

STRATEGIC VISION UPDATE

Two years ago, we launched our strategic vision and started on a new journey together. This update reports on the significant accomplishments we've achieved, since then, as a college. Fueling these accomplishments, our college community has grown by more than 65 staff and over 60 faculty since January 2017.



VISION: ACCELERATE OUR RESEARCH IMPACT

Growth and Impact – Research awards increased to more than \$100 million annually in both 2018 and 2019, a 28% increase from the previous year. Through cross-campus partnerships and engagement with national labs and industry partners, the college has grown the breadth of its research portfolio and its national impact. We focused the Research Support Office on the pre-proposal and post-award needs of our faculty. The college implemented a communications strategy that actively promotes the value of our research to the public, industry and federal and state government stakeholders. In three years, the college has had 4 members of our faculty elected to the National Academies.

Increased Interdisciplinarity – Building upon our existing strengths, we launched six interdisciplinary research themes to bring faculty from across the college together around broad societal challenges. The college invested \$3 million in these themes to date through seed grants, proposal support, workshops, matching funds and program manager visits. We also initiated the use of interdisciplinary faculty search committees in areas of national interest.

Enriched Doctoral Cohort – We increased our doctoral enrollment to 885 in Fall 2018, a 15% increase from Fall 2016. The college piloted a program to waive application fees for qualified domestic PhD applicants to reduce barriers for prospective students. We also received five U.S. Department of Education GAANN grants amounting to 117 academic years of doctoral fellowship support across the college. For Fall 2019, we observed a 44% increase in underrepresented minority applicants and a 30% increase in the number of underrepresented minority applicants who accepted our admissions offers.

Footprint – We have added more than 250,000 square feet to our college footprint, including more than 100,000 square feet of research space and shared research facilities. We have also renovated an additional 100,000 square feet of our existing facility. Additional research spaces are in development in the SEEC/SEEL complex, the north wing of the Engineering Center, the Discovery Learning Center, and the Electrical, Computer and Energy Engineering wing. CEAS became the first academic unit in University of Colorado Boulder history to meet a building campaign goal, surpassing our \$45 million fiscal obligation towards construction of the new Aerospace Engineering Sciences building.

Five CEAS undergraduate programs ranked in the top 20 by *U.S. News & World Report* (2020)

#6 Aerospace | **#9** Environmental

#15 Chemical Engineering | **#15** Mechanical Engineering | **#16** Civil Engineering

STRATEGIC VISION UPDATE



VISION: EMBRACE OUR PUBLIC EDUCATION MISSION

Growth – The number of students served by our college surpassed 7,500 (including more than 5,500 undergraduates) in Fall 2019, a 15% increase over three years. Of these undergraduates, more than 400 transferred into our college from outside the campus in 2018, double the rate in 2016. Transfer students into CEAS from other colleges on campus increased by 20% (to more than 360 students) in this same time frame. The academic qualifications of our students have also increased over this time frame. Our first- to second-year campus retention rate has been greater than 92% since Fall 2016. Similarly, the six-year campus graduation rate of undergraduates who start in CEAS has been greater than 77% in each of the last three years (May 2017-2019). Undergraduate scholarship funding increased above \$5 million in AY18-19, a 40% increase relative to AY16-17.

Diversity – Two years ago, the college set a goal of being the first public engineering college to reach gender parity while reflecting the demographics of our state’s high school graduates in its undergraduate population. Since then, we have increased the percentage of women students matriculating into our college from 32% in Fall 2016 to 44% in Fall 2019 while increasing the percentage of underrepresented minorities admitted as part of our first-year class from 17% in Fall 2016 to 24% in Fall 2019 and the percentage of first-generation students entering our college from 16% to 20%.

Student Success – The college is a campus leader in providing a comprehensive approach to student persistence. The college piloted an “early alert” system for first- and second-year students in Fall 2017 to encourage students experiencing academic challenges to seek help earlier in the semester. This effort has since expanded across the CU Boulder campus. Similarly, the college led the development of a campus-wide policy for grade replacement, which will become available to students across campus in Fall 2019. We created a new scholarship for students who demonstrate resilience and enhanced our approach to student services (including orientation, peer-mentoring and industry relations) and undergraduate advising. The college has also significantly expanded its academic offerings and community engagement around entrepreneurship. CEAS teams have won the top three honors in the CU New Venture Challenge in each of the last two years (2018 and 2019) and launched an Entrepreneurship minor in Fall 2019. We also created a new set of Biomedical Engineering B.S., M.S., and Ph.D. programs designed to grow collaboration with our medical campus.

Reach – Over the past two years, the college has expanded its partnership program with Colorado Mesa University, rolling out new degrees in civil engineering and electrical and computer engineering, and created a new partnership program with Western Colorado University with degrees in mechanical engineering and computer science. The college has also created well-lit pathways for transfer students from all of Colorado’s community colleges, including the creation of 2+2 and 2+3 programs with our community college partners. The college is leading campus innovation around online education with our applied computer science post-baccalaureate degree and electrical engineering MOOC-based graduate degree. Providing these degrees online advances our vision to deliver CEAS education to students around the world. In 2017, we achieved successful ABET accreditation or re-accreditation of all 12 of the college’s undergraduate degree programs.



