Organizing for Distinction:

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

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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)

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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**

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Aspirational Motivations: Passions Inside Mines
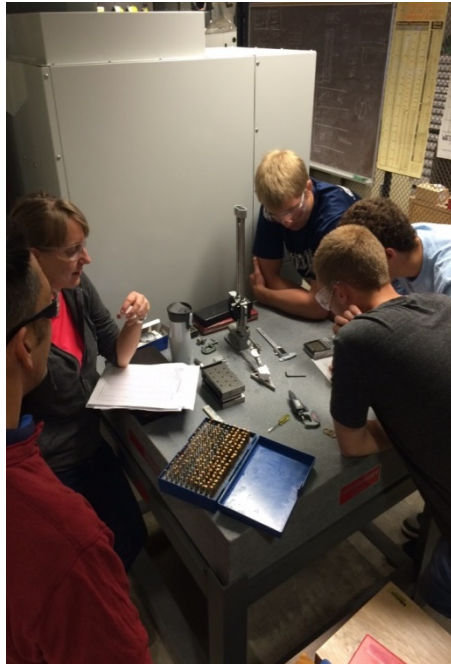
- A group of faculty, led by a group of students, clamoring for "more" around the topics of **entrepreneurship and innovation**, start-up incubators, MakerSpaces, etc.

- 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**"

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Existing Resources

- 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

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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

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"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

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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)	CECS (degree programs, provides leadership, support and oversight for discipline-specific activities)	CERSE (degree programs, provides leadership, support and oversight for discipline-specific activities)
Online Education • Director, Support Staff • Faculty (housed in CASE, CECS, CERSE)	**Applied Mathematics and Statistics** • DH, Support Staff • Faculty (housed in department)	**Colorado Geological Survey** • Director, Support Staff
Trefny Innovative Instruction Center • Director • Support Staff	**Civil and Environmental Engineering** • DH, Support Staff • Faculty (housed in department)	**Economics and Business** • DD, Support Staff • Faculty (housed in department)
Communications Center (aka, expanded Writing Center) • Director • Support Staff	**Electrical Engineering and Computer Sciences** • DD (EE, CS), Support Staff • Faculty (housed in separate divisions)	**Geology** • DH, Support Staff • Faculty (housed in department)
First-Year Experience • Director • Support Staff	**Engineering and Society (HE, BSE, Design, EPICS)** • DH, Support Staff • Faculty (housed in academic department)	**Geophysics** • DH, Support Staff • Faculty (housed in department)
Entrepreneurship • Director • Support Staff	**Mechanical Engineering** • DiH, Support Staff • Faculty (housed in department)	**Humanities, Arts and Social Sciences** • DD, Support Staff • Faculty (housed in department)
Professional Development • Director • Support Staff		**Mining Engineering** • DH, Support Staff • Faculty (housed in department)
Honors • Director • Support Staff • Faculty (mostly in CASE, CECS, CERSE)		**Petroleum Engineering** • DH, Support Staff • Faculty (housed in department)

IDEAS (academic programs and initiatives that broadly support cross-disciplinary education across campus)

Design, Engineering, and Society (HE, BSE)
- Department Head, Support Staff
- Faculty (housed in department)

Humanities, Arts, and Social Sciences
- Department Head. Support Staff
- Faculty (housed in department)

Integrative Programs and Initiatives
- Support Staff
- Faculty (housed in other departments)
- Includes (each with a Director)
  - Entrepreneurship and Innovation
  - First-Year Experiences

CECS (degree programs, provides leadership, support and oversight for discipline-specific activities)

Applied Mathematics and Statistics
- Department Head, Support Staff
- Faculty (housed in department)

Civil and Environmental Engineering
- Department Head, Support Staff
- Faculty (housed in department)

Electrical Engineering and Computer Sciences
- Division Directors (EE and CS), Staff
- Faculty (housed in separate divisions)

Mechanical Engineering
- Department Head, Support Staff
- Faculty (housed in department)

CERSE (degree programs, provides leadership, support and oversight for discipline-specific activities)

Colorado Geological Survey
- Director, Staff

Economics and Business
- Division Director, Support Staff
- Faculty (housed in department)
- Payne Policy Institute

Geology
- 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)

Petroleum 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)

Online Education
- Director, Support Staff
- Faculty (housed in CASE, CECS, CERSE)

Communications Center
- Director, Support Staff

Trefny Innovative Instruction Center
- Director, Support Staff

Mathematics and Statistics Learning Center
- Director, Support Staff