

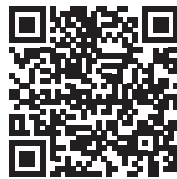
STRATEGIC VISION

Engineering sustainable solutions to improve the
quality of life in our state, nation and world.



College of Engineering & Applied Science

UNIVERSITY OF COLORADO **BOULDER**



colorado.edu/engineering/vision

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LETTER FROM THE DEAN

September 2023

Dear CU Boulder Engineering community,

In fall 2022, we undertook a college-wide exercise to chart our path to the future. Our new strategic plan is the result of deep collaboration and introspection with our communities and stakeholders. We have analyzed global trends and challenges in engineering — especially the evolving relationship between humans and technology. It is a forward-thinking vision that I am proud to share with all of you.

In the College of Engineering and Applied Science (CU Engineering), we are driven by a commitment to excellence in research and innovation, education and inclusion. These are the pillars that frame our work.

Our new strategic plan sets forth a bold vision in these three areas. It outlines our aspirations for the next five years and provides a concrete and comprehensive framework to achieve our collective goals. It supports our campus vision to be a leader in identifying and addressing the humanitarian, social and technological challenges of the 21st century.

Reaching these goals will require all of us making a commitment to move them forward. Each of you will play an important role. Your insights, expertise and thoughtful work will be crucial to realizing this vision.

Together, we have the opportunity to shape the future of engineering.

Sincerely,

A handwritten signature in black ink, appearing to read 'Keith Molenaar', with a long horizontal flourish extending to the right.

Dean Keith Molenaar

STRATEGIC VISION

Who We Are

- » A world-class research college
- » An economic innovation engine
- » A flagship public college for education
- » A community committed to inclusive excellence



RESEARCH AND INNOVATION

We shape the world through research that generates fundamental knowledge and translates innovations to impact.

CU Engineering is a comprehensive research college that generates sustainable solutions to pressing societal challenges. We are home to nationally recognized faculty and a place for all faculty to grow throughout their academic careers. CU Engineering is the destination of top doctoral students. We are a cultivator of research curiosity at all levels of training and education. Our world-class facilities support fundamental and applied discoveries at the research frontier. CU Engineering is an incubator of entrepreneurs who partner with government and industry to drive our economy.

In the next five years, we will:

- » Be a trusted source of engineering knowledge to inform national policy and research priorities.
- » Be a leader of entrepreneurial ventures that enhance health, safety and quality of life.
- » Be an integrator of large-scale interdisciplinary research with partners beyond our college and campus boundaries.

To enable this vision, we will:

- » Identify and invest in three to five interdisciplinary and global research themes that increase our research impact by deepening our collaboration across the college, campus and institutes.
- » Increase our investment in signature research partnerships (e.g., NIST, NREL, Sandia, etc.) by leveraging investments in the Quantum Engineering Initiative, Renewable and Sustainable Energy Institute, National Security Institute and other strong research focus areas of mutual interest.
- » Double the number of collaborative proposals led by CU Engineering with our CU Boulder institute partners by investing in seed grants and supporting proposal development needs.
- » Place at least 10 percent of the college faculty in positions that shape local, state and national research and policy agendas.
- » Develop and maintain six to 10 signature industry partnerships in engineering and computer science fields that span research, education and workforce development.
- » Invest in training and education for faculty and doctoral students to promote entrepreneurial work and the development of intellectual property (e.g., creation of new companies, patents, technology licenses, software distribution, etc.).
- » Create and sustain a program through which scholars from across the globe choose to spend their sabbaticals at CU Boulder to enhance our global reputation and deepen international research relationships and collaborations.



EDUCATION

We inspire tomorrow's leaders through engineering education that cultivates curiosity, care and community.

CU Engineering is a long-standing nationally recognized leader in experiential learning. Through faculty and staff curiosity, we inspire student success and lifelong learning by embracing a holistic approach to education. We are the leading destination for every aspiring engineering student in the state of Colorado and the college of choice for students from across the nation and around the world. We embrace multiple modalities of delivery and opportunities for educational engagement. We invest in serving first-generation, underrepresented and historically marginalized students and support their academic and career success. We recruit and develop undergraduate and graduate students who become the next generation of leaders in industry, academia and public service.

In the next five years, we will:

- » Be nationally recognized for our first-year residential experience that builds a strong engineering community and supports student success through graduation.
- » Be the college of choice for undergraduate and graduate students committed to engineering sustainable solutions and addressing society's most critical challenges.
- » Be a teaching community that embraces and advances educational innovations to improve student outcomes.

To enable this vision, we will:

- » Offer full cost of attendance for all first-generation students from Colorado in financial need and provide these students with programmatic support to become successful engineers.
- » Strive for gender parity in our first-year class by 2028 through actively recruiting and cultivating a community for top women engineers.
- » Improve student retention rates across all student demographics to the top quartile of our national peers and close our existing equity gaps.
- » Enhance our co-curricular opportunities, such as residential experiences, mentoring, leadership, study abroad, research and internships to improve student belonging and career affinity.
- » Develop and grow innovative educational offerings through various modalities to increase access to all undergraduate and graduate students.
- » Create new interdisciplinary doctoral programs in Engineering Education, Robotics and other emerging fields that compete with aspirational peers for the best doctoral students.
- » Increase the overall number of Ph.D. students by 25 percent and double the number of Ph.D. students in our interdisciplinary programs while simultaneously diversifying our demographics and increasing support resources.



INCLUSION

We grow stronger by embracing and cultivating the unique contributions of all community members.

CU Engineering is a college where diversity, equity, inclusion, belonging and community building are fundamental values for our shared growth. We aim to recruit, retain and support students, staff and faculty who have been historically marginalized, excluded and underrepresented. We seek to collaboratively make equitable changes that remove barriers and enhance access to programs, resources and services. We value a community of cultural diversity and the sharing of different ideas and perspectives, and we strive to empower the voices of all community members within CU Engineering and campus wide.

In the next five years, we will:

- » Be a college that prioritizes learning, growth and accountability from faculty, staff and students as we work toward the constant pursuit of a diverse and inclusive culture.
- » Be a community that prioritizes equitable student opportunities, outcomes, services and success, with an internal and external brand of inclusion and excellence.
- » Be a place where each individual leads with cultural awareness, humility, empathy, grace and a vigorous curiosity modeled by all leaders.

To enable this vision, we will:

- » Implement inclusive learning opportunities and practices for all students, faculty and staff across the college.
- » Organize and leverage the focus of college councils and committees to recruit and retain diverse students, faculty and staff.
- » Establish and implement equity review processes for policies, procedures and practices affecting students, staff and faculty around scholarships and workforce management.
- » Create community and belonging initiatives for students, staff and faculty that promote a culture of dialogue, growth, awareness, empowerment, agency, psychological safety, ownership and accountability.
- » Incorporate inclusive pedagogy and Universal Design for Learning into faculty development programs and tools by promoting collaboration between curricula committees, instructors and campus partners.
- » Invest, resource and build collaborative relationships supporting inclusion with student organizations, professional affinity groups and industry to build access, scholarship opportunities and career development for students.
- » Celebrate the success of faculty, staff and students from across the college for their commitment to diversity, equity and inclusion.

Be Boulder.

In ENGINEERING



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