 2025, 5,368[2] COSMOS participants resided in 43 of California's 58 counties, with the largest share (1,493; 28 percent) coming from Region 5 (Monterey, San Benito, Santa Clara, and Santa Cruz Counties).

Display 6: COSMOS Participants by County, 2021–2025

Region	Counties Included	Total COSMOS Participants
1	Del Norte, 1, 0.02% Humboldt, 2, 0.04% Mendocino, 2, 0.04% Sonoma, 27, 0.50%	32 0.60%
2	Butte, 3, 0.06% Shasta, 8,0.15%	11 0.20%
3	Alpine, 1, 0.02% Colusa, 1, 0.02% El Dorado, 15, 0.28% Nevada, 3, 0.06% Placer, 36, 0.67% Sacramento, 115, 2.14% Sutter, 2, 0.04%	234 4.36%

[2] Prior to summer 2022, a limited number of out-of-state or international students could be admitted. In 2021, 17 out-of-state/international students attended the program.

	Yolo, 59, 1.10% Yuba, 2, 0.04%	
4	Alameda, 645, 12.02% Contra Costa, 282, 5.25% Marin, 34, 0.63% Napa, 5, 0.09% San Francisco, 110, 2.05% San Mateo, 271, 5.05% Solano, 6, 0.11%	1,353 25.20%
5	Monterey, 17, 0.32% Santa Clara, 1,435, 26.73% Santa Cruz, 41, 0.76%	1,493 27.81%
6	San Joaquin, 43, 0.80% Stanislaus, 13, 0.24%	56 1.04%
7	Fresno, 27, 0.50% Kings, 1, 0.02% Madera, 5, 0.09% Merced, 9, 0.17% Tulare, 2, 0.04%	44 0.82%
8	Kern, 62, 1.15% San Luis Obispo, 6, 0.11% Santa Barbara, 30, 0.56% Ventura, 89, 1.66%	187 3.7%
9	Imperial, 24, 0.45% Orange, 602, 11.21% San Diego, 518, 9.65%	1,144 21.31%
10	Mono, 1, 0.02% Riverside, 49, 0.91% San Bernardino, 74, 1.38%	124 2.31%
11	Los Angeles, 690, 12.85%	690 12.85%
Total	43 Counties	5,368 100%

Source: COSMOS application database

Program Funding, Costs, and Financial Aid

COSMOS Funding Sources — In FY 2024–25, UC received $1.652 million in State funds for the summer 2025 COSMOS program, and since 2016–17 the amount of State appropriation has remained at approximately $415,000 per campus (UC Davis, UC Irvine, UC San Diego, UC Santa Cruz) each year. The 2011–12 Budget Act permitted a reduction of up to 21.3 percent in State General Funds for COSMOS. The California Education Code specifies that the State fund at least 50 percent but not more than 75 percent of the program's actual costs.

Additional funding for COSMOS comes from participants who are paying the full tuition as well as from private philanthropic support. Over the past five fiscal years, UC has

raised the following amounts of private funds to support COSMOS: $184,302 in FY21; $470,149 in FY22; $737,271 in FY23; $600,964 in FY24; and $1,073,268 in FY25.

Costs Per Student — The average cost per student to the University to host a student for a four-week COSMOS summer session, including the costs of providing room and board and the costs of instruction, is $6,987 (for 2025).

Program Affordability — Eligible in-state residents paid a maximum tuition of $5,256 for the four-week session in summer 2025. (The California Education Code states that tuition for COSMOS may increase by no more than 5 percent each year for California residents, which has happened every year.) This sum covered all student costs with the exception of their travel to and from the campus they were attending. Depending on family income, varying financial assistance was available for families making up to, and including, $160,000. For example, a family of four with a yearly income of $43,000 would likely have qualified for a full scholarship ($5,256), and a family of four with a yearly income of $152,000 would likely have qualified for a 20 percent scholarship ($1,051.20).

