Agenda

- Welcome
- State of the College
- Lattice Scholars™ Program
- Western Partnership Program
- Lunch with Chancellor DiStefano
- Signature Industry Partnerships
Welcome New EAC Members

Nomination Opportunities
• EAC Nominations (2/1)
• Alumni Nominations (11/15)
  • Distinguished Engineering Alumni Awards
  • Recent Alumni Award

Hari V. Krishnan
PropertyGuru Group

Johnathon Caldwell
Lockheed Martin

Robert Sawaya
Campos EPC
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
GOLD Board

Beth Myers and Chris Kohl, Co-Chairs
20 Current Board Members

Initiatives

• Virtual Mock Interviews
• Recent Alumni Award
• Ring & Pin Ceremony
• ProReady Partners
• Pilot Mentorship Program
• CU Engineering Donor
New College Leadership

Michael Gooseff  
Associate Dean for Research

Sriram Sankaranarayanan  
Associate Dean for Digital Education

Kristen Gallagher  
Assistant Dean for Advancement

Kevin Lobdell  
Deputy Assistant Dean for Advancement

Sean Humbert  
Robotics Program

Corey Neu  
Biomedical Engineering

Joseph Baldwin  
Sr. Director

Abby Dunn  
Sr. Director
Since our last EAC meeting…

Short-Term Task Group Work

• Completed Strategic Planning Process
• Launched Engineering Connections
• Launched Lattice Program

EAC Prep and Admin

• Filled EAC Executive Committee
• Published EAC Nomination Process
• Started Engineering-Leeds Working Group
State of the College
STRATEGIC VISION
Engineering sustainable solutions to improve the quality of life in our state, nation and world.

College of Engineering & Applied Science

STRATEGIC VISION

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

College of Engineering & Applied Science

STRATEGIC ACTIONS

Translate Innovation into Impact
- Develop an economic development economy
- Build a business incubator and support for student teams
- Increase the number of engineering graduates among minority groups
- Improve business and industry partnerships

Shape Tomorrow’s Leaders
- Increase the number of engineering graduates among minority groups
- Improve the retention rate of engineering students
- Enhance the unique contributions of all

College of Engineering & Applied Science

UNIVERSITY OF COLORADO BOULDER

State of the College

- Research & Innovation
- Education
- Inclusion
Research & Innovation

CEAS Research Award Funding History

<table>
<thead>
<tr>
<th>FY15</th>
<th>FY16</th>
<th>FY17</th>
<th>FY18</th>
<th>FY19</th>
<th>FY20</th>
<th>FY21</th>
<th>FY22</th>
<th>FY23</th>
</tr>
</thead>
<tbody>
<tr>
<td>$82,994,350</td>
<td>$72,130,400</td>
<td>$78,317,552</td>
<td>$97,959,349</td>
<td>$96,799,335</td>
<td>$118,851,107</td>
<td>$150,611,020</td>
<td>$131,052,723</td>
<td>$130,302,576</td>
</tr>
</tbody>
</table>

CEF Awards

TTBE Awards

NSF, 23%

DOE, 10%

Industry, 11%

Other Federal, 12%

NASA, 14%

DOD, 14%

NIH, 6%

State and Local, 5%

Foundations and Other, 6%
Research & Innovation
Anticipating the future and shaping the world

• Aerospace and Defense
• Quantum Engineering
• Microelectronics
Research & Innovation
Anticipating the future and shaping the world

Engineering Education and AI-Augmented Learning Interdisciplinary Research Theme

• Catalyze new research collaborations
• Enhance the reputation
• Grow infrastructure and research capacity
• Compete for ‘center-scale’ research grants
Research & Innovation

Anticipating the future and shaping the world

$20M NSF National AI Institute for Student-AI Teaming
Research & Innovation
Anticipating the future and shaping the world
Research & Innovation

- GET INSPIRED
- IDEA
- BUILD IT
- VALIDATE
- SCALE
- START A COMPANY
Research & Innovation

150+ Active CU Companies

$21B Exits Since 2004

colorado.edu/engineering/entrepreneurship
State of the College

✓ Research & Innovation
• Education
• Inclusion
Education

Undergraduate Profile

• 6,068 Students
• 41% Female in first-year class
  • #1 of 167 public engineering colleges
• 18% URM undergraduate students
  • Percent more than doubled in past 10 years
• 89% 2nd fall retention
  • Highest on record and trending up
Lattice Scholars™ Program
Debt-Free First-Generation Education

