College Progress on Strategic Plan

Presentation to the CU-Boulder Engineering Advisory Council on 10/24/2014 by Robert H. Davis, Dean

Presentation Outline:

• People
• Places
• Programs
• Resources

A FRESH LOOK AT Engineering 2020: Vision for Excellence

DECEMBER 2013
www.colorado.edu/engineering/2020

College of Engineering & Applied Science
UNIVERSITY OF COLORADO BOULDER

Be Boulder.
# Undergraduate Students

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<tbody>
<tr>
<td>B.S enrolled</td>
<td>2819</td>
<td>3087</td>
<td>3070</td>
<td>3382</td>
<td>3657</td>
<td><strong>3972</strong></td>
<td>9%</td>
<td>41%</td>
</tr>
<tr>
<td># women</td>
<td>498</td>
<td>611</td>
<td>639</td>
<td>765</td>
<td>875</td>
<td><strong>934</strong></td>
<td>7%</td>
<td>88%</td>
</tr>
<tr>
<td># URM</td>
<td>205</td>
<td>244</td>
<td>277</td>
<td>347</td>
<td>421</td>
<td><strong>472</strong></td>
<td>12%</td>
<td>130%</td>
</tr>
<tr>
<td># internat.</td>
<td>75</td>
<td>73</td>
<td>92</td>
<td>203</td>
<td>265</td>
<td><strong>335</strong></td>
<td>26%</td>
<td>347%</td>
</tr>
<tr>
<td># applied</td>
<td>2679</td>
<td>3726</td>
<td>3664</td>
<td>4670</td>
<td>5249</td>
<td><strong>6938</strong></td>
<td>32%</td>
<td>159%</td>
</tr>
<tr>
<td># entered</td>
<td>654</td>
<td>758</td>
<td>715</td>
<td>778</td>
<td>838</td>
<td><strong>909</strong></td>
<td>8%</td>
<td>39%</td>
</tr>
<tr>
<td># women</td>
<td>126</td>
<td>153</td>
<td>172</td>
<td>177</td>
<td>232</td>
<td><strong>243</strong></td>
<td>5%</td>
<td>93%</td>
</tr>
<tr>
<td># URM</td>
<td>49</td>
<td>54</td>
<td>93</td>
<td>103</td>
<td>115</td>
<td><strong>127</strong></td>
<td>10%</td>
<td>159%</td>
</tr>
<tr>
<td># internat.</td>
<td>15</td>
<td>10</td>
<td>13</td>
<td>45</td>
<td>66</td>
<td><strong>80</strong></td>
<td>21%</td>
<td>433%</td>
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<tr>
<td>Avg. Comp. ACT</td>
<td>27.8</td>
<td>28.3</td>
<td>28.5</td>
<td>29.1</td>
<td>29.6</td>
<td><strong>30.0</strong></td>
<td>0.4</td>
<td>2.2</td>
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**Highlights:**
- 2.6-fold increase in applications & 41% increase in enrollments
- Women, underrep. minority & internat. increased 2.1x, 3.2x & 8.5x faster than average
- ACT composite (30.0) compares well to A&S (26.0), peer schools (28.6) & asp. schools (30.3)
Undergraduate Retention & Graduation Rates

<table>
<thead>
<tr>
<th>Year</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enrolled 2nd Fall</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engineering</td>
<td>79%</td>
<td>79%</td>
<td>79%</td>
<td>84%</td>
<td>86%</td>
<td>85%</td>
<td>84%</td>
</tr>
<tr>
<td>CU-Boulder</td>
<td>88%</td>
<td>87%</td>
<td>89%</td>
<td>90%</td>
<td>90%</td>
<td>91%</td>
<td>92%</td>
</tr>
<tr>
<td>Campus Avg</td>
<td>84%</td>
<td>83%</td>
<td>85%</td>
<td>84%</td>
<td>83%</td>
<td>85%</td>
<td>84%</td>
</tr>
<tr>
<td>Graduated 6th Sum.</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engineering</td>
<td>54%</td>
<td>56%</td>
<td>58%</td>
<td>57%</td>
<td>60%</td>
<td>61%</td>
<td>60%</td>
</tr>
<tr>
<td>CU-Boulder</td>
<td>71%</td>
<td>72%</td>
<td>74%</td>
<td>72%</td>
<td>75%</td>
<td>77%</td>
<td>75%</td>
</tr>
<tr>
<td>Campus Avg</td>
<td>67%</td>
<td>67%</td>
<td>68%</td>
<td>68%</td>
<td>68%</td>
<td>70%</td>
<td>70%</td>
</tr>
</tbody>
</table>