Scholarships are provided as funds are available, and this accounts for the fluctuation in the number of awards provided to students from 2021 through 2025. In summer 2025, 41 of 71 financial aid applicants (58.6 percent) were provided with the maximum financial aid, for a total of $215,496, with all awards totaling $299,592. Display 7 shows the 2021–2025 COSMOS participants and the number and percentage awarded full or partial financial aid.

Display 7: COSMOS Total Participants and Participants Awarded Financial Aid

	2021	**2022**	**2023**	**2024**	**2025**
Total Participants	940	995	1013	1162	1275
Total Participants Awarded Financial Aid	83	93	136	142	70
Percent Receiving Financial Aid	8.8%	9.3%	13.4%	12.2%	5.5%

Source: COSMOS application database

COSMOS Alumni's Academic Development — Due to data availability limitations, outcomes are reported for the subset of participants for whom enrollment data could be confirmed. UC successfully tracked college or university enrollment for 51 percent of all COSMOS participants from summer 2017 to 2025 by using the National Student Clearinghouse database, which provides college/university enrollment information for most higher-education institutions within the United States, including UC campuses (Display 8). UC also utilizes the UC systemwide Data Warehouse to track the majors of

COSMOS students who enroll at UC's undergraduate campuses.

- Using higher education enrollment data from the National Student Clearinghouse, UC has been able to track 3,413 of 6,682 alumni (51 percent) from summer 2017 to summer 2025 as having enrolled at a college or university after completing high school.
- Of the 3,413 COSMOS alumni enrolled at colleges and universities, 2,205 (65 percent) attended four-year institutions, with 1,154 (34 percent) at UC campuses, 958 (28 percent) at private or out-of-state universities, and 93 (3 percent) at California State University campuses. Another 1,166 (34 percent) enrolled at California Community Colleges (two-year programs), and the remaining 42 (1 percent) enrolled at private or out-of-state two-year institutions.
- Among the 1,154 COSMOS alumni who enrolled at UC campuses, 35 percent were at UC Berkeley, 22 percent at UC Los Angeles, 12 percent at UC San Diego, 8 percent at UC Davis, 11 percent at UC Santa Barbara, 6 percent at UC Irvine, 4 percent at UC Santa Cruz, and 1 percent each at UC Riverside and UC Merced.
- Also, of the 1,154 COSMOS alumni enrolled at UC campuses, 906 (79 percent) entered with declared majors. Of these 906 students, 819 (90 percent) have declared STEM (science, technology, engineering, and mathematics) majors.
- After UC, the top ten four-year universities at which COSMOS alumni most often enrolled are University of Southern California (46 alumni), Carnegie Mellon University (46 alumni), Stanford University (43 alumni), University of Pennsylvania (39 alumni), Massachusetts Institute of Technology (39 alumni), Cornell University (38 alumni), University of Illinois at Urbana-Champaign (38 alumni), University of Chicago (35 alumni), California Polytechnic State University (30 alumni), and Purdue University (28 alumni).
- In addition, alumni have enrolled at Brown University (24 alumni), Columbia University (21 alumni), Dartmouth College (8 alumni), Harvard University (13 alumni), Princeton University (16 alumni), and Yale University (16 alumni), among others.

Display 8: COSMOS Alumni Post-Secondary Destinations by Ethnicity

	CCC	**CSU**	**Private/ Out of State**	**UC**	**Total**
Asian/Pacific Islander	774	47	627	760	2208
White	162	18	168	157	505
Chicanx/Latinx	79	17	47	76	219
Two Or More Races	58	4	49	59	170

Other/Unknown	48	<5	56	54	159
Decline to State	39	5	44	40	128
African American/Black	6		9	8	23
Native American/Alaskan Native		<5			<5
Total	**1,166**	**93**	**1,000**	**1,154**	**3,413**

Sources: National Student Clearinghouse, UC Data Warehouse

Conclusion

The California State Summer School for Mathematics and Science (COSMOS) continues to provide many of the state's academically brightest students with an opportunity for a rigorous math and science summer learning experience. Each summer this highly competitive program, with an approximately 16 percent acceptance rate, provides challenging hands-on educational experiences to over 1,000 students. Program participants reside in 43 of California's 58 counties.

