

WALTER SCOTT, JR. GIFT

ElCentro

2021



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WALTER SCOTT, JR. COLLEGE OF ENGINEERING colorado state university

WALTER SCOTT, JR. UNDERGRADUATE SCHOLARS

2021 marks the first year of graduating Scott Scholars and the fifth incoming class of Scott Scholars. Students in the incoming cohort are 20 of the most outstanding students from across the country. They will help the college continue to build a reputation of excellence in our engineering programs and benefit from a world-class education.



= 2021 SCHOLARS

15 in state:

Alamosa Aurora (3) Colorado Springs Englewood Fort Collins Highlands Ranch La Jara Littleton Loveland New Castle Parker Pueblo Thornton

5 out of state:

Maryland (Clarksburg) Arizona (Scottsdale) Texas (Boerne) New Mexico (Albuquerque) Utah (Wellsville)

★ = second-, third-, fourth-, fifth-year scholars and alumni



"This scholarship has enriched my education immensely through connections within the community of Scott Scholars along with research opportunities made possible through this scholarship."

> - EMMAKATE RAISLEY, Chemical and Biological Engineering



"I am incredibly grateful to the Scott Foundation as it has provided me with the opportunity to chase and achieve my goals of becoming an engineer. I am now two years into my undergrad, and I cannot wait for the next two, thanks to this amazing opportunity."

> - EVAN MALLOY, Civil and Environmental Engineering



"The Scott Scholarship has provided me the opportunity to pursue my passions and feel more connected to the College of Engineering. I am incredibly grateful to all those who have made this scholarship possible, as it has helped me to grow and improve in so many ways."

> – MADISON HILL, Chemical and Biological Engineering

FALL 2017-FALL 2021 COHORTS SCOTT SCHOLARS BY MAJOR



SCOTT SCHOLARS — Academic Profiles

	FALL 2021 COHORT	INCOMING ENGINEERING AVERAGE
HIGH SCHOOL GPA	4.32	3.9
SAT AVERAGE*	1316	1266
ACT AVERAGE*	30.8	28
GENDER	60% women	27.2% women
RACIALLY MINORITIZED	25%	26.8%
FIRST GENERATION	20%	14.3%
HONORS PROGRAM	50%	13%**

FALL 2017-2020 COHORTS

57/66 RENEWED IN FALL 2021

> **avg. csu gpa** 3.737



Walter Scott, Jr., his grandson Dylan, left, and son David, right, visited with the first graduating class of Scott Scholars in the Iris & Michael Smith Alumni Center in Spring 2021.

*Average of the students who submitted test scores, which are no longer required **Reflects all engineering students

RESEARCH THEME BY AREA OF EXCELLENCE

WATER

 Apply computational biology to development of synthetic gene circuits and engineering stimuli-responsive membranes (e.g., for water purification).



HEALTH

• Engineering the microbiome (e.g., for environmental and health applications).



- Stem cell and gene therapies to improve musculoskeletal repairs.
- Biomaterials and tissue engineering as it relates to drug delivery, biomimetic materials, biodistribution, and metabolism.

ENERGY

• Engineering cyanobacteria (for bioenergy).

Improving energy efficiency in

computing systems by developing



 Aerospace propulsion, specifically clean and efficient rocket propulsion.

novel resource-management solutions.

- Energy access in the developing world.
- Emissions mitigation from fossil fuel sources.

ENVIRONMENT

 Engineering the microbiome (e.g., for environmental and health applications including genetically engineering plants to develop new biomaterials).



- Modeling changes in hurricane climatology due to climate change and climate science at large.
- Extreme rainfall, mesoscale processes, climate change, and mountain meteorology.
- Design of resilient structures.
- Atmospheric chemistry and applying the field to environmental issues.

WALTER SCOTT, JR. GRADUATE RESEARCH ASSISTANTS

The Scott Research Assistantship program attracts talented graduate students to assist faculty with groundbreaking research and to train the next generation of innovators. In 2021, the program, formerly known as the Scott Fellows, was renamed the Scott Graduate Research Assistantships.



"The Scott program has been instrumental in my ability to recruit top doctoral students to my research program at CSU. The talented individuals this program helps bring to CSU produce excellent research, make impactful contributions to solving global problems, and further the success of our programs in a way that would not be possible without the Scott Foundation's support."

> - SUSAN DE LONG, Associate Professor, Civil and Environmental Engineering

"The Scott program helped me choose to pursue my Ph.D. at CSU. The funding helped my

adviser and me extend our research budget to

further the research I have conducted on my

- RYAN ANDERSON,

Graduate Research Assistant,

Civil and Environmental Engineering

way to earning my degree."