Fraction of engineering graduates who graduated in 4 yrs: 50%
Fraction of engineering graduates who graduated in 5 yrs: 93%

Key Strategies:
- **Academic support**: math placement & workgroups, tutoring, advising
- **Community**: residential programs (664 Engr), projects courses (907 Engr & 210 PREN)
- **Recruiting**: improved student preparation
## Graduate Students

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<tr>
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<tbody>
<tr>
<td>M.S enrolled</td>
<td>675</td>
<td>704</td>
<td>923</td>
<td>904</td>
<td>919</td>
<td>953</td>
<td>4%</td>
<td>41%</td>
</tr>
<tr>
<td>Ph.D. enrolled</td>
<td>497</td>
<td>537</td>
<td>632</td>
<td>701</td>
<td>704</td>
<td>710</td>
<td>1%</td>
<td>43%</td>
</tr>
<tr>
<td># women</td>
<td>23%</td>
<td>21%</td>
<td>21%</td>
<td>24%</td>
<td>24%</td>
<td>24%</td>
<td>0%</td>
<td>1%</td>
</tr>
<tr>
<td># URM</td>
<td>5.5%</td>
<td>4.8%</td>
<td>4.6%</td>
<td>5.0%</td>
<td>6.2%</td>
<td>6.4%</td>
<td>0.2%</td>
<td>0.9%</td>
</tr>
<tr>
<td># internat.</td>
<td>27%</td>
<td>34%</td>
<td>30%</td>
<td>32%</td>
<td>32%</td>
<td>33%</td>
<td>1%</td>
<td>6%</td>
</tr>
<tr>
<td># applied</td>
<td>1477</td>
<td>1728</td>
<td>2404</td>
<td>2959</td>
<td>3075</td>
<td>3393</td>
<td>10%</td>
<td>130%</td>
</tr>
<tr>
<td># MS/ME enr.</td>
<td>215</td>
<td>207</td>
<td>265</td>
<td>269</td>
<td>274</td>
<td>358</td>
<td>31%</td>
<td>67%</td>
</tr>
<tr>
<td># Ph.D. enr</td>
<td>102</td>
<td>112</td>
<td>136</td>
<td>117</td>
<td>114</td>
<td>138</td>
<td>21%</td>
<td>35%</td>
</tr>
</tbody>
</table>

### Highlights:
- 2.1-fold increase in applications & 42% increase in enrollments
- Quality (not shown) & diversity measures about steady
- Associate Dean for Graduate Programs planned
Buildings and Facilities

Idea Forge
- Soft opening 9/2014

Biotechnology Building
- Teaching space 11/2014
- 5th wing 12/2016

Sust. Energy & Env. Complex
- Offices 5/2015
- Labs 1/2016

Aerospace Building
- Pending state/private funding
- Design could start 2015 or 2016

Engineering Center
- ECES selected for renovation
- Project could start 2015

Shared Research Facilities
- Nanomaterials fab & charact
Programs

BA in CS
- 457 enrolled

Catalyze CU-Boulder
- Launched 2014

Engr Leadership Program
- 154 students, 71 new
- 3.55 avg GPA
- Expanded course offerings

General Engineering Plus
- 42 students, 27 new

Pre-Engineering Program
- 523 new in 2013, 620 in 2014
- 92 admitted to ENGR, so far
- 233 discontinued due to performance

Residential Academic Programs
FY07 baseline general-fund budget: $28M

Additional general-fund budget requested: $27M

117 Tenure-line faculty: $11.7M
30 Instructional faculty: $2.1M
62 Support staff: $3.4M
120 Teaching assistants: $3.6M
500 Student scholarships: $2.0M

Materials, hourly, etc: $4.2M

Status: $6M rec’d to-date, $4M next year, rest spread over next 6 years

Additional, one-time funding for faculty startup requested

Be persistent.
Resources - External

Grant Funding

FY14: $72.8M (2\textsuperscript{nd} highest); FY21 goal: $135M

Gift Funding

FY14: $8.5M (2\textsuperscript{nd} highest); FY14-FY21 goal: $150M

People

- Faculty: $21M
- Grad Students: $20M
- Undergraduates: $25M

Places

- Aerospace Building: $35M
- Biotech Building: $15M
- Engineering Center: $5M
- Idea Forge: $2M
- SEEC: $18M

Be generous.