Among COSMOS participants for whom data are available, a strong majority enrolled in post-secondary education. A significant percentage (34 percent) attend a UC campus, and more than 28 percent enroll at a private or out-of-state university. In recent years, COSMOS alumni have enrolled in a range of highly selective institutions, including multiple Ivy League universities.

COSMOS continues to provide high school students interested in STEM disciplines with opportunities to delve deeply into these subjects and to prepare for careers in STEM fields. COSMOS continues to meet its goals to provide talented students with enriching experiences that foster scholarship and college aspirations leading to eventual professions in science and mathematics fields. While program participants reflect California's geographic and economic diversity, the program continues to seek more ethnic diversity to reflect California high school graduates.

Appendix A: Summer 2026 COSMOS Cluster Offerings

UC DAVIS

1. Quantum Mechanics and Applications to Nanotechnology
2. Physics & Engineering: From scientific method to technological applications
3. Introduction to Engineering Mechanics
4. Introduction to Astrophysics
5. Computers in Biophysics & Robotics
6. Mathematics
7. Introduction to Plant Microbiology
8. From Semiconductors to Code: Exploring Analog and Digital Electronics
9. Mathematical Modeling of Biological Systems (Not Offered in 2026)
10. Sustainable Transportation
11. Beyond the Numbers: Exploring Data Science and Big Data Innovations
12. Introduction to Machine Learning
13. Future Foods: Sustainable Aquatic Food Production
14. Future Mobility on Ground and Air: From Automobiles to Airplanes and Drones

UC IRVINE

1. Exploring the Application of Data Science in the Biomedical Sciences
2. Decoding the Universe: Physics, Big Data, and Computation
3. Tissue & Tumor Biology & Mathematical /Computational Modeling
4. Explorations of the Subatomic World and the Expanding Universe
5. Sustainable Aviation Systems
6. Genes, Genomes, and Skeletal Muscle Dystrophies
7. Bioengineering Your Brain: Controlling the World with Your Brainwaves
8. Bionengineering and Characterizing Human Skin Organoids (Not Offered in 2026)
9. Stressed Out Bugs: How Bacteria Respond to Changing Environments

UC LOS ANGELES

1. Brain-Inspired Computing: Learning in Biological, Artificial Neural Networks
2. Ecosystem Responses to Climate from Plants to Planet: Analyzing & Presenting Data from Lab and Space Sensors
3. Exploring the Evolution of Animal Form; From Fossils to Embryos (Not Offered in 2026)

