Vision for Excellence:

- World leader in engineering research and education
- Inclusive excellence
- Engineering for global society
- Active, discovery-based learning

I hear . . . I forget
I see . . . I remember
I do . . . I understand

Confucius, c 500BC
CU Engineering by the Numbers – Fall 2014

6 Departments
  267 full-time faculty

3988 Undergraduates
  +41% in past 8 years

938 Female undergraduates
  +88% in past 8 years

454 URM undergraduates
  +121% in past 8 years

19 Boettcher scholars
  (in past 2 years)

1666 Graduate students
  +42% in past 8 years

$72M Research grant awards
  +109% in past 8 years

8000 students expected by 2020
Measures of Excellence

Do you know that . . .

1. CU-Boulder has the **top-ranked engineering program** in the Mountain Time Zone?

2. **Engineers Without Borders – U.S.A.** was started by CU Professor Bernard Amadei?

3. CU won the first two **National Solar Decathlons**?

4. CU-Boulder is near the top in the nation for **Peace Corps** volunteers?

5. CU-Boulder is the only school to win the National Academy of Engineering’s **Gordon Prize** for Educational Innovation **twice**?
Dean’s Cabinet

Rob Davis
Dean

Scott Palo
Assoc Dean Research

Diane Sieber
Assoc Dean Educ

Anne Shoup
Asst Dean Advancement

Sarah Miller
Asst Dean Incl Excel

Keith Molenaar
Assoc Dean Grad Programs

Doug Smith
Asst Dean Prog & Engage

Mary Steiner
Asst Dean Students

JoAnn Zelasko
Asst Dean Admin

University of Colorado Boulder

www.colorado.edu/engineering/about/leadership
Innovative Educational Programs

• Integrated Teaching & Learning
• First-year Engineering Projects
• BOLD Center & GoldShirt Program
• CO Space Grant Consortium
• Engineering Excellence Fund
• Engineering Honors Program
• Herbst Humanities Program
• Certificates & minors in BME, Energy, Engineering Management, International Engineering, Leadership & more
• Earn-learn & Discovery-learning Apprenticeships

Emphasis on interdisciplinary and team-based learning
Engineering Research Excellence

1. Aerospace Science & Engineering
2. Bioengineering & Biotechnology
3. Computational Science & Engineering
4. Energy & Environmental Sustainability
5. Materials Science & Engineering

Grant Funding Sources FY15

- NSF 30%
- NASA 10%
- Dept. of Energy 9%
- HHS(NIH) 8%
- Other Federal 12%
- Industry 7%
- Foundation & Other 13%
- State & Local Gov't 1%
- Dept. of Defense 10%

$83M

Federal, industry & university partners
### Department Comparisons - 2014

Substantial variations by department (and over time)

**Input Data:**

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<th>Dept</th>
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<th>Fac</th>
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**Normalized Data:**

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Substantial variations by department (and over time)
College Budget Sources

FY15 Source Funds: $137M

- Grant Funds, 52.94%
- Tuition & Fees, 26.85%
- Grant Funds, 52.94%
- Indirect Cost from Grants, 4.21%
- Auxiliary Funds, 6.35%
- Gift Funds, 6.77%
- State Appropriated Funds, 2.89%

AY15-16 Res Ugrad Tuition: $12,312 (+2.2% in 1 yr)
AY15-16 Nonres Ugrad Tuition: $35,082 (+3.0% in 1 yr)

47% freshmen, 38% ugrads are nonresidents
Engineering Growth: Strategic Plan Refresh

Key Changes Since 2008:
• Recession & Recovery
• Resurgence in Engineering
• Improved Rankings
• Technology & Communications

Major Goals by 2020:
• Doubled enrollments
• Top-20 rankings
Our Core Values Have Not Changed

**Vision:**
Our vision is to be a recognized world leader for innovation and excellence in engineering education and research.