Closing the gap
• 100% cost of attendance Pell eligible, first generation, state of CO students

Programming
• Money, Math, Mattering

Special thanks to EAC donors
• Dana and Juliana Andersen
• Paul and Chresta Brinkman
• Marco Campos
• Dale and Patricia Hatfield
• Kile and Judy Morgan
• Cliff and Carol Pearson
• Ann Smead and Michael Byram
• Kiewit Corporation
Engineering Connections

Engineering Residential Community for All First-Year Students
Engineering Connections – By the numbers

998 Students in Engineering Connections
123 Volunteers at Engineering Launch
49 First-Year Seminars
23 Major Dinners
14 Meet Your Major Sessions
13 Special Interest Sessions
7 Academic Interest Groups

colorado.edu/engineering/connections
Engineering Connections

First-Year Seminar

• 5-week, 1-credit course

• Invites students to be part of a community of peers wrestling with what it means to be a university scholar

Who am I?
Who tells my story and what does it mean to be the author of my story and a co-author of our story?
## Undergraduate Education

CU Engineering students are more ProReady!

<table>
<thead>
<tr>
<th></th>
<th>2018-19</th>
<th>2022-23</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undergraduate Internship</td>
<td>43%</td>
<td>65%</td>
<td>22%</td>
</tr>
<tr>
<td>Undergraduate Research</td>
<td>23%</td>
<td>34%</td>
<td>11%</td>
</tr>
<tr>
<td>Study Abroad</td>
<td>156</td>
<td>196</td>
<td>20%</td>
</tr>
<tr>
<td>Job, grad school, military: upon graduation</td>
<td>59%</td>
<td>72%</td>
<td>13%</td>
</tr>
<tr>
<td>Job, grad school, military: 6 mo post graduation</td>
<td>93%</td>
<td>95%</td>
<td>2%</td>
</tr>
<tr>
<td>Starting salary (average)</td>
<td>$72K</td>
<td>$80-85K</td>
<td>11-18%</td>
</tr>
</tbody>
</table>

CEAS Senior Survey, 18-19 to 22-23
Graduate Education

Graduate Profile

• 1,315 MS Students
  • -15% from COVID peak
• 1,028 PhD Students
  • 220 in fall 23 (40% women)
  • 28 NSF Grad Fellowship Awards in fall 23
Digital Education

Growing our Coursera Offerings

• Electrical Engineering
• Data Science
• Applied Computer Science
• Engineering Management
State of the College
✓ Research & Innovation
✓ Education
• Inclusion
Inclusion

Choose to Challenge: Stories of Progress

Engineering Leaders

Inspiring the next generation

University of Colorado Boulder
Inclusion

NSF Career Winners
• ’23 – 8 awards
• ’22 – 6 awards
• ’21 – 12 awards
• 100+ in College

NAE Members
• ’22 – Brian Argrow
• ’22 – Zoya Popovic
• ’21 – Chris Bowman
• 10 Current members
Agenda

✓ Welcome
✓ State of the College
  • Lattice Scholars™ Program
  • Western Partnership Program
  • Lunch with Chancellor DiStefano
  • Signature Industry Partnerships
Lattice Scholars™ Update
# Fall 2023 First Year Enrollment

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First-year Total</strong></td>
<td>851</td>
<td>924</td>
<td>945</td>
<td>1197</td>
<td>1028</td>
<td>1084</td>
<td>1112</td>
</tr>
<tr>
<td><strong>% Women</strong></td>
<td>38%</td>
<td>40%</td>
<td>45%</td>
<td>32%</td>
<td>32%</td>
<td>40%</td>
<td>41%</td>
</tr>
<tr>
<td><strong>% URM</strong></td>
<td>21%</td>
<td>18%</td>
<td>24%</td>
<td>17%</td>
<td>21%</td>
<td>19%</td>
<td>18%</td>
</tr>
<tr>
<td><strong>Avg. HS GPA</strong></td>
<td>3.93</td>
<td>3.91</td>
<td>3.91</td>
<td>3.90</td>
<td>3.92</td>
<td>3.94</td>
<td>3.95</td>
</tr>
<tr>
<td><strong>Avg. SAT Total</strong></td>
<td>1359</td>
<td>1368</td>
<td>1363</td>
<td>1340</td>
<td>1374</td>
<td>1363</td>
<td>1370</td>
</tr>
</tbody>
</table>
2027 Lattice Cohort