4 HIGH SUCCESS: Hydrogen is Green Headway to SUstainability, Carbon Capture, Energy-transition & SuStainizability®

5 From Self-balancing Mini Robot Cars to Rockets: Exploring Mechanical & Aerospace Engineering

6 From Medicine to Hollywood: Artificial Intelligence for Speech & Imagery

7 Revealing Molecular Structure

8 Bit by Bit: Mathematics & Technologies of the Information Age

9 Modern Computational Biology: From DNA to Protein Structure and Function

10 Smarter World: Where Data Science Powers IoT

UC MERCED

1 Soft Matter at UC Merced: Complex Fluids and Flows

2 Nanomaterials for Accelerating Chemical Reactions

3 Exploring Materials

4 AI at Scale

5 Glowing Partnerships: Exploring Bacterial-Animal Symbiosis Through Bioluminescence

6 Digital Twins: Making Things Smarter

7 Quantum Materials & Light: Illuminating the Weird World of 0D and 2D Materials

UC SAN DIEGO

1 Music and Math: The Art of Digital Audio

2 Engineering Design and Control of Kinetic Sculptures

3 Climate Change (Not Offered in 2026)

4 Cool Tech: The Science of Heating and Cooling

5 PhotonQuest: From Everyday Devices to Quantum Frontiers

6 Biodiesel from Renewable Sources

7 Machine Learning: Can We Teach a Computer to Think?

8 Tissue Engineering and Regenerative Medicine

9 Music and Technology: Microphones and Microcontrollers

10 Robot Inventors

UC SANTA CRUZ

1 Number Theory and Discrete Math

2 Nanochemistry and Nanotechnology

3 Making an Animal: Development and Bioinformatics

4 Quantum Information Science and Engineering (QISE)

5 Video Game Design: From Concept to Code

6 Introduction to Smart and Sustainable Power

7 Shining a Light on the Future: The Photonic Revolution in Healthcare, Energy, and Information Technologies

8 Practical Applications of Chemical Principles

9 Molecular Biology Investigations

10 Semiconductor Materials and Device Engineering

11 Brain-Inspired Machine Learning

12 Exploring the Structure of Quantum Materials by Neutron Scattering and X-ray Diffraction

13 Crystalline Quantum Materials (QMC): Intersections Between Physics, Chemistry, and Material Science

Appendix B: COSMOS Advisory Board Members

Alan R. Bishop
Chief Scientist, Los Alamos National Laboratory
Former Principal Associate Director - Science, Technology, and Engineering, Los Alamos National Laboratory
Fellow, American Physical Society, Institute of Physics, American Association for the Advancement of Science
Recipient, E.O. Lawrence Award, Department of Energy
Humboldt Senior Fellow, Los Alamos Fellow

Kim Chrissan
VP, Government Affairs Operations, Nokia

Irene Helley
VP, Applied AI, Lockheed Martin

Chris Kahn
Founder and Owner, Chris Kahn Consulting, Sacramento
Secretary, Board of Trustees, The California Museum

Brian Lee
Partner and Senior Advisor, BRV Capital Management

Margo Leonetti O'Connell
The Leonetti/O'Connell Family Foundation
Board of Trustees, California Science Center Foundation

Adriane McFetridge
Co-Founder, CicakTech

Sanjay Palsamudram
Co-Founder, SV3 Global Ventures

DeWayne Quinn (Chair)
Director, Global Information Systems, Apple Inc.
Founder, The Quinn Foundation

Tarun Soni
Northrop Grumman

Gayle Edlund Wilson, COSMOS Advisory Board Chair Emerita
Former California First Lady 1991-1999
Board of Directors, Gilead Science
Board of Trustees, California Institute of Technology
Board of Directors, Science for Society and the Public (SSP)

Appendix C: COSMOS Application

Parent/Guardian information

Please provide your Parent/Guardian information below. At least one Parent/Guardian must be associated with your application. Once these details are provided, they cannot be edited. The Parent/Guardian email(s) must be different than your email, and will only be sent after this checklist is completed.

COSMOS will notify the primary (Parent/Guardian #1) with details about application fees, waivers and other important information that must be addressed to complete your application. Should your Parent/Guardian not see or receive their email, please have them check their spam/junk or other folders where auto emails could be delivered.

Parent/Guardian #1

Prefix *

Select Prefix

First Name *

Last Name *

Relationship to Student *

Parent/Guardian Phone Number

☐ International Number?

Phone Number *

Additional Email

Parent/Guardian #2

Prefix

Select Prefix

First Name

Last Name

Relationship to Student

Parent/Guardian Phone Number

☐ International Number?

Phone Number

Email

Verify Email

Additional Email

Additional Email

Next | Save For Later

Cancel

References

Please provide at least one teacher recommendation. Only one recommendation letter is required though we strongly suggest supplying an additional teacher to ensure at least one recommendation is received by the deadline. One must be a STEM teacher and both should be someone who can speak to your academic and leadership qualities.