"Being a Scott recipient has greatly contributed to my feelings of being welcomed and accepted by the CSU community. The award has led to further industry recognition and has added to my reputation as a scholar and researcher for future employers. I am honored and proud to have received this award."

> - BEN ETTLINGER, Graduate Research Assistant, Systems Engineering

"Having a Scott Graduate Assistantship helps the research by being able to attract top talent from across the country to come study at CSU. The assistantship helps improve the prestige of the program."

> - JEREMY DAILY, Associate Professor, Systems Engineering



2021 SCOTT GRADUATE ASSISTANTS COME FROM ACROSS THE U.S. AND AROUND THE WORLD

United States

Austin, Texas Charlotte, North Carolina Golden, Colorado Greeley, Colorado New Paltz, New York

Raleigh, North Carolina Stanford, California Waukesha, Wisconsin **International** Belgaum, India Mayagüez, Puerto Rico

WALTER SCOTT, JR. DISCRETIONARY FUND

The Scott Discretionary fund provides the Dean with flexibility to invest in areas advancing college excellence.

The fund supports student scholarships; provides Scott Scholars the ability to participate in enrichment activities and opportunities to collaborate with other students; offers unique laboratory research experiences and paid internships through the Scott Undergraduate Research Experience; and gives students internship placement and access to professional development programs.

SURE helps promote student success by providing a path for undergraduates to learn about applications, scientific methods, collaborations, and social impacts of being an engineer. The SURE program was especially meaningful during the pandemic with some students assisting faculty with creating and testing masks and other personal protective equipment. Other donors and foundations have also provided funding that has enabled more of our first-generation students to participate in the SURE program at no cost to the faculty supervisor.

National studies have shown that research experiences help students be successful in their academic programs. Analysis by Susan Benzel, director of CSU's Scott Scholars Program, has demonstrated that students participating in the SURE program also persist in engineering at a higher rate:

- About 40 students each year for the past three years have participated in SURE.
- More than 94 percent of students participating in SURE stay in the college.
- More than 98 percent of SURE students stay at CSU.
- About 43 percent of the 106 SURE students identified as first in their families to be able to attend university.

As in past years, the Scott Discretionary fund has also supported the Colorado Science and Engineering Policy Fellowship, which seeks to develop the next generation of policy and science leaders in Colorado. Students attended an eight-week intensive internship on the legislative process, which included developing model laws and policies, collaborating with policymakers in the state Legislature, and visiting corporate and research sites throughout Colorado.



2020-2021 USE OF SCOTT DISCRETIONARY FUND





WALTER SCOTT, JR. **PRESIDENTIAL CHAIRS**

Tami Bond and Jim Hurrell, the two Scott Presidential Chairs, contribute to leadership in their respective fields across CSU and on national and international levels. Dean David McLean also charged them this year with helping to lead the college's strategic planning effort with University Distinguished Professor Sonia Kreidenweis, the college's associate dean for research.

"Our participation is intended to help capture the passion of colleagues for our college mission and align our strategic thinking with the University's Courageous Strategic Transformation planning process," said Bond, the Scott Presidential Chair in Energy, Environment and Health in mechanical engineering. "Jim and I look forward to helping frame the future of the college."

In July 2021, Bond was named one of 47 people selected to serve on the EPA's Science Advisory Board from more than 350 candidates. She will also serve a dual role on the board's Climate Science Committee.

Her research explores the relationship between human activity and environmental impact and looks at the convergent relationship between technology choice, human needs, and infrastructure. That intersection acutely came into play during the pandemic. In addition to working with CSU's Facilities staff to ensure healthy air circulation in campus buildings, she collaborated with CSU and national counterparts in the Sustainable Performance of Healthy & Efficient Residential Environments, or SPHERE. She co-founded the national academic partnership to advance innovative approaches that promote human health in homes.

Hurrell, the Scott Presidential Chair in Environmental Science and Engineering in atmospheric science, has devoted considerable time and effort toward positioning CSU to lead a transformation in Earth system prediction by integrating existing atmospheric, ecological, and agricultural expertise across campus and beyond.





He is working on a major NSF Science and Technology Center proposal that will be submitted in the near future. "My ability to pursue this ambitious goal is a direct result of Scott funds, and for those, I am extremely thankful," Hurrell said. He is also on the leadership team of a new effort at CSU: the Climate Adaptation Partnership. The CAP supports interdisciplinary research efforts to address the complex challenges of climate adaptation, and it is building connections among researchers and policymakers to facilitate the application of climate adaptation research in policy venues.

Hurrell remains strongly committed to community and professional service.

In 2021, he was the first recipient of the American Meteorological Society's Warren Washington Research and Leadership Medal, in recognition of his combination of highly significant research and distinguished scientific leadership in the atmospheric and related sciences.

COLORADO STATE UNIVERSITY