Engineering Advisory Council
Theme: Engineering the Next Chapter

College of Engineering & Applied Science
UNIVERSITY OF COLORADO **BOULDER**

Be confident. Be inspired. Be a leader.
Be Boulder.

Agenda

- Welcome and State of the College
- Workshop: AI in Engineering Practice and Workforce Development
- Lunch in Campos Student Center
- Workshop: Telling our Story—Advancing Engineering in CU Boulder's Campaign
- EAC Executive Session
- Attend Engineering EXPO

150th Anniversary

Colorado's leading public research university, transforming lives since 1876

College of Engineering & Applied Science
UNIVERSITY OF COLORADO BOULDER

Be confident. Be inspired. Be a leader.
Be Boulder.

PURPOSE & GOALS

Celebrate CU Boulder's Historical Eras

From 1876 to today—milestones, changemakers and CU's evolving role in shaping Colorado and the nation.

Center Missing Histories

Elevating stories of underrepresented students, faculty, staff and alumni to tell a fuller, more honest account of CU's past.

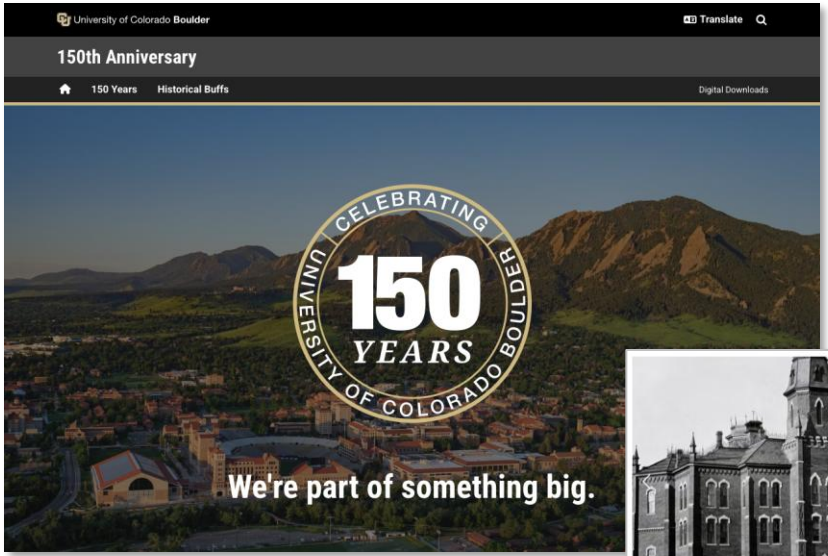
Connect Locally and Globally

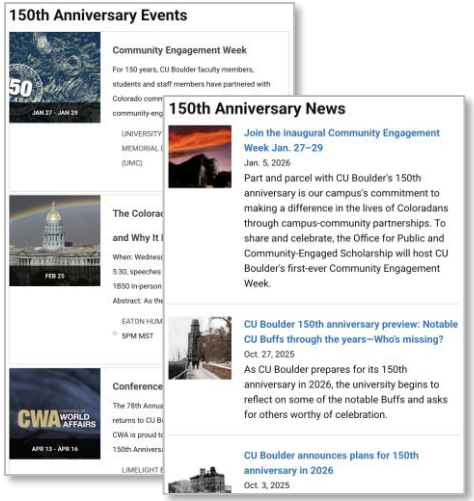
Exploring CU's impact on Boulder, Colorado, the U.S. and the world.

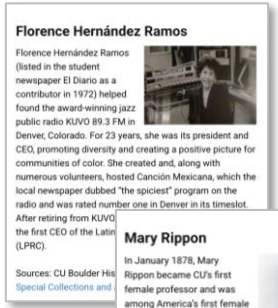
Inspire the Future

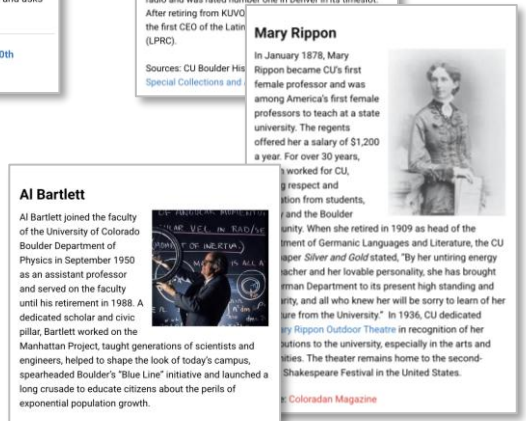
A call to reflect, share additional stories and help shape CU Boulder's next chapter.

colorado.edu/150









Engineering Advisory Council

Purpose:

- Advise the college on programs and policies
- Encourage and advocate for resource development
- Develop and guide education, outreach, and research programs
- Recognize achievements of alumni and other supporters in publicity and public relations

Meeting Expectations:

- Provide candid assessment to help us improve
- Speak and listen for understanding

EAC Executive Committee

Bhavna Chhabra

Chair

Susie See

Incoming Chair

Ed Ward

Incoming Vice Chair

Hari V. Krishnan

Committee Member

EAC Membership Updates: New for Fall

Edward Ashwood, MD

University of Colorado,
Anschutz Medical Campus
BS Chemical Eng., CU Boulder

David Parrillo

Dow, Inc.
Vice President of Research
& Development

Todd T. Kingdom, MD

University of Colorado
Anschutz, School of Medicine
BS Chemical Eng., CU Boulder

Thank you, Paul, for 8 years of service on the Engineering Advisory Council!

College Leadership Updates

DEPARTURES

- **Ken Anderson**
  Chair, CS
- **Mike Gazarik**
  Director, EMP
- **Hanspeter Schaub**
  Chair, AES

ADDITIONS

Wendy Martin
Interim Director, EMP

INCOMING

- **John Evans**
  Chair, AES
- **Bri-Mathias Hodge**
  Interim Chair, ECEE
- **Sriram Sankaranarayanan**
  Chair, CS
- AD for Digital Education
  (search underway)

Since Our Last EAC Meeting

Engineering Progress with Purpose and Care

1. Expanding industry research partnerships
2. Focusing on reducing faculty and staff stress, in addition to promoting health and wellness
3. Recapturing our leadership in gender parity

Anticipating Industry Research Directions

- Artificial Intelligence
- Quantum Technologies
- Sustainability and Resiliency
- Advanced Materials and Manufacturing
- Digitally Assisted Predictive Engineering
- Energy Resilience


College of Engineering & Applied Science

Anticipating Industry Research Directions

Summary

Artificial Intelligence (AI)

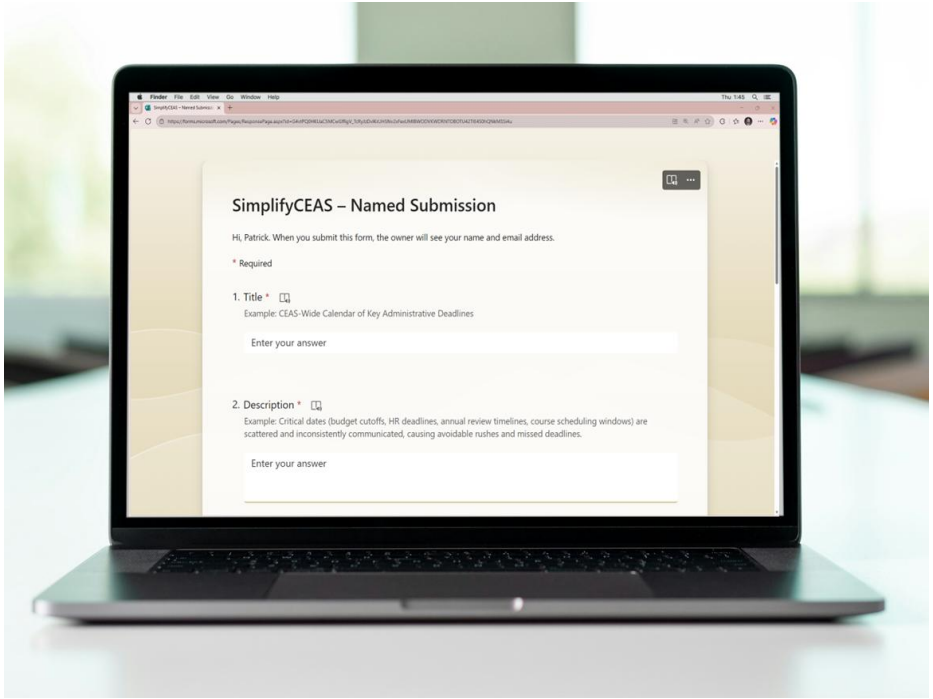
Caldwell, Goldsmith, Golmon, Gustavson, Linebarger, Ma, Pretti