Your references will be contacted by email and will be requested to complete a reference form online. They will be contacted upon selecting "Next" at the bottom of the page. You can track the status of your request in this application portal. Reminders will also be sent to the references, but students are responsible for making certain the reference is completed by the application deadline. Teachers may need to check their spam folders depending on school email policy. Applications will not be reviewed if the reference is not completed. Teachers may submit technical help requests at https://cosmos-ucop.ucdavis.edu/reference/submit-support-request.

If you choose not to waive your right to the recommendation, please note the prospective reference will be alerted to this preference.

Reference #1

First Name *

Last Name *

Position Title *

Organization *

Email *

☐ This reference is from the school I currently attend

Reference #2

First Name

Last Name

Position Title

Organization

Email

☐ This reference is from the school I currently attend

Students have a right to inspect and review their education records, except where the right of access to certain records has been waived.

Please check one of the following options: *

- ○ I waive my right to access the contents of these recommendations.
- ○ I do not waive my right to access the contents of these recommendations. I understand my references will be informed of this and may decline if they so choose.

Click 'Next' to notify your References via system automated email.

Next **Save For Later**

Cancel

School Information

Please enter your school information below. **If you cannot find your school, please scroll to the bottom of the dropdown and select "Other". You may then enter your school in the provided field.**

School Name *

Select School

Can't find your school?

School Address

School City

School County

CDS Code (*County District School identifier*)

CASSID

Current Grade Level *

Unweighted GPA *

If you have questions about your GPA, please contact your school.

Weighted GPA *

If you have questions about your GPA, please contact your school.

GPAs will be verified by transcript. Falsifying this information may result in an offer being rescinded.

Anticipated Graduation Year *

Next

Save For Later

Cancel

Program Preferences

Please select your program preferences below. You must choose the campus you are applying to first, and the available clusters will be displayed. Some clusters are "first choice" only, and others have prerequisites for eligibility. Please be sure to familiarize yourself with these details before making your selections.

Please Select Your Campus *

Select Campus

First Choice Cluster *

Select Cluster

Second Choice Cluster

Select Cluster

Why did you select your first choice cluster?(200 word limit) *

Max: **200** words | Words count: **0** word(s)

☐ I have reviewed the perquisites necessary for my selected cluster(s), and certify that I meet those requirements. *

Next **Save For Later**

Cancel

Transcripts

Please upload your unofficial high school transcript below in PDF format. If you are an 8th grade student, please provide your 7th grade transcript as well. Likewise, if you are an 9th grade student, please provide your 8th grade transcript as well. Transcripts can be updated until the application is submitted.

High School Transcript *

If you have questions about your transcript, please contact your school.

SELECT FILE

8th / 7th Grade Transcript

If you have questions about your transcript, please contact your school.

SELECT FILE

Other

SELECT FILE

☐ Please note: your offer may be rescinded if transcript information does not match the Official Transcript received.*

Next Save For Later

Cancel

Activities

Please note any activities that highlight your academic capabilities or other qualities that speak to your fitness for the COSMOS program. These should emphasize your scholastic record, particularly in STEM-related activities. There is a limit of 2 activities, but no obligation to submit that many.

Do you wish to enter any activities? *

- (•) Yes
- ( ) No

Activity #1

Activity Name *

Brief Description (50 word limit) *

Max: **50** words | Words count: **0** word(s)

Hours per week *

Weeks per year *

Years *

Add More

Next **Save For Later**

Cancel

Statement of Interest

Beyond what has already been shared in your application, what do you believe makes you stand out as a strong candidate for admissions to COSMOS? If there's anything you want us to know about you, but didn't find a question or place in the application to tell us, now's your chance. What have you not shared with us that will highlight a skill, talent, challenge or opportunity that you think will help us know you better?

Statement of Interest (300 word limit) *

Privacy Policy

Privacy Policy Max: **300** words | Words count: **0** word(s)

Next **Save For Later**

Cancel