Joint Meeting of the ISU/DMACC Internal Advisory Boards

May 23, 2011

Grant No. 0653236, July 2007–July 2012
Agenda

Welcome and Introductions

Highlights of Recent Activities

SEEC Effect Data
  • Summary
  • Discussion

Year 5 Planning and Project Sustainability
  • Activities and priorities
  • Discussion
Overall Grant Goal

Increase College of Engineering graduates to 900, by approximately 100 per year. Included with this goal are increases in the number of pre-engineering students at DMACC and in the percentages of women and minority students in engineering at ISU and DMACC.
CoE Total Enrollment and Graduates

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Students</th>
<th>New (first-year and transfer) Students</th>
<th>Total Graduates</th>
</tr>
</thead>
<tbody>
<tr>
<td>06-07</td>
<td>4445</td>
<td>1320</td>
<td></td>
</tr>
<tr>
<td>07-08</td>
<td>4608</td>
<td>1423</td>
<td></td>
</tr>
<tr>
<td>08-09</td>
<td>4717</td>
<td>1469</td>
<td></td>
</tr>
<tr>
<td>09-10</td>
<td>5086</td>
<td>1575</td>
<td></td>
</tr>
<tr>
<td>10-11</td>
<td></td>
<td>1758</td>
<td>5514</td>
</tr>
<tr>
<td>11-12</td>
<td></td>
<td>891*</td>
<td></td>
</tr>
<tr>
<td>12-13</td>
<td></td>
<td>992*</td>
<td></td>
</tr>
</tbody>
</table>

*Predicted – Based on Iowa State University Institutional Research
STEM Student Enrollment and Engagement through Connections

CoE Female Enrollment and Graduates

- Total Women
- New (first-year and transfer) Women
- Total Female Graduates

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Women</th>
<th>New Women</th>
<th>Total Female Graduates</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>653</td>
<td>181</td>
<td>139</td>
</tr>
<tr>
<td>2007</td>
<td>665</td>
<td>193</td>
<td>126</td>
</tr>
<tr>
<td>2008</td>
<td>682</td>
<td>211</td>
<td>118</td>
</tr>
<tr>
<td>2009</td>
<td>761</td>
<td>255</td>
<td>118</td>
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<tr>
<td>2010</td>
<td>841</td>
<td>260</td>
<td>113</td>
</tr>
</tbody>
</table>
CoE Minority Student Enrollment and Graduates

- Total Ethnic Minorities
- New (first-year and transfer) Minorities
- Total Minority Graduates

- 2006: Total Ethnic Minorities = 392, New Minorities = 142, Total Minority Graduates = 117
- 2007: Total Ethnic Minorities = 390, New Minorities = 150, Total Minority Graduates = 100
- 2008: Total Ethnic Minorities = 359, New Minorities = 177, Total Minority Graduates = 108
- 2009: Total Ethnic Minorities = 440, New Minorities = 228, Total Minority Graduates = 87
- 2010: Total Ethnic Minorities = 482, New Minorities = 227, Total Minority Graduates = 89
### Enrollment in Des Moines Area Community College (DMACC)

#### EGR 100

<table>
<thead>
<tr>
<th>Year</th>
<th>Fall</th>
<th>Spring</th>
<th>Total</th>
<th>Women</th>
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</thead>
<tbody>
<tr>
<td>07-08</td>
<td>13</td>
<td>1</td>
<td>14</td>
<td>1</td>
</tr>
<tr>
<td>08-09</td>
<td>16</td>
<td>18</td>
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<td>09-10</td>
<td>23</td>
<td>16</td>
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</tr>
<tr>
<td>10-11</td>
<td>32</td>
<td>27</td>
<td>59</td>
<td>5</td>
</tr>
</tbody>
</table>
STEM Student Enrollment and Engagement through Connections

![CoE E-APP Enrollment Graph](image)

<table>
<thead>
<tr>
<th>Year</th>
<th>Enrollment</th>
</tr>
</thead>
<tbody>
<tr>
<td>2007</td>
<td>59</td>
</tr>
<tr>
<td>2008</td>
<td>79</td>
</tr>
<tr>
<td>2009</td>
<td>136</td>
</tr>
<tr>
<td>2010</td>
<td>137</td>
</tr>
</tbody>
</table>
Highlights of Recent Activities

a. CySTEM (with ISU Extension)
b. DMACC Pre-engineering and Precollege Programs
c. Transfer Student Data Analysis
d. E2020 Curriculum
e. “Changing the Conversation” about Engineering
f. Dissemination
Public Understanding/Awareness of Engineering