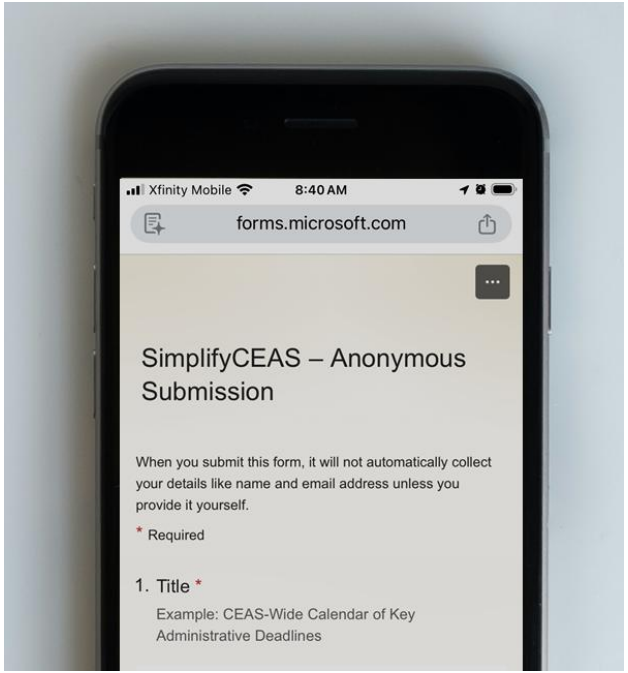
SimplifyCEAS

- A college-wide effort to reduce administrative burden ('red tape') that contributes to faculty and staff stress.
  - Suggested by Engineering Advisory Council
  - Supported by Faculty Governance and Engineering Staff Councils
  - Implementing at Admin Council

Pearl, Pretti, Smith, Ward

SimplifyCEAS





SimplifyCEAS

January

- Populated first round of ideas in college-wide meeting

February

- Generated additional ideas, moderated, rated ideas

March-August

- Implementing top ideas, tracking progress, reporting outcomes

Leading Engineering Gender Parity—Again

1. Engineering Your Career: Future Careers in Engineering & Tech
2. Submitted panel ideas to Women in STEM Caucus
3. 4/18 SWE Panel at Admitted Students Day
4. 4/19 Women in Engineering Brunch w/100+ attendees
5. Reinstituting SWE Scholarships
6. Launching Learning Circles for AY26/27

Brinkman, Hogan, Pearl,
Furlani, Pretti, See

State of the College

Spring 2026

College of Engineering & Applied Science
UNIVERSITY OF COLORADO **BOULDER**

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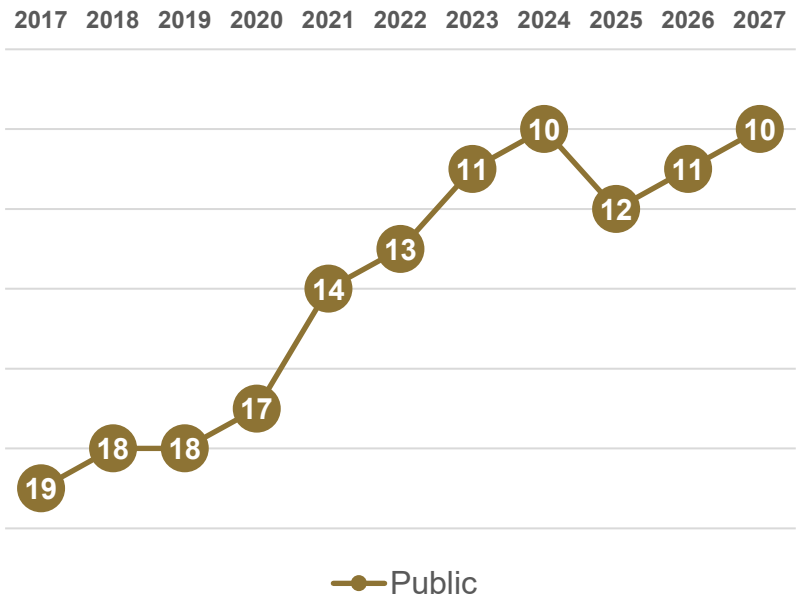
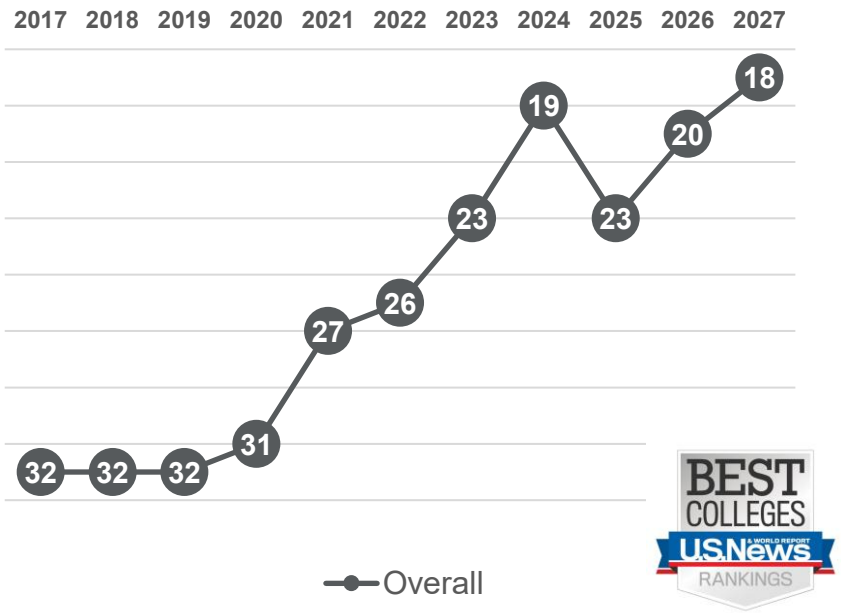
Driving our Strategy Forward

Graduate Rankings





2026 NAE Fellows

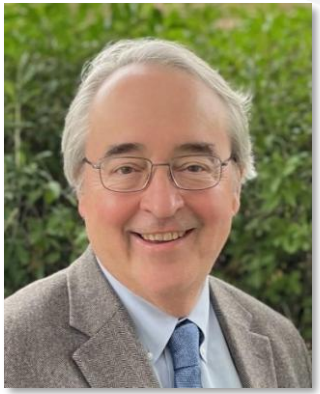
NATIONAL ACADEMY OF ENGINEERING

Prof. Dana Anderson

- JILA Fellow
- Dept. of Physics
- Dept. of Electrical, Computer & Energy Engineering

Prof. Iain Boyd

- Ann and H.J. Smead Dept. of Aerospace Engineering Sciences
- Director, Center for National Security Initiatives



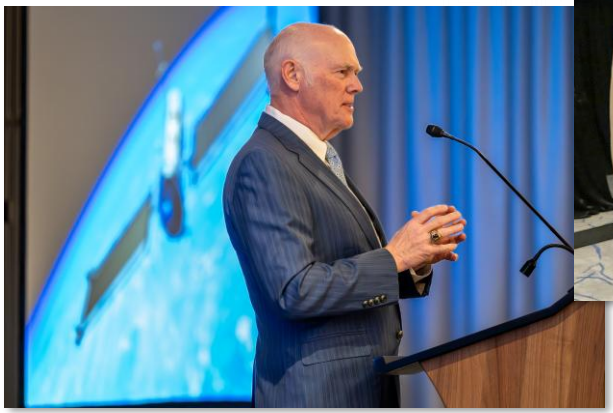
Prof. Bob Erickson

- Distinguished Professor Emeritus
- Dept. of Electrical, Computer & Energy Engineering

2026 West Regional Meeting

March 23-24, 2026

- Business session
- Public symposium
- Poster session
- Lab tours

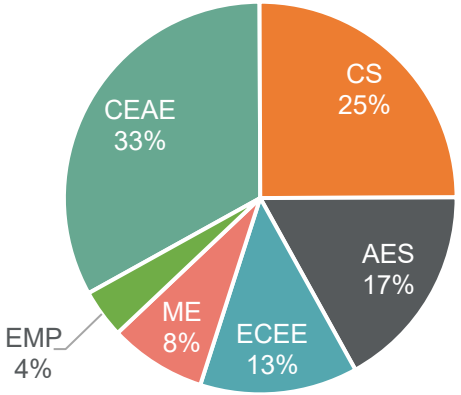


NATIONAL ACADEMY OF ENGINEERING

Research & Policy Advancement Fellows

Recognizing and supporting faculty who are actively engaging in positions that shape local, state, and national research and policy agendas.