- 60 students
- 50% URM, 35% Female
- 49 students from Denver Metro, 8 from Southern Colorado, 3 from Western Slope
- Majority living in Engineering Connections
Funding for Lattice Scholars™ Program

- 100% cost of attendance for a Pell eligible, first generation, resident students
- $7,500 average unmet need per student per year
  - Ranges from $200-$20,000
- Increase in applications, publicity
  - Variable cohort sizes & cost for future years
  - 60-120+ students, $2.8 - 4.2MM/ cohort
<table>
<thead>
<tr>
<th>Money: address financial barriers and career development</th>
<th>Mattering: increase sense of belonging and social capital</th>
<th>Math/Academics: foundational support and through periods of “academic shock”</th>
</tr>
</thead>
<tbody>
<tr>
<td>1:1 financial support and on-going audit of bills</td>
<td>Participation in a student club or organization</td>
<td>Specialized academic coaching early in the semester</td>
</tr>
<tr>
<td>Training with ProReady throughout education</td>
<td></td>
<td>Course alerts and interventions</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Leverage existing campus workshops and events</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monthly seminar workshops with Lattice cohort and team</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Classroom and academic capital support with faculty advisor</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Spring retreat</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Small group peer mentoring with financial wellness curriculum</td>
<td></td>
</tr>
</tbody>
</table>
Niko Ortega – Lattice Mentor
Aerospace Engineering Junior
Hometown: Denver, Colorado

Lattice Impact: A First-Gen Student Story

Our Past
The influences that we have absorbed along the way

Our Present
The community and world we have to navigate on day-to-day basis

Our Future
The dreams we hope to write the rest of our stories with
Questions?
Overview

- WCU-CU Boulder Partnership Program Overview
- Exploring New Engineering Partnership Programs
WCU-CU Boulder Partnership Program Overview
About the Partnership

1\textsuperscript{st} & 2\textsuperscript{nd} Year:
Enrolled as Western students

Physics
Applied Physics/Pre-Engineering
Computer Science-Scientific Computing

3\textsuperscript{rd} & 4\textsuperscript{th} Year:
Enrolled as CU Boulder students

University of Colorado Boulder
Mechanical Engineering
Computer Science

Live in Gunnison the entire time!
Best of Both Worlds

• Delivering top-20 CU engineering programs in rural Colorado
• Small class sizes & student-to-faculty ratios
• Incredible location & community integration
• Collaborative elective options, Honors Program participation, minors, certificates & study abroad opportunities
• Project-based, industry-focused, hands-on, experiential education
• Focus areas in robotics, product design, outdoor industry engineering, engineering management, aerospace, and biomedical
• ABET accreditation
• Alignment with both Western and CEAS Strategic Plans
## Current Enrollment Totals by Year

<table>
<thead>
<tr>
<th>Year</th>
<th>Fall 2019</th>
<th>Fall 2020</th>
<th>Fall 2021</th>
<th>Fall 2022</th>
<th>Fall 2023</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Year</td>
<td>43</td>
<td>67</td>
<td>78</td>
<td>88</td>
<td>71</td>
</tr>
<tr>
<td>Sophomore</td>
<td>29</td>
<td>52</td>
<td>53</td>
<td>66</td>
<td></td>
</tr>
<tr>
<td>Junior</td>
<td>22</td>
<td>33</td>
<td>38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Senior</td>
<td></td>
<td>19</td>
<td>27</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5th yr Senior</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>TOTAL</td>
<td>43</td>
<td>96</td>
<td>152</td>
<td>193</td>
<td>207</td>
</tr>
</tbody>
</table>

---

## Current Western-CU Boulder Partnership Program Student Data – Fall 2023 (as of 9/1/23)

<table>
<thead>
<tr>
<th>Program</th>
<th>Current Students</th>
<th>URM*</th>
<th>% URM</th>
<th>Female</th>
<th>% Female</th>
<th>First Gen**</th>
<th>%First Gen</th>
<th>% Resident</th>
<th>% Non-Resident</th>
<th>Average HS GPA</th>
<th>Rady Scholarship Recipients</th>
<th>% Rady Scholarship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mechanical Engineering</td>
<td>171</td>
<td>28</td>
<td>16%</td>
<td>24</td>
<td>14%</td>
<td>53</td>
<td>31%</td>
<td>119</td>
<td>70%</td>
<td>51</td>
<td>30%</td>
<td>69</td>
</tr>
<tr>
<td>Computer Science</td>
<td>36</td>
<td>8</td>
<td>22%</td>
<td>7</td>
<td>19%</td>
<td>8</td>
<td>22%</td>
<td>29</td>
<td>80%</td>
<td>7</td>
<td>19%</td>
<td>14</td>
</tr>
<tr>
<td>Total</td>
<td>207</td>
<td>36</td>
<td>17%</td>
<td>31</td>
<td>15%</td>
<td>61</td>
<td>30%</td>
<td>148</td>
<td>72%</td>
<td>58</td>
<td>28%</td>
<td>83</td>
</tr>
</tbody>
</table>