**Core Values:**
- Global Society
- Active Learning
- Inclusive Excellence

Strong focus on innovation and excellence
## Progress & Plans for People

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<td>3972</td>
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<tr>
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<td>23%</td>
<td>24%</td>
<td>33%</td>
<td>20%</td>
<td>21%</td>
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<tr>
<td>% URMs</td>
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<td>10%</td>
<td>12%</td>
<td>16%</td>
<td>11%</td>
<td>11%</td>
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<tr>
<td>% International</td>
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<td>6.0%</td>
<td>9.0%</td>
<td>15%</td>
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<td>30.0</td>
<td>30.5</td>
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<td>3rd-sem retention</td>
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<td>86%</td>
<td>84%</td>
<td>90%</td>
<td>80%</td>
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<td>6-yr grad rate</td>
<td>54%</td>
<td>60%</td>
<td>60%</td>
<td>70%</td>
<td>55%</td>
<td>55%</td>
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<tr>
<td># Master's</td>
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<td>904</td>
<td>953</td>
<td>1300</td>
<td>866</td>
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<td># Ph.D.</td>
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<td>710</td>
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<td>910</td>
<td>1392</td>
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<td>33%</td>
<td>32%</td>
<td>33%</td>
<td>40%</td>
<td>52%</td>
<td>46%</td>
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<td>163</td>
<td>179</td>
<td>280</td>
<td>243</td>
<td>269</td>
</tr>
<tr>
<td>% Women</td>
<td>15%</td>
<td>18%</td>
<td>19%</td>
<td>25%</td>
<td>14%</td>
<td>14%</td>
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<td># Instructional fac</td>
<td>25</td>
<td>33</td>
<td>61</td>
<td>55</td>
<td>26</td>
<td>12</td>
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</table>
Progress and Plans for Places

Biotechnology Building
- Opened 2012
- Add 5th wing 2016

Fleming Building
- Office/lab space 2010
- Idea Forge 2014

Sustainable Energy & Environment Complex
- Construction complete 2015
- RASEI & Environmental Engineering

Aerospace Building
- Design 2016
Progress and Plans for Programs

**BOLD/GoldShirt** – Started 2009
**Engineering Honors** – Tripled 2007-2014
**Engineering Leadership** – Launched 2011
**ATLAS Institute** – Joined us 2013

**Mortenson Center in EDC** – Founded 2009
**New Degree Programs** – 8 started 2010-2015
**Residential Acad. Prog.** – 3 launched 2009-2013

Joint Programs with A&S, Business

High level of educational innovation & enrichment
More Progress and Plans for Programs

**Aerospace** – Aerospace Ventures 2013, Grand Challenge 2015

**Biotechnology** – BioFrontiers Institute approved 2011

**Energy & Environmental Sustainability** – RASEI formed 2010

**Materials Science & Engineering** – Program started 2010

CU Engineering took lead roles in campus initiatives
### Progress on Strategic Plan - Funding

<table>
<thead>
<tr>
<th>Metric</th>
<th>2006-07 baseline</th>
<th>2014-15 results</th>
<th>2020-21 target</th>
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<tr>
<td>CU engineering general fund</td>
<td>$28 M</td>
<td>$46 M</td>
<td>$75 M</td>
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<tr>
<td>Engineering scholarships</td>
<td>$1.2 M</td>
<td>$3.4 M</td>
<td>$5.5 M</td>
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<tr>
<td># Endowed chairs &amp; profs</td>
<td>23</td>
<td>32</td>
<td>50</td>
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<tr>
<td>College endowment</td>
<td>$85 M</td>
<td>$124 M</td>
<td>$180 M</td>
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<tr>
<td>New research awards</td>
<td>$40 M</td>
<td>$83 M</td>
<td>$135 M</td>
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Rapid growth in research awards, but slowing.
Excellence in Research and Education

As new faculty, your innovation and dedication are needed to achieve our vision as a world leader in engineering research and education.