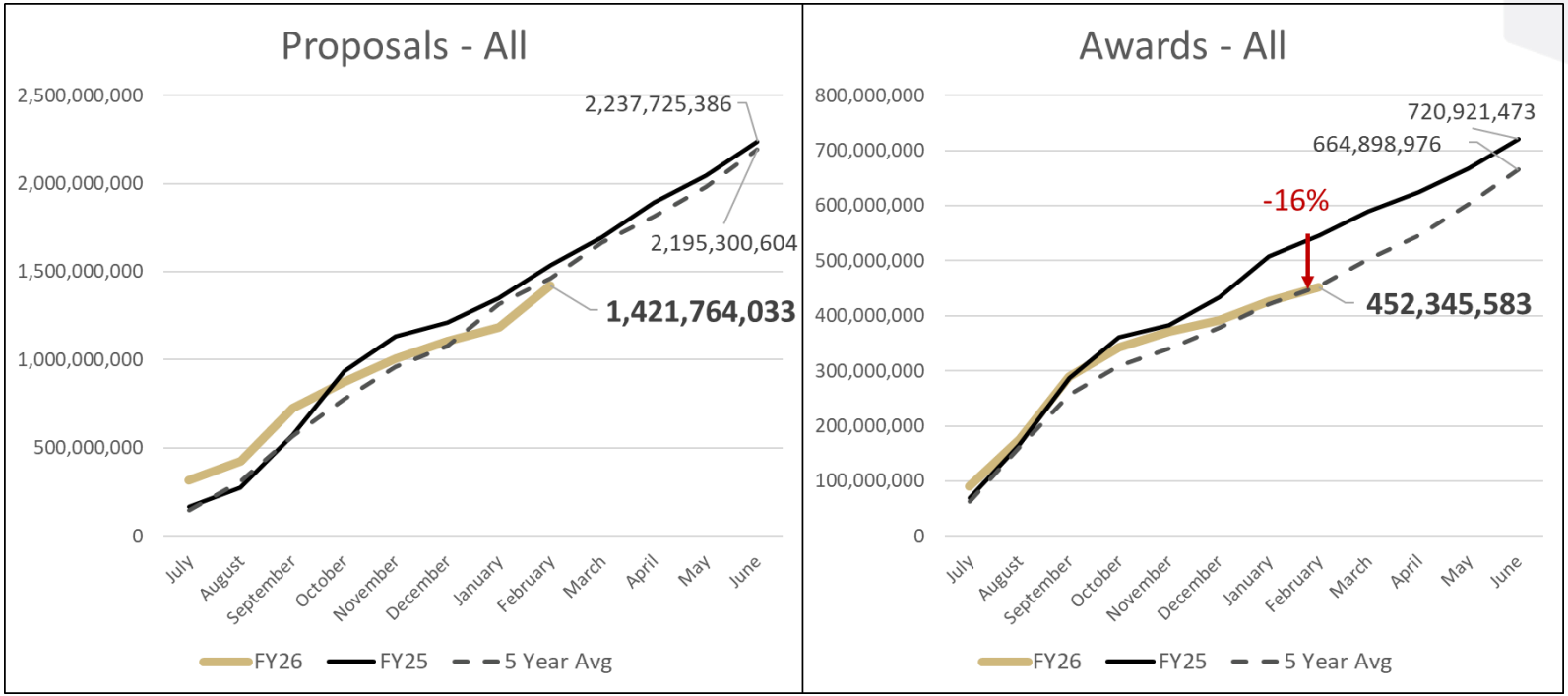
24 Fellows



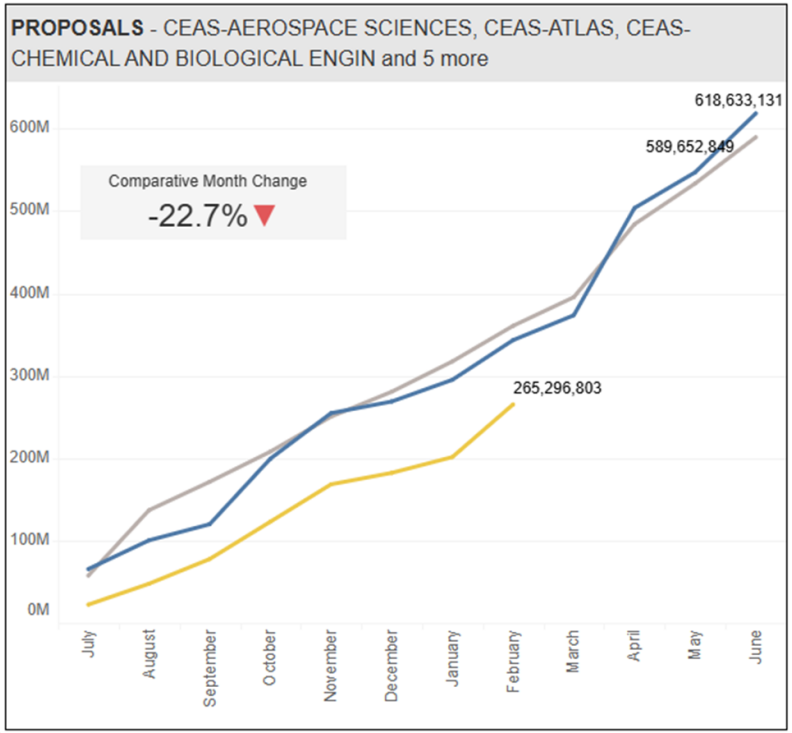
Fellows represent tenure-track, teaching, and research faculty at all ranks.

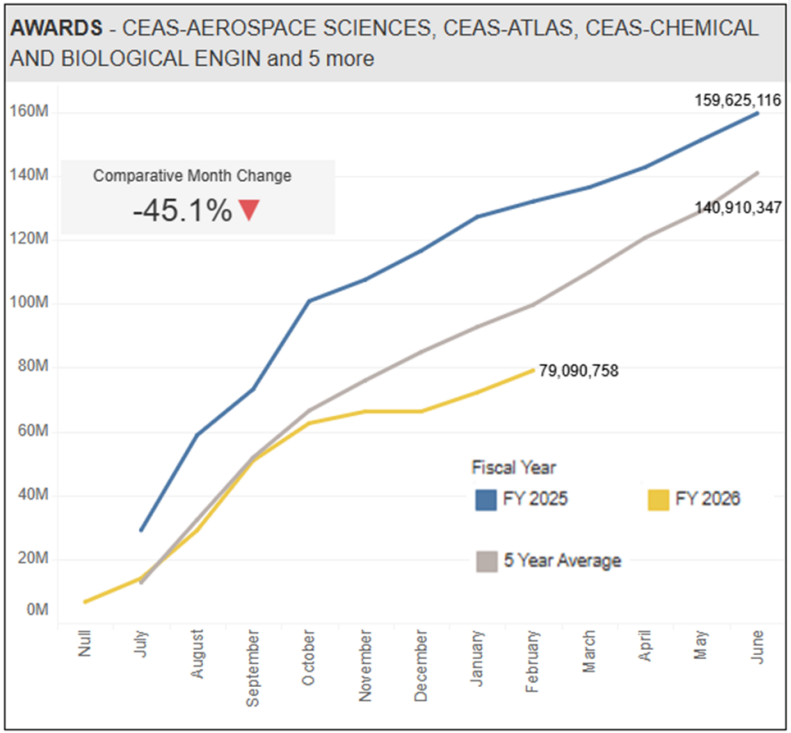
- Advancing global water security policy
- Shaping NASEM blueprint to expand computing PhD pipeline; securing global competitiveness
- Advising federal agencies on solid earth geophysics
- Shaping research agenda linking mechanics, biophysics, and medicine
- Shaping the future of photonics and quantum engineering through research and STEM education
- Saving outer space heritage before it is lost
- Developing a zero-carbon roadmap for structural engineering
- U.S. representative to United Nations scientific panel on AI and governance