*URM data is pulled from the Race and Ethnicity fields in Banner (self-reported by students)

**First Generation data is pulled from the First Gen field in Banner (self-reported by students)
Student Success

• 95% of graduating students have signed contracts for employment or graduate school*

• $78,000 is the average starting salary of partnership students**

• 5% of graduating students accepted into graduate programs

• 90%+ internship rate for Juniors and graduating Seniors

• 13 industry sponsored projects & 5 sponsored capstone projects in Sp 2023

* Standard job placement statistic is measured 6 months after graduation
** Colorado School of Mines ME graduate pay within 6 months after graduation is $72,300
** CU Boulder CS graduate pay average is $80,500 and 92% placement after 6 months
Partnership Program Opportunities

- Community Partnerships
- Undergrad Summer Research Program
- Innovative curricular programming

Summer Research Program

Rady Middle School Engineering Academy

Donated Adaptive Gravel Bike
Program Distinctions

- **Curriculum**
  - Electives, Emphasis Areas, Minors, Certificates
  - Unique programming: Robotics and human centered computing

- **Student retention**
  - Lambda Learning Center, scholarships, professional development

- **Marketing & recruitment**
  - Rural communities, target specific demographics, unique marketing
  - 70% retention for the partnership program

- **Summer programming**
  - Rady Engineering Academy (6-8th grade), community workshops, undergraduate research

- **Scholarship**
  - Total CU Scholarship awarded: $345k/year
  - Total Rady Merit awarded: $400k/year
  - Total donor and industry sponsored scholarship: $40k/year
Exploring New Engineering Partnership Programs
Up to now...

- November 1st meeting recap
- Feasibility study and socializing
- Exploring course equivalencies and degree plans/flowcharts
- Meet with ASEN and BSME in the spring to discuss curriculum and curriculum updates
New Engineering Partnership Programs: Predicted Student Numbers

Predicted capacity and growth potential of engineering partnership programs starting Fall 2026.

<table>
<thead>
<tr>
<th></th>
<th>1st year (2025)</th>
<th>2nd year</th>
<th>3rd year</th>
<th>4th and 5th year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aerospace</td>
<td>45-50</td>
<td>30-33</td>
<td>21-22</td>
<td>21-22</td>
</tr>
<tr>
<td>Biomedical</td>
<td>25-30</td>
<td>18-22</td>
<td>15-17</td>
<td>15-17</td>
</tr>
<tr>
<td>Computer Science</td>
<td>20-25</td>
<td>13-17</td>
<td>10-12</td>
<td>10-12</td>
</tr>
<tr>
<td>Mechanical</td>
<td>45-50</td>
<td>30-33</td>
<td>21-22</td>
<td>21-22</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>135-155</strong></td>
<td><strong>91-105</strong></td>
<td><strong>67-73</strong></td>
<td><strong>67-73</strong></td>
</tr>
</tbody>
</table>

Total = 345–391 students

*1st-2nd (66% retention) year and 2nd-3rd (68% retention) year and 3rd – 4th (100% retention) year, assuming a % from 1st year to 4th year based on average retention rates from 2021-2023.*
We welcome you to visit!
Discussion & Questions
Agenda

✓ Welcome
✓ State of the College
✓ Lattice Scholars™ Program
✓ Western Partnership Program
  • Lunch with Chancellor DiStefano
  • Signature Industry Partnerships
Signature Industry Partnerships

• Question – What would make CU Engineering your #1 academic partner?

• Breakout Goal – Explore high-value university-industry engagement activities

• Outcome – A framework for defining and measuring signature industry partnerships
Signature Industry Partnerships

World Café Discussion

In Assigned Groups

• Explore questions that matter
• Encourage everyone’s contributions
• Connect diverse perspectives
• Listen together for insights

Debrief by sharing collective discoveries
Agenda

✓ Welcome
✓ State of the College
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✓ Lunch with Chancellor DiStefano
✓ Signature Industry Partnerships

• Next Meeting – April 26, 2024
• Theme – Measuring our Progress

November 3, 2023