Organizing for Distinction:

Creating a 4th College/School for Cross-Cutting Academic Programs and Initiatives?

Moderators: Ramona Graves and Jon Leydens – standing in for Kevin Moore

COLORADO SCHOOL OF MINES
EARTH • ENERGY • ENVIRONMENT
Workshop Overview

**Purpose:** We seek comment that can inform a goal of collective consensus about an organizational structure to enable and empower cross-cutting academic programs and initiatives.

**Workshop agenda:**
- Overview of motivating aspirations and proposals to date (10 min.)
- An interactive “build a new college” exercise (20 min. x 2)
Aspirations: the “MinesPlus” Model

Paul Johnson Quotes:

- We need “... to support the programs/people we hope to have in 5-years (e.g., less stove-piped programs, more common/shared early courses, individualized discipline + breadth + passion experiences for students...”
- “... Imagine if all students had semi-customized degrees built from: a disciplinary base (foundation) + a cross-cutting concentration (context – energy, health, etc.) + some highly orthogonal dimension (humanities, entrepreneurship, social sciences, art, etc.) + critical professional skills (communications, teamwork, six sigma, business, essential software tools, etc.)... We can do it...”
- Exceptional Students Deserve Exceptional Programs
Aspirations for Distinction

- Imagine that we provide students with four facets of education at Mines:
  - disciplinary depth
  - broad professional skills
  - motivating understanding of the social context of engineering and applied science
  - opportunities to explore and pursue their passion
Aspirational Motivations: Passions Inside Mines

- A group of faculty, led by a group of students, clamoring for “more” around the topics of entrepreneurship and innovation, start-up incubators, MakerSpaces, etc.

- The growing interest of students, funding agencies, companies, and donors in the Humanitarian Engineering program, with its emphasis on Corporate Social Responsibility

- A growing effort to create a vertically- and horizontally-integrated approach to design education in CECS, from EPICS to Capstone, viewing design as a human-centered, cross-cutting activity

- A group of 20 faculty from all over campus who have been meeting regularly and in retreat to propose
  - A revamped BSE degree that is cross-cutting, integrative, and flexible (coming to UGC this fall)
  - The possibility of a new department called “Engineering and Society”
Isn’t it enough that we already have LAIS…Ethics across the curriculum…Writing across the curriculum…Humanitarian Engineering…“systems” course…Senior Design…McBride (and soon extended Honors)...NHV…HASS Electives…ETM, etc.?

Yes, these are important, but it would be a stretch to refer to these experiences as integrative across the curriculum, immersive, or pervasive.

Some reasons for the mismatch between reality and aspiration are

- Natural tension that arises within the limitations of a fixed curricular budget
- These cross-cutting experiences are simply not well-supported or honored in an institution whose organizational and management structure is fundamentally discipline based: we are not inclusive relative to heterogeneity in discipline
- We have not developed a coherent vision for “…what constitutes effective integration, immersion, and pervasiveness across the undergraduate curriculum”
- We have not developed an organizational construct that gives proper priority to these experiences in our academic landscape
Pieces “at Play” in the Models

- Design Education
  - EPICS
  - CECS Capstone Design
  - BSE Degree
- LAIS components
  - Humanitarian Engineering/Science, Technology, and Society (STS) – Minor, possible BS and MS degrees
  - HASS (Humanities, Arts, and Social Sciences)
  - IPE
- First Year Experience
- Honors (McBride and Honors Expansion)
- Interdisciplinary Minors

- Entrepreneurship and Innovation (E&I)
- International Studies
- Online and Professional Education
- Professional Development (faculty/students/staff)
- Trefny Innovative Instruction Center
- Writing/Communicating across the curriculum
- Math Learning Center
- Grand Challenges Scholars Program
- Peace Corp Prep Programs
- Computer Science?
- Economics and Business?
The Models to Date

- **“School” Model**
  - No departments
  - Moves most pieces to new school; moves some to Provost

- **Administrative College Model**
  - Puts Engineering and Society into CECS
  - Leaves HASS in CERSE
  - Moves cross-cutting programs to a “University Programs College”

- **Middle-Ground Model**
  - Similar to School model, but retains Departments for P&T purposes
“Build a New College” Exercise

- Work in groups
- Using the materials provided, arrange the pieces in ways that you think make sense
  - Use blank cards to note things that are not on the list but should be
  - Assign people, programs, departments, degrees, etc.
  to
  - Provost, New College, or one of the existing colleges
- Also think about administrative structure (school versus college, department or not)

YOU HAVE 20 MINUTES
“Move the Squares” Exercise

Design Education
CECS Capstone
BSE degree
EPICS
LAIS Components
IPE (MIPER)
HASS courses
Honors (McBride)
Honors (non-McBride)

Entrepreneurship and Innovation (E&I)
Online and Professional Education
Interdisciplinary Minors
First-Year Experience

Peace Corps Prep Program
Grand Challenges Scholars Program
Professional Development (Faculty/Students)
Trefny Innovation Instruction Center

International Studies
Math Learning Center
Economics and Business
Computer Science

MS Humanitarian Engineering
Writing/Communicating Across the Curriculum

Others??