All Campus Proposals and Awards

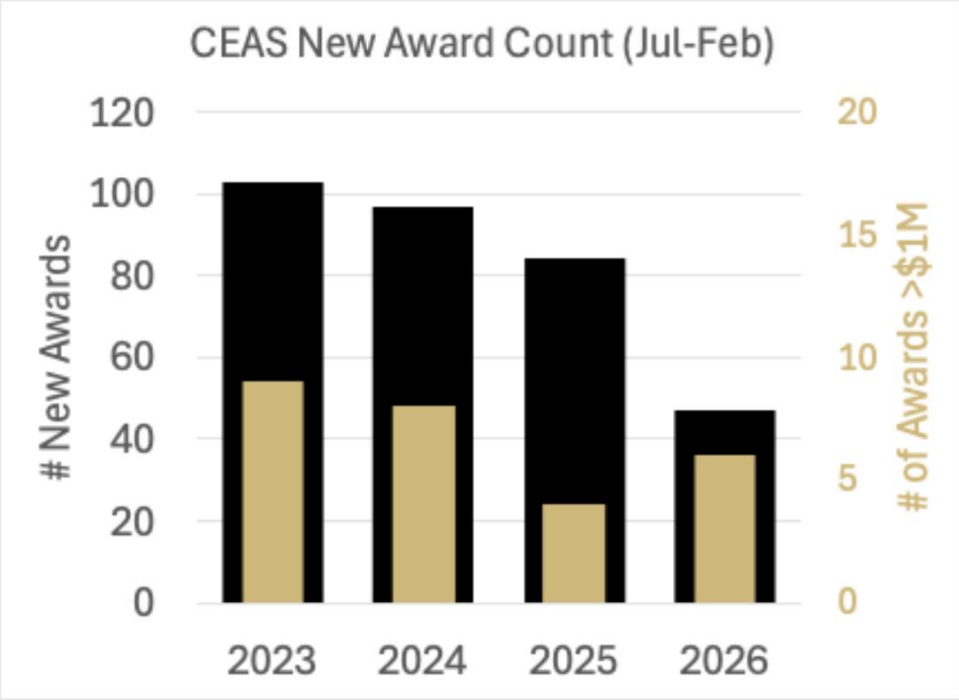


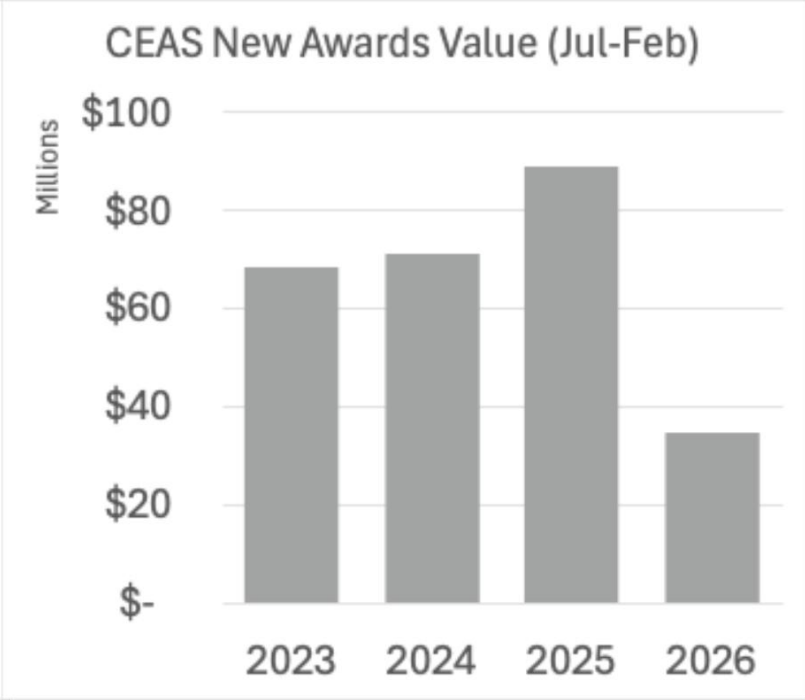
CEAS Proposals and Awards



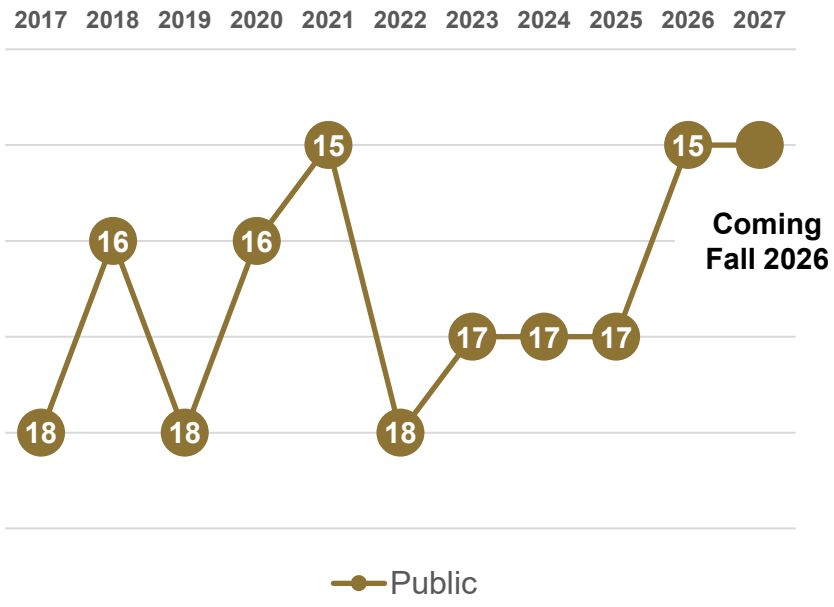


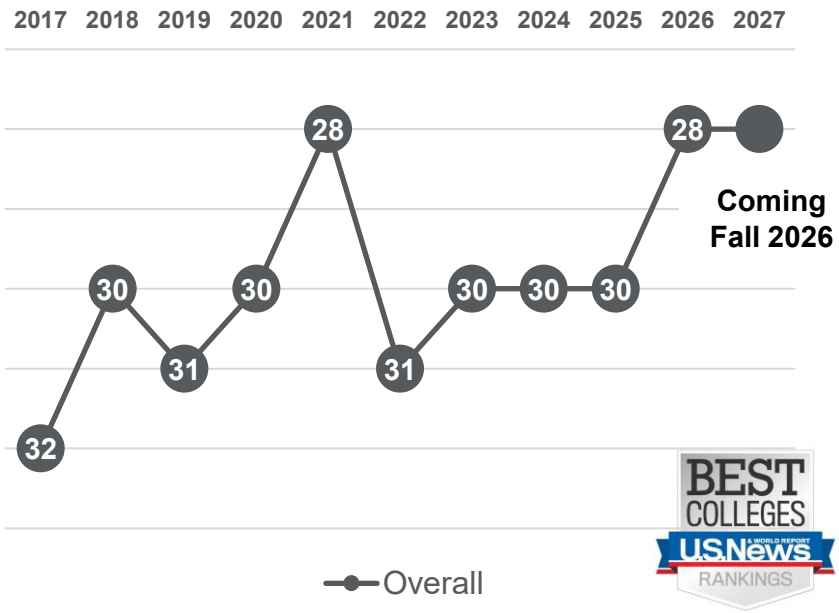
New Award Analysis





Undergraduate Rankings





Dean's Fellowship: Excellence in AI

- **Faculty leadership in responsible use of generative AI in the classroom**
- **Received 12 proposals and funded 8 projects**
- **Generative AI Futures Lab**
  - Educate faculty and students about generative AI
  - Facility that allows them to work with various generative AI technologies
- **Generative AI-based automatic tutoring system**
  - Provide support to students anytime
  - Allow course staff to monitor generative AI usage

Generative AI and the Evolving Face of Student Support

Friday, May 2, 1:30 – 3 p.m. on Zoom

Students are increasingly relying on Gen AI for help with understanding course materials, preparing for exams, and solving assignments.

Join us to discuss how this is affecting classroom teaching. Hear from our innovative faculty about tools they are designing and adopting to support students using Gen AI. We will explore why these tools may require more support from TAs, but in ways that enhance student learning and assessment.

GENERATIVE AI FUTURES LAB

- **Diane Sieber**, Herbst Program for Engineering, Ethics and Society will present her Generative AI Futures Lab.

HOW FACULTY ARE USING GEN AI

- **Debanjan Mukherjee and Jeremy Koch**, Paul M. Rady Mechanical Engineering
- **Bobby Hodgkinson and Chloe Long**, Ann and H.J. Smead Aerospace Engineering Sciences

Integrated Business–Engineering Degrees

IBE

(Business)

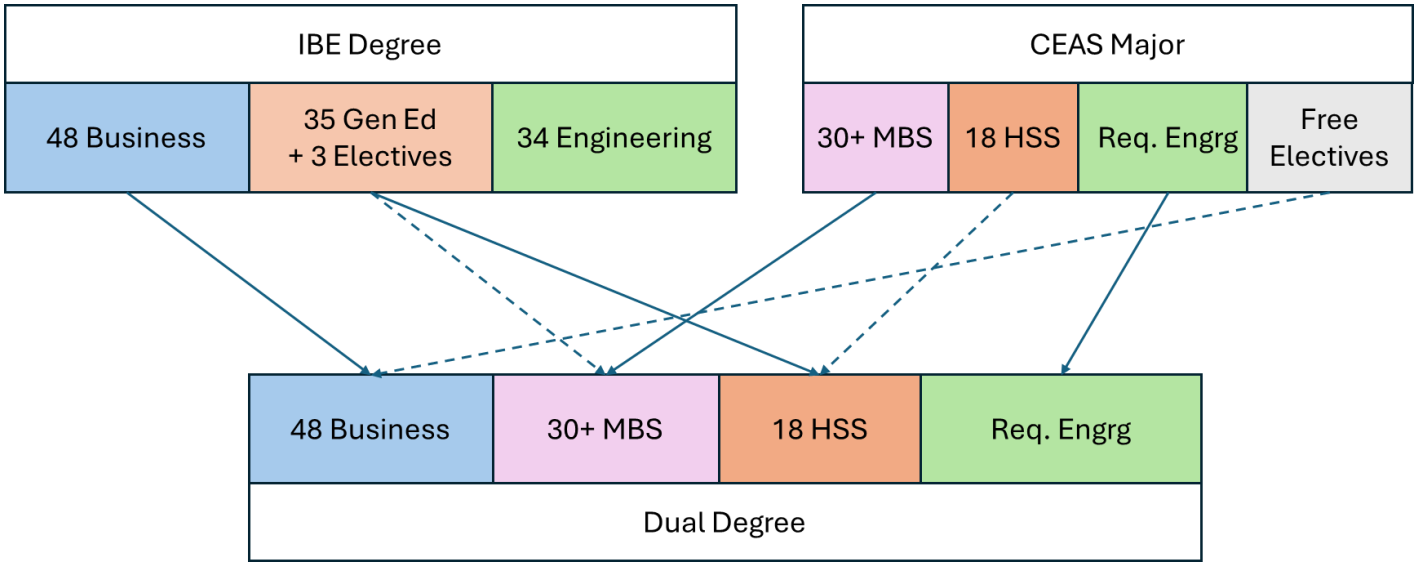
- 4-year degree
- AACSB-accredited

IBE Dual Degree

(Business + Engineering)

- 5-year dual degree
- ABET accredited
- AACSB-accredited

Integrated Business–Engineering Degrees



Integrated Business–Engineering Degrees

CEAS Major	Total # of credits*	Double-counted credits
Aerospace Engineering	173	75
Architectural Engineering	176	72
Biological Engineering	176	72
Biomedical Engineering	170	78
Chemical Engineering	176	72
Civil Engineering	176	72
Electrical Engineering	172	76
Electrical & Computer Engineering	169	79
Integrated Design Engineering	150	98

* Currently, engineering dual degree students take 200+ credits

All-comers

- This *[program]* is open to *[qualified*]* CU Boulder *[employees, faculty, students]* and does not discriminate based on race, color, national origin, sex, age, disability, creed, religion, veteran status, marital status, political affiliation, political philosophy, pregnancy, sexual orientation, gender identity or gender expression in accordance with state, federal, and Regent law.