- Career awareness: CySTEM
- E:TEC scholarships
- Volunteer grants
- Resource kits
CySTEM:  http://ags.gis.iastate.edu/cystem
b. DMACC Pre-engineering and Precollege Programs

c. Transfer Student Data Analysis (SEEC Data Brief)

d. E2020 Curriculum (ASEE Conference paper, ISU-DMACC NSF TUES proposal)

e. “Changing the Conversation” about Engineering (COE, DMACC and PWSE)

f. Dissemination
Recent Dissemination Activities

- “SEEC Connections” newsletter, Spring 2011
- AACRAO Conference, Best Practices in Degree Partnerships, APP/E-APP, Mary Darrow and Eric Merten, January 30- February 1, 2011
- Iowa Community College-ISU Academic Leader's Roundtable, Overview of Research Activities (Larry Ebbers, Frankie Santos Laanan, Linda Serra Hagedorn), February 4, 2011
- SEEC Data Brief: Measuring the SEEC Effect: Engineering Transfer Student Retention & Success, March 2011
- NSF STEP Grantees Meeting, Workshop on Assessing your STEP Project, (Diane Rover, Frankie Santos Laanan, Steven Mickelson, Mack Shelley), March 16-18, 2011
- Student Success Summit, ISU, pres. by SEEC/E2020 team members, March 24-25, 2011
- Discover Engineering Day, DMACC Ankeny Campus, April 5, 2011
- Taking the Road Less Traveled Conferences, Introducing CYSTEM, Holly Bignall, April 14, 21 & 28, 2011
- Diversity in STEM Conference, pres. by SEEC team members, DMACC, April 22, 2011
- ASEE Annual Conference & Exposition, Vancouver, presentations by SEEC/E2020 team members, June 26-29, 2011
Transfer Student Data Collection & Analysis

- E-APP participation and retention
- DMACC’s EGR 100 enrollment
- 1-, 2-, and 3-year retention in engineering at ISU
- Learning communities participation and retention
- Basic Program (BP) credits, course grades, and GPA at DMACC and ISU - retention
- ISU engineering graduation and placement data for transfer students
SEEC Effect Conclusions (Work-in-Progress)

- DMACC students who participate in E-APP vs. those who do not are retained at a significantly higher level.
- DMACC students who participate in a LC at ISU are retained at a significantly higher level; multiple LC participation increases retention even more.
- The Basic Program GPA is the best indicator for retention in engineering.
- Initial findings related to courses that DMACC students should transfer are still being explored.
- Transfer GPA is the best indicator for transfer student placement success.
STEM Student Enrollment and Engagement through Connections

Messaging and Advising to Engineering Transfer Students

- “Changing the Conversation” and related messaging
- Join E-APP/APP (www.eng.iastate.edu/transfer/app)
- Focus on the “Engineering Basic Program” while at the community college
- Use the Engineering Transfer Student Webpage (www.eng.iastate.edu/transfer)
- Use Transit (https://transit.iastate.edu/)

Actions that increase retention and success in engineering:
- E-APP – Get to know your ISU adviser and transfer peer mentors!
- Campus visits/orientation
- Move to campus, live in Ames
- Join Learning Communities (the more the better!)

GPA matters!

Prepare for your adjustment to Iowa State’s College of Engineering
- Take 12-15 credits your first semester at ISU
- Get to know engineering faculty, staff, and students – reach out to them!
- Access academic, social, and professional resources
Action Items, Ideas, & Next Steps

- Follow-up topics include:
  - APP promotion
  - Data conversations with Boone and/or other faculty/staff
  - Cy to campus
  - Messaging and Advising “Top 10”
  - Intentional female/honors programming, messaging, and recruitment
  - Opportunities with STEM open-option/undecided students
  - Hunziker Center as a hub for pre-engineering coursework
  - Communication strategies (email, FB, Groupsite, DMACC Daily, etc.)

- Continue efforts with Dual Enrollment pop. (Discover Engineering, PLTW, etc.)
- Continue Discover Engineering event planning
- Schedule meetings for pre-engineering students at the Ankeny and Boone campuses
- Map out a deliberate strategy for ISU visits to Ankeny and Boone to connect E-APP, pre-engineering, and prospective pre-engineering students with ISU resources
Year 5 Planning and Sustainability

• Fall ISU-DMACC workshop to review data and best practices (advising, curriculum, etc.)
• Data analysis and data-driven actions/decisions
• Strategic planning and transition planning with campus partners
• Continued collaboration
  • Annual workshop between DMACC pre-engineering programs and ISU College of Engineering and BP departments
  • Regular data sharing and reporting
  • NSF proposals and mutual programming