STRATEGIC VISION UPDATE



VISION: INCREASE OUR GLOBAL ENGAGEMENT

Global Community – The college has grown a global community and now has the largest percentage of international students of any unit on campus. In Fall 2018, 39% of our graduate students (21% campus-wide) and 10% of our undergraduate students (7% campus-wide) were international students. The college regularly celebrates the international diversity of our student body, faculty and staff and fosters an inclusive and welcoming community. As an example, in 2017, we hosted CUnity Day, a celebration of our international culture. The college also joined with the campus and system to stand with DACA students and employees and launched a podcast series highlighting the stories of engineering Dreamers.

Alumni Engagement – We established a college-based alumni engagement team and developed CU Engineering Networks in Denver, Houston, San Francisco, Seattle and Southern California. Since January 2018, the college has planned 14 regional alumni events and launched the Homecoming Tailgate. We relaunched the GOLD Board (graduates of the last decade) and recruited 11 members. The college also recruited 16 alumni to serve as Regional Network Ambassadors in key cities. We reinstated the alumni email newsletter and enhanced the alumni engagement website. The college is also strengthening relationships with student organizations and academic departments to create additional opportunities for alumni engagement.

Global Engineering – The college continues to expand its emphasis on global engineering with new leadership and lab space for the Mortenson Center. Through the Mortenson Center this year, 70 graduate students are working in 24 countries globally on water, sanitation, energy and infrastructure. In 2019, newly funded research programs include partnerships with USAID, Millennium Challenge Corporation, Wellspring Foundation, Unilever and Autodesk Foundation. This year, we introduced the Global Engineering Awards during the seventh annual WASH Symposium, which brought 300 people from 13 different countries to campus. Our students continue to have significant societal impact, globally. In recent years, the CU Boulder chapter of Engineers Without Borders has built drinking water systems in Rwanda, Nepal, Puerto Rico and Guatemala. Students in the CU chapter of Bridges to Prosperity have built footbridges in Bolivia and Swaziland to connect isolated communities. The college is offering new courses in global engineering for undergraduate and graduate students, and more than 50 CEAS undergraduates are enrolled in the global engineering minor. In 2018, we also launched a global aerospace engineering degree track to increase computing skills, global competency and workplace readiness for AES students.

Strategic Partnerships – Undergraduate participation in international programming has nearly doubled. More than a dozen new international engineering programs have been added to our portfolio including partnerships in France, England, Australia, Ecuador and China. We continue to innovate such that all of our interested students are afforded the opportunity of a global experience.

STRATEGIC VISION UPDATE



VISION: ENRICH OUR PROFESSIONAL ENVIRONMENT

While we remain a work in progress, the college has made strides in building community, improving communication and improving its professional environment.

Open and Expanded Communications – The college has held open forums to improve communications regarding immigration, DACA, sexual harassment and mental health. We significantly increased communication of college highlights and events internally and externally. The dean has made it a point to visit each department each semester. In 2017, we created an anonymous feedback form that is regularly used by the college community. In 2019, the college created a staff council to facilitate communication of staff issues and work with the leadership on matters that impact staff.

Broader Input in College Operations – The college has sought input on a broad range of matters in decision-making. Examples include: We implemented a new college budget process that gathers input from a broad range of stakeholders, including all department chairs and program directors. Endowed chair assignments are made in close coordination with our department chairs. The college released an open call to all CEAS faculty prior to the creation of our interdisciplinary research themes.

Clarified Roles and Responsibilities – We have worked with department chairs to strengthen the roles and responsibilities of these critical leadership positions. We have also strengthened the role of the units in annual faculty/staff evaluations. The college has empowered the Undergraduate Engineering Council and Graduate Engineering Council in curriculum matters. Following a college-wide discussion, we changed how college undergraduate advising staff are supervised.

Community Building Across the College – We assessed our professional environment in January 2017 through our first college climate survey. We shared the results of this survey and the dean discussed opportunities for improvement with each department. We have held implicit bias training and crucial conversations training across the college, and we were the first unit on campus to achieve 100% compliance with campus sexual harassment training policies. In August 2018, the college joined NCWIT's Pacesetters program to increase the inclusiveness of our professional environment. We implemented a staff orientation program in response to the campus engagement survey results. We piloted a new spouse/partner program as part of this year's faculty searches. The Engineering Center is the first building on campus to become 100% plastic-free on beverage containers.

Improved Equity in Advancement and Career Progression – We created the position of associate dean for faculty advancement in 2017. The college enforced rotation of First-Level Review Committee members and increased transparency of FLRC membership and process. We created and utilized a new salary pool for staff and instructor compressions as part of the college budget. We also increased use of pre-emptive faculty retentions across college. The college performs staff and faculty equity analysis annually and is sharing this information with department chairs. We nominated and advocated for additional campus appointments for a significant number of CEAS faculty and staff. The percentage of women and under-represented members of the college leadership team grew from 30% in Fall 2016 to 48% in Fall 2019. The college grew philanthropic fundraising from \$19 million to more than \$30 million annually and increased the number of endowed faculty positions across the college by 20%.