*If used, qualification should include specific, neutral qualifications like professional credentials, GPA requirements, or any other non-protected identity qualifications that apply.

For questions, contact Medford.Moorer@colorado.edu

Continuing Leadership Training

Supervisor Training Recognition Program*

Learning Journey 1: Establishing Your Foundation as a Supervisor

1. Management & Compliance
2. Crucial Conversations for Mastering Dialogue
3. Leading at the Speed of Trust
4. The 6 Critical Practices for Leading a Team
5. Inclusive Hiring

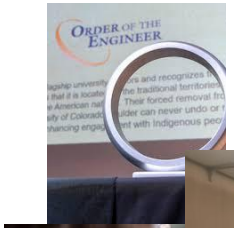
Micro Aggression Training

- In partnership with CTWI
- Attended by all Admin Council Members

*Complete all 5 modules, earn $500 professional development fund

Creating Inclusive Student Events

- Ring and Pin Ceremony
- Alumni Weekend
- Engineering Projects Expo
- Ongoing recognition of inclusive excellence



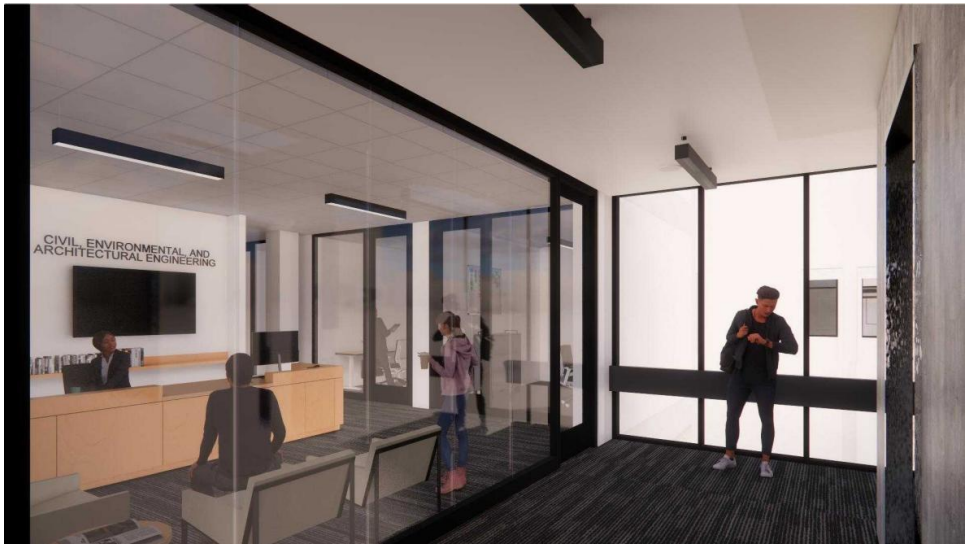
Creating Inclusive Student Spaces

- Discovery Learning Center
- Civil Engineering Storefront
- Electrical Engineering Storefront

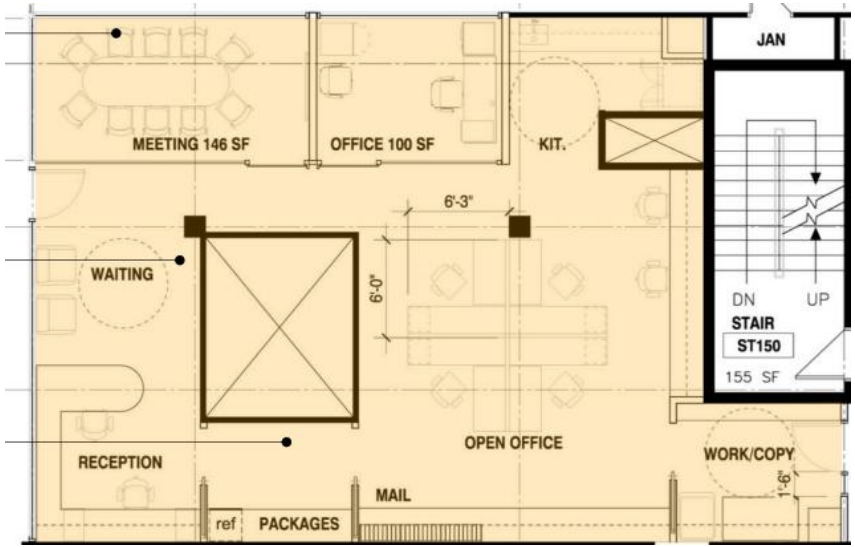
DLC

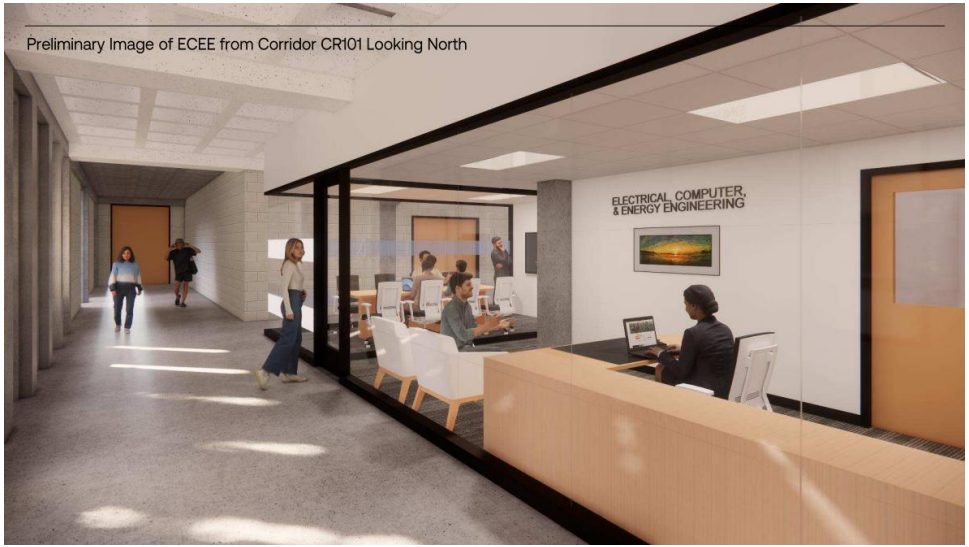
HOL Renovation

Civil Engineering Storefront



Electrical Engineering Storefront





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- Workshop: AI in Engineering Practice and Workforce Development
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- Workshop: Telling our Story—Advancing Engineering in CU Boulder's Campaign
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- Attend Engineering EXPO

Workshop: AI in Engineering Practice and Workforce Development

Sriram Sankaranarayanan, Associate Dean for Digital Education

Bobby Schnabel, Dept. External Chair and Professor, Computer Science

Christoffer Heckman, Assoc. Professor, Computer Science

Debanjan Mukherjee, Assoc. Professor, Mechanical Engineering

Amy Richards, Professional Development & Industry Relations Program Manager, CS

Diane Sieber, Assoc. Professor, Herbst Program for Engineering, Ethics & Society

Bobby Hodgkinson, Assoc. Teaching Professor, Aerospace Engineering Sciences

EAC Workshop: Industry Expectations of AI Education

Chris Heckman | Associate Professor, CU Boulder

Current Initiative: Architecting CU's new MS-AI degree and AI Engineering curriculum.

The Industry Reality: AI is moving from a specialized research domain to a core utility in everyday engineering workflows, using off-the-shelf tools (e.g. Gemini, Claude) and custom ones (custom agentic workflows, fine-tuned models).

Discussion Goal: 1) Identifying the exact AI skills our engineering graduates need to hit the ground running in the next 3-5 years; 2) Surveying the landscape of tailored AI systems being designed and built in engineering disciplines today.