Provost
4th Dimension
CASE
CECS
CERSE
Other (e.g., Student Life)
<table>
<thead>
<tr>
<th>Department</th>
<th>Programs College (no degree programs)</th>
<th>CECS (degree programs, provides leadership, support and oversight for discipline-specific activities)</th>
<th>CERSE (degree programs, provides leadership, support and oversight for discipline-specific activities)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Online Education</td>
<td>University Programs College (no degree programs, provides leadership, support and oversight of institutionally important initiatives that broadly impact students and the quality of education across campus)</td>
<td>Applied Mathematics and Statistics</td>
<td>Colorado Geological Survey</td>
</tr>
<tr>
<td></td>
<td>• Director, Support Staff</td>
<td>• DH, Support Staff</td>
<td>• Director, Support Staff</td>
</tr>
<tr>
<td></td>
<td>• Faculty (housed in CASE, CECS, CERSE)</td>
<td>• Faculty (housed in department)</td>
<td></td>
</tr>
<tr>
<td>Trefny Innovative Instruction Center</td>
<td></td>
<td>Civil and Environmental Engineering</td>
<td>Economics and Business</td>
</tr>
<tr>
<td></td>
<td>• Director</td>
<td>• DH, Support Staff</td>
<td>• DD, Support Staff</td>
</tr>
<tr>
<td></td>
<td>• Support Staff</td>
<td>• Faculty (housed in department)</td>
<td>• Faculty (housed in department)</td>
</tr>
<tr>
<td>Communications Center (aka, expanded Writing Center)</td>
<td></td>
<td>Electrical Engineering and Computer Sciences</td>
<td>Geology</td>
</tr>
<tr>
<td></td>
<td>• Director</td>
<td>• DD (EE, CS), Support Staff</td>
<td>• DH, Support Staff</td>
</tr>
<tr>
<td></td>
<td>• Support Staff</td>
<td>• Faculty (housed in separate divisions)</td>
<td>• Faculty (housed in department)</td>
</tr>
<tr>
<td>First-Year Experience</td>
<td></td>
<td>Engineering and Society (HE, BSE, Design, EPICS)</td>
<td>Geophysics</td>
</tr>
<tr>
<td></td>
<td>• Director</td>
<td>• DH, Support Staff</td>
<td>• DH, Support Staff</td>
</tr>
<tr>
<td></td>
<td>• Support Staff</td>
<td>• Faculty (housed in academic department)</td>
<td>• Faculty (housed in department)</td>
</tr>
<tr>
<td>Entrepreneurship</td>
<td></td>
<td>Mechanical Engineering</td>
<td>Humanities, Arts and Social Sciences</td>
</tr>
<tr>
<td></td>
<td>• Director</td>
<td>• DIH, Support Staff</td>
<td>• DD, Support Staff</td>
</tr>
<tr>
<td></td>
<td>• Support Staff</td>
<td>• Faculty (housed in department)</td>
<td>• Faculty (housed in department)</td>
</tr>
<tr>
<td>Professional Development</td>
<td></td>
<td></td>
<td>Mining Engineering</td>
</tr>
<tr>
<td></td>
<td>• Director</td>
<td></td>
<td>• DH, Support Staff</td>
</tr>
<tr>
<td></td>
<td>• Support Staff</td>
<td></td>
<td>• Faculty (housed in department)</td>
</tr>
<tr>
<td>Honors</td>
<td></td>
<td></td>
<td>Petroleum Engineering</td>
</tr>
<tr>
<td></td>
<td>• Director</td>
<td></td>
<td>• DH, Support Staff</td>
</tr>
<tr>
<td></td>
<td>• Support Staff</td>
<td></td>
<td>• Faculty (housed in department)</td>
</tr>
<tr>
<td></td>
<td>• Faculty (mostly in CASE, CECS, CERSE)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IDEAS (academic programs and initiatives that broadly support cross-disciplinary education across campus)</td>
<td>CECS (degree programs, provides leadership, support and oversight for discipline-specific activities)</td>
<td>CERSE (degree programs, provides leadership, support and oversight for discipline-specific activities)</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
<td></td>
</tr>
</tbody>
</table>
| **Design, Engineering, and Society (HE, BSE)**  
  • Department Head, Support Staff  
  • Faculty (housed in department) | **Applied Mathematics and Statistics**  
  • Department Head, Support Staff  
  • Faculty (housed in department) | **Colorado Geological Survey**  
  • Director, Staff |
| **Humanities, Arts, and Social Sciences**  
  • Department Head, Support Staff  
  • Faculty (housed in department) | **Civil and Environmental Engineering**  
  • Department Head, Support Staff  
  • Faculty (housed in department) | **Economics and Business**  
  • Division Director, Support Staff  
  • Faculty (housed in department)  
  • Payne Policy Institute |
| **Integrative Programs and Initiatives**  
  • Support Staff  
  • Faculty (housed in other departments)  
  • Includes (each with a Director)  
    • Entrepreneurship and Innovation  
    • First-Year Experiences | **Electrical Engineering and Computer Sciences**  
  • Division Directors (EE and CS), Staff  
  • Faculty (housed in separate divisions) | **Geology**  
  • Department Head, Support Staff  
  • Faculty (housed in department) |
| **Mechanical Engineering**  
  • Department Head, Support Staff  
  • Faculty (housed in department) | **Geophysics**  
  • Department Head, Support Staff  
  • Faculty (housed in department) | **Mining Engineering**  
  • Department Head, Support Staff  
  • Faculty (housed in department) |
| **Strategic Support (administrative initiatives that provide leadership and support of institutionally important activities, reports to Provost)** | **Communications Center**  
  • Director, Support Staff | **Petroleum Engineering**  
  • Department Head, Support Staff  
  • Faculty (housed in department) |
| **Online Education**  
  • Director, Support Staff  
  • Faculty (housed in CASE, CECS, CERSE) | **Mathematics and Statistics Learning Center**  
  • Director, Support Staff | **Trefny Innovative Instruction Center**  
  • Director, Support Staff |
| **Trefny Innovative Instruction Center**  
  • Director, Support Staff | **Gimmy and Lorraine White Center for Teaching Excellence**  
  • Director, Support Staff | **Trefny Innovative Instruction Center**  
  • Director, Support Staff |