University of Colorado Boulder

Translate

Ann and H.J. Smead Aerospace Engineering Sciences
COLLEGE OF ENGINEERING AND APPLIED SCIENCE

The Smead Program | News & Events | Engage with Us

About Us | Admissions | Academics | Research | People | Inclusion

Bobby Hodgkinson

Associate Teaching Professor

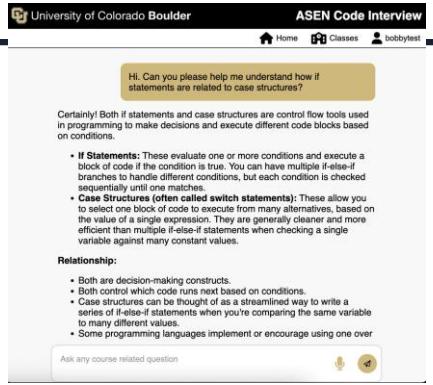
hodgkinr@colorado.edu

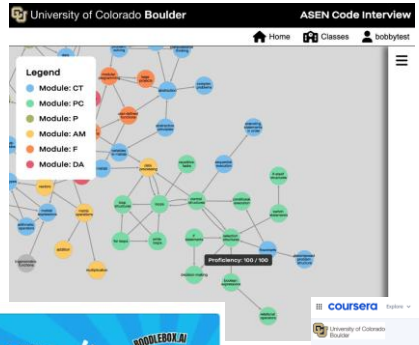
Education

MS, Aerospace Engineering Sciences,
University of Colorado Boulder, 2011
BS, Aerospace Engineering Sciences, University of Colorado Boulder, 2010

Experience

2024 - Present, Associate Teaching Professor,
Smead Aerospace Engineering Sciences,
University of Colorado Boulder
2018 - 2024, Assistant Teaching Professor,
Smead Aerospace Engineering Sciences,
University of Colorado Boulder
2013 - 2018, Professional Research Assistant,
Smead Aerospace Engineering Sciences,
University of Colorado Boulder
2011 - 2013, Laboratory Manager, Institute for Networked Autonomous Systems, University of Florida Department of Mechanical and Aerospace Engineering





BOBPE

BOt-Based Personalized Education & Productivity Enhancement

Scalable personalization in education, grounded in learning science and enabled by AI.

What Is BOBPE?

BOBPE is an initiative focused on leveraging bot-based technologies to support personalized education and productivity enhancement at scale. Grounded in Bloom's 2-Sigma problem, BOBPE explores how modern AI systems can approximate the benefits of one-on-one tutoring, individualized feedback, and expert guidance without requiring unsustainable human labor.

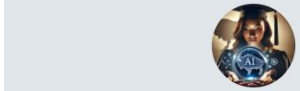
Rather than replacing instructors or automating learning, BOBPE is designed to **amplify human teaching**. AI tools are used to support understanding, reflection, and feedback while preserving instructor judgment, pedagogical intent, and ethical guardrails.

Why BOBPE Exists

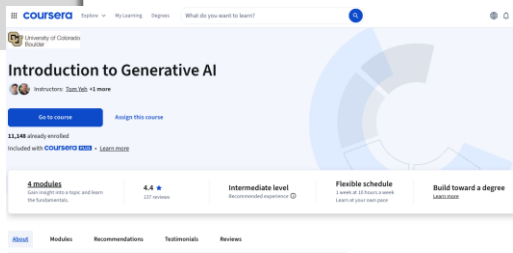
Educational research has long shown that individualized instruction dramatically improves learning outcomes. Bloom's 2-Sigma study demonstrated that one-on-one tutoring leads to performance gains far beyond traditional classroom instruction, yet such personalization has historically been impossible to provide at scale.

BOBPE responds to this challenge by asking a simple question:

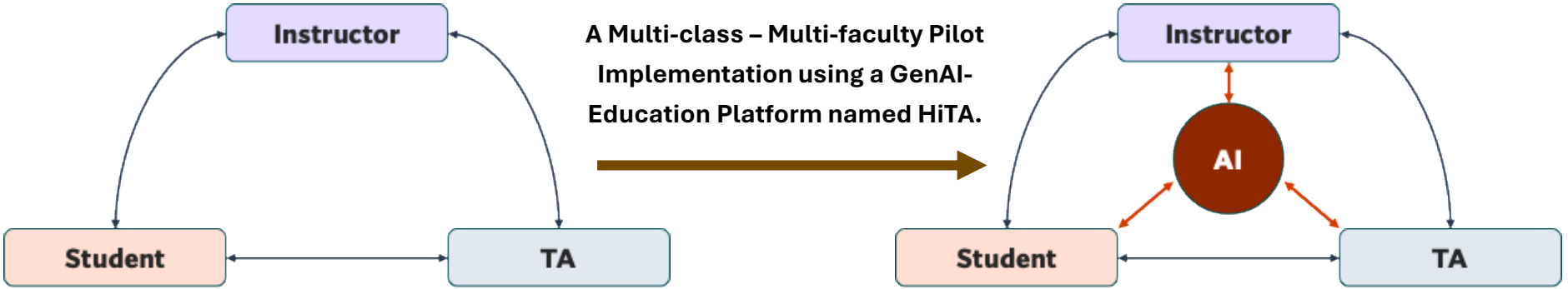
What if modern AI systems could help scale the most effective instructional practices, rather than replace them?



GenAI in Education
RMAIIG Sub-group for generative AI in education.



AI In The Classroom: Pilot Initiative



Experiences with the pilot

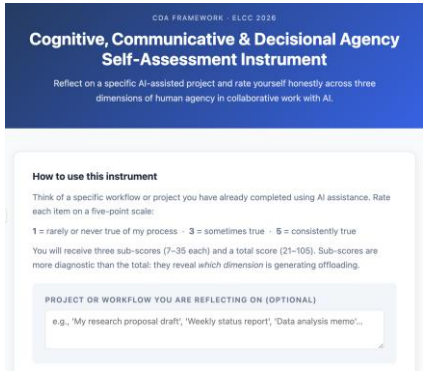
- **Students enthusiastic** *about using AI to learn*
- **ChatGPT usage:** *'just give me the answer' an issue*
- **Office hours:** *changed completely (low turnouts)*
- **HiTA: AI runs conversation analytics:** *gives valuable insights to incorporate into the class*
- **Detailed document/practices being curated!**

Thoughts from the pilot

- *How to design* **homeworks and assessment?**
- *Polishing the* **role played by the AI platform(s)**
- **Assess AI usage?** *– how to mimic 'show your work' in an AI usage context?*
- **Teaching with AI + Teaching to use AI** *(responsibly)*
- **AI still hallucinates:** *need to scaffold around it.*

Diane Sieber, Associate Professor
Herbst Program for Engineering, Ethics and Society
Director, Generative Futures Lab for AI

- **ENES 2000 AI, Writing and Inquiry**
- **ENES 3600 Future Ethics**
- **ENES 3843 How Not to be Replaced by AI**



Breakout # 1
AI impacts on Engineering Industries

- What are the interesting and impactful ways that your organization currently is using AI in your engineering workflows, products, and/or operation?
- How do you anticipate your organization's use of AI evolving over the next 3-5 years and what are the most important impacts this will have?

Breakout # 2
AI impacts on Engineering Education

- What are the main abilities you are currently looking for, and will be looking for in the future, in employees who will fill AI-related roles in your organization?
- What outcomes should CU engineering graduates have to be best prepared to join the engineering workforce in AI-related roles?

Workshop: Telling our Story—Advancing Engineering in CU Boulder's Campaign

Kristen Gallagher, Assistant Dean for Advancement

Katy Kotlarczyk, Vice Chancellor for Advancement

Joseph Baldwin, Managing Senior Director of Development

Katie Cohen, Senior Director, Campaign Planning & Strategy

Abby Dunn, Senior Director of Development

Amber Story, Senior Director of Development

April 17, 2026

Overview of CU Boulder's Comprehensive Campaign

University of Colorado Boulder

Introductions

Katy Herbert Kotlarczyk, EdD
Vice Chancellor for Advancement

Kristen Gallagher
Assistant Dean of Advancement
CEAS

Experience with Campaigns?

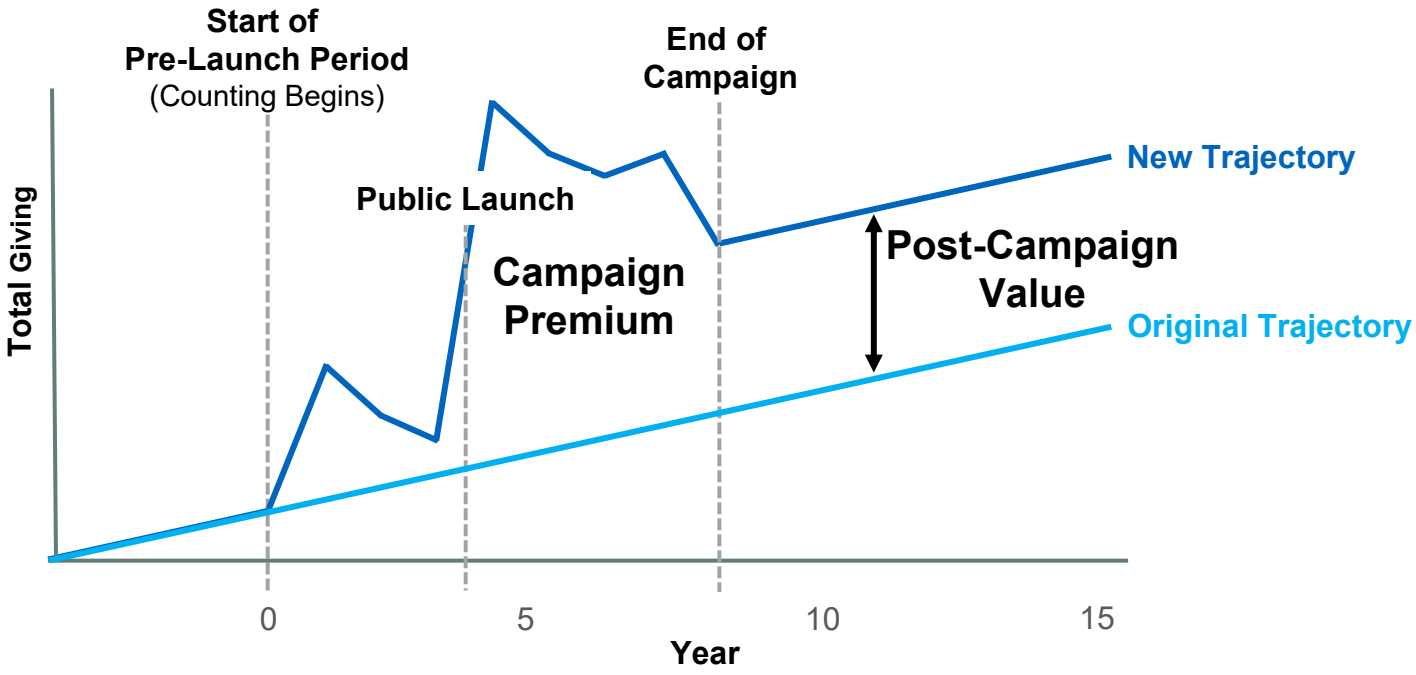
What a Campaign CAN Do

- Garner philanthropic support for a focused set of priorities
- Increase engagement amongst all constituents, including donors, alumni and volunteers
- Raise the profile of the university and answer the question “why CU Boulder?”
- Influence the timing and level of a philanthropic investment by framing the urgency and emphasizing the significance of the impact
- Increase the sophistication and long-term performance of Advancement, supporting sustainable expansion

What a Campaign CAN’T Do

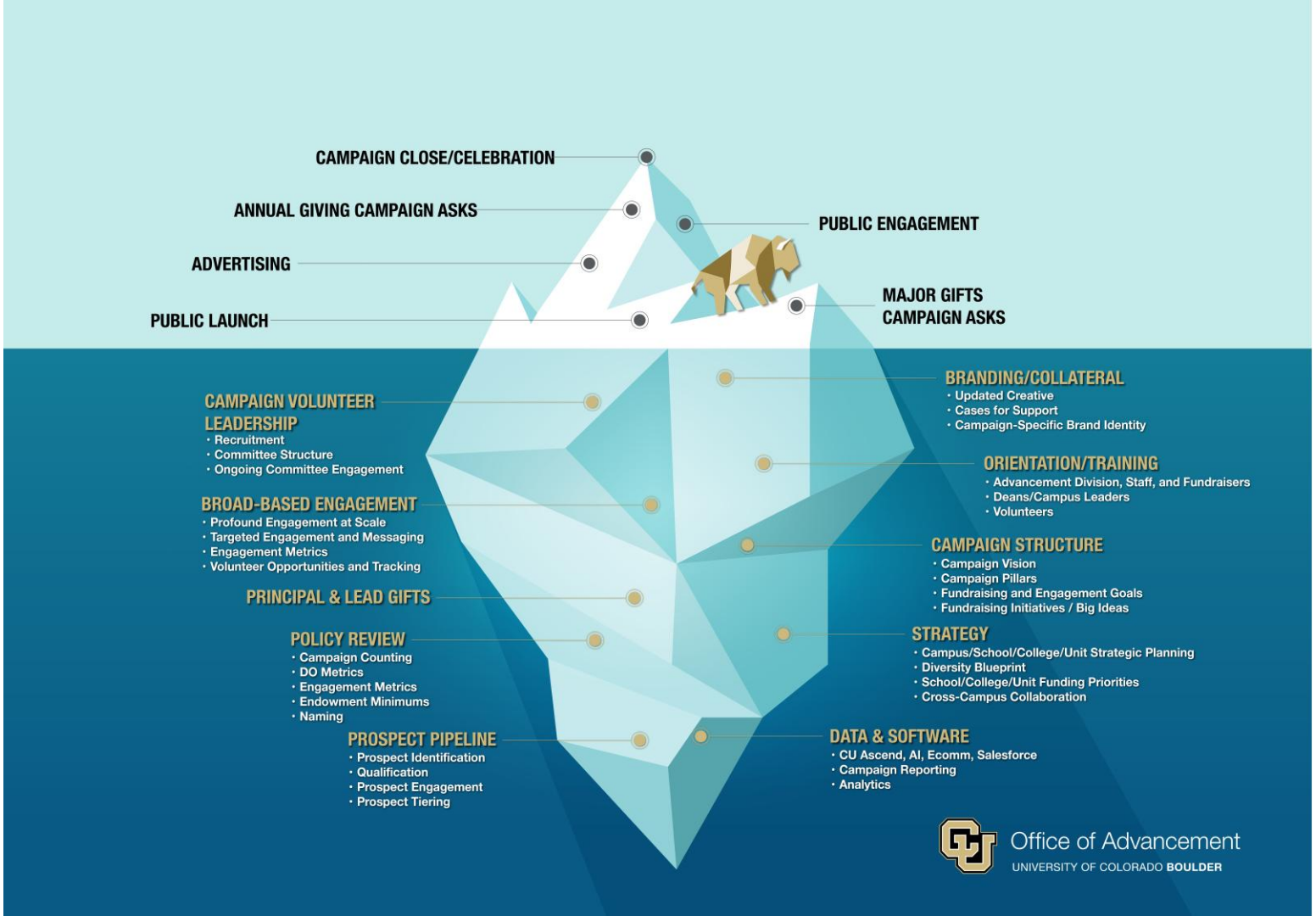
- Replace effective strategy and strategic planning
- Create prospect pools out of thin air
- Make the uninterested interested
- Provide significant funds quickly
- Substitute the fundamental process of fundraising and engagement of constituents

Post-Campaign Value



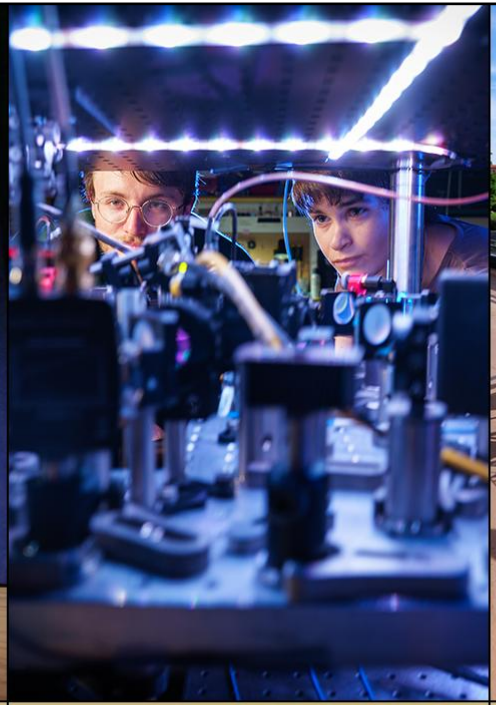
Where We Are Today

- Campaign counting began on July 1, 2024
- We are currently in the campaign’s pre-launch phase, sometimes referred to as the “quiet” or "leadership" phase
- The campaign is continuing to develop as our campus’ 150th – or sesquicentennial – celebration is underway
- The campaign tagline and creative look will be revealed later this year


CAMPAIGN CLOSE/CELEBRATION
ANNUAL GIVING CAMPAIGN ASKS
ADVERTISING
PUBLIC LAUNCH
PUBLIC ENGAGEMENT
MAJOR GIFTS CAMPAIGN ASKS
CAMPAIGN VOLUNTEER LEADERSHIP
• Recruitment
• Committee Structure
• Ongoing Committee Engagement
BROAD-BASED ENGAGEMENT
• Profound Engagement at Scale
• Targeted Engagement and Messaging
• Engagement Metrics
• Volunteer Opportunities and Tracking
PRINCIPAL & LEAD GIFTS
POLICY REVIEW
• Campaign Counting
• DO Metrics
• Engagement Metrics
• Endowment Minimums
• Naming
PROSPECT PIPELINE
• Prospect Identification
• Qualification
• Prospect Engagement
• Prospect Tiering
BRANDING/COLLATERAL
• Updated Creative
• Cases for Support
• Campaign-Specific Brand Identity
ORIENTATION/TRAINING
• Advancement Division, Staff, and Fundraisers
• Deans/Campus Leaders
• Volunteers
CAMPAIGN STRUCTURE
• Campaign Vision
• Campaign Pillars
• Fundraising and Engagement Goals
• Fundraising Initiatives / Big Ideas
STRATEGY
• Campus/School/College/Unit Strategic Planning
• Diversity Blueprint
• School/College/Unit Funding Priorities
• Cross-Campus Collaboration
DATA & SOFTWARE
• CU Ascend, AI, Ecomm, Salesforce
• Campaign Reporting
• Analytics
Office of Advancement
UNIVERSITY OF COLORADO BOULDER

Thematic Campaign Pillars

Empower Every Buff to Thrive



Advance Innovation That Matters

Lead a Sustainable Future for All

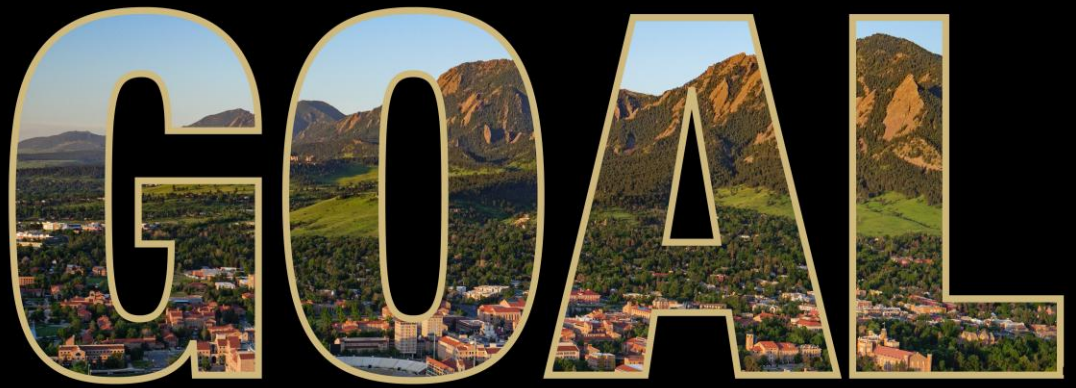
Make a Boulder Impact That Lasts

Interdisciplinary Fundraising Initiatives

We are developing transformational fundraising initiatives that address pressing needs and leverage CU Boulder's unique strengths to tackle interdisciplinary challenges.

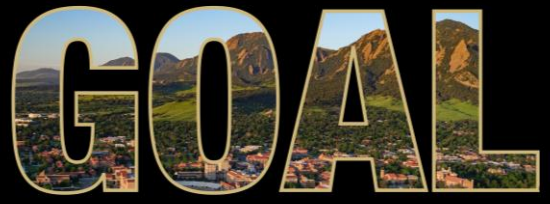
These initiatives are designed to drive philanthropic impact at a very large scale. The **Future of Quantum** and **CU Promise Scholars Housing Initiatives** have launched, **Boulder Climate Solutions** is underway, and additional initiatives are being assessed.

$1.75 BILLION



1.75 MILLION MOMENTS OF

$1.75 BILLION



1.75 MILLION

MOMENTS OF

CAMPAIGN PROGRESS

$421.2 MILLION

24.1%

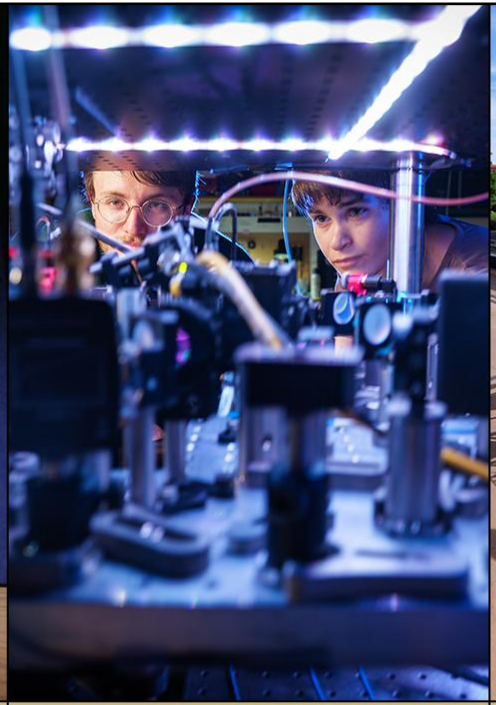
436,854

24.9%

* Campaign progress as of April 13, 2026.

Thematic Campaign Pillars

Empower Every Buff to Thrive



Advance Innovation That Matters

Lead a Sustainable Future for All

Make a Boulder Impact That Lasts

CAMPAIGN PILLARS & CEAS

Empower Every Buff to Thrive Ensuring talented students from all backgrounds have the access, belonging, and support to become tomorrow's leaders — engineers who reflect the full diversity of the world they'll serve.

Advance Innovation that Matters Accelerating discoveries that address the defining challenges of our time: climate change, quantum disruption, technological change, and the infrastructure failures communities cannot afford.

Lead a Sustainable Future for All Building the enduring capacity — faculty, facilities, programs — that enables CU Boulder to operate at humanity's pace for generations to come.

Make a Boulder Impact That Lasts Multiplying impact by connecting university breakthroughs to real-world deployment — through federal lab partnerships, industry collaboration, and the entrepreneurial ecosystem that makes Colorado a global hub.

CEAS doesn't just participate in the campaign — we demonstrate what's possible when engineering education fully leverages collaborative density no other engineering school possesses.

ENDOWED FACULTY POSITIONS
$100 MILLION+
Advance Innovation that Matters | Lead a Sustainable Future for All

- **Endowed Chairs | $3 Million+ each** The scholars whose names define a field — and whose presence signals to the world that CU Boulder competes at the highest level. Each chair anchors a research program that draws the next generation of great minds to Boulder.

- **Endowed Professorships | $1.5 Million+ each** The best time to recruit a rising star is before everyone else recognizes them. Endowed professorships give CEAS the ability to secure transformational talent at exactly that moment.

- **Faculty Fellows | $500,000+ each** Excellence doesn't begin at the top of a career. Faculty Fellows support exceptional teaching faculty and early-career researchers at the stage when investment matters most.

- **Faculty Excellence Fund | $20 Million**
  In a competitive talent market, speed is everything. The Faculty Excellence Fund gives CEAS the ability to act decisively — providing bridge funding, enabling strategic recruitment, and seizing opportunities before a competing institution does. This is the margin of excellence that keeps CU Boulder ahead.

LATTICE SCHOLARSHIP PROGRAM
$50 MILLION
Empower Every Buff to Thrive

- Today, 900+ qualified students — first-generation and Pell-eligible — compete for just 54 full-ride Lattice Scholarships: an 18:1 ratio between talent and opportunity. Unlike most scholarships, a Lattice award covers everything — tuition, housing, books, and fees — eliminating financial stress entirely so scholars can focus on becoming engineers. Permanently endowing 100 Lattice Scholarships annually nearly doubles that reach, creating generational change for 100 families every year in perpetuity.

- Lattice Scholars don't just survive CU Boulder — they thrive. Ninety-five percent advance to their second year, a retention rate that reflects what becomes possible when financial barriers are fully removed.

“Scholarships are essential to taking off stress during my education. My family cannot afford to pay for my college so I had to apply for a lot in order to get the most aid I possibly could. Having scholarships gives me additional drive to make sure I do well in my education so I do not lose them. Now, they allow me to study and live my life without having to stress about how I am going to pay next semester”.

SOCIETY OF WOMEN ENGINEERS (SWE) SCHOLARSHIP - $30 MILLION

Empower Every Buff to Thrive

- The SWE scholarship program supported 270 women engineering students in 2025 — funding national conference access, professional development, and the networks that accelerate careers. When SWE Scholars walk into a room with 15,000 women engineers, they come back transformed: not just with community, but with a sense of responsibility and the confidence to lead.

- Expanding to 600 recipients annually — permanently endowed — means more women identifying engineers with exactly that confidence, until the exception in our field becomes the rule.

"I walked away feeling seen, welcomed and reassured that I could belong here."
— Anika Mathur, SWE Treasurer & Community Impact Award Recipient, Electrical Engineering '26

HANDS-ON LEARNING

Empower Every Buff to Thrive | Make A Boulder Impact

CU Boulder pioneered hands-on engineering education, earning the National Academy of Engineering's Gordon Prize in 1990. Today's wicked problems demand we pioneer again — building infrastructure where breakthroughs become deployed solutions. This is infrastructure that serves the full CEAS curriculum — every student, every discipline, every year. For example, the Discovery Learning Center transforms 7,000 square feet of existing CEAS space into a purpose-built environment for exactly that: hands-on classrooms for up to 60 students, a fabrication workshop where ideas become prototypes, and computer labs designed for the CAD work that moves concepts into the real world.

These spaces will be the physical homes of CEAS's engineering philosophy:

- **Experiential Learning Studios** — Project-based spaces where students apply theory immediately, not after graduation
- **Student Society Hub** — Permanent home for 90+ engineering societies, from robotics teams to Engineers Without Borders chapters
- **Interdisciplinary Collision Spaces** — Designed encounters between engineering, business, design, and science students
- **Prototyping & Testing Facilities** — Professional-grade equipment accessible to undergraduates, with federal lab validation accessible within miles
- **Community Pipeline Programs** — Summer experiences in workforce development, machine learning, and hands-on engineering that bring high school students into the CEAS ecosystem before they ever enroll

It is not just a building. It is where undergraduates prototype with aerospace and defense partners — deploying innovations at speeds no traditional academic timeline allows.

Engineering Advisory Council Meeting

Spring 2026

Thank You!