Strategic Planning
Recalibration Discussion

Board of Trustees
December 11, 2008
Strategic Plan Recalibration 2008

- Recalibration Committee
  - Mark Eberhart
  - Jim Ely
  - Brajendra Mishra
  - William Navidi
  - Tibor Rozgonyi
  - Kirsten Volpi
  - Nigel Middleton, Chair

- Support Provided By
  - Geoff Barsch
  - Tom Boyd
  - Tricia Douthit-Paulson
  - Maureen Durkin
  - Peter Han
The Ten-Year Plan
2004–2014

- Cultivate world-class expertise in key focus areas
- Enhance Mines’ distinction as a research institution
- Sharpen Mines’ distinction in undergraduate education
- Align graduate programs with professional and societal needs
- Realign the geographic, demographic, and programmatic mix of students
- Expand the financial resource base
- Restructure the deployment of financial resources and capital assets

There was no disagreement within the Committee about these seven strategies
**Original Strategic Plan Goals/Implications**

Set when plan was launched in 2004

**By 2014:**

- **Headcount Enrollment Goals**
  - Undergraduate: 4448
    - 1000 new undergraduates annually by 2014
  - Graduate: 1290
    - 632 Non-thesis master’s
    - 240 Thesis master’s
    - 418 Ph.D.
  - Total: 5738

- **Research Expenditure Goal**
  - $50 million

- **Potential Implications of These Goals:**
  - Faculty Headcount
    - 40/40/20 distribution of credit hour delivery
  - Growth in TTT Faculty
  - Growth in Instructors and Lecturers
  - Growth in Adjuncts

- **Infrastructure**
  - At least 100,000 square feet needed
Points of Tension with Implementation

- Rapid growth in undergraduate population
- Faculty hiring and infrastructure development could not keep pace

Recalibration Committee therefore focused on analysis of faculty and infrastructure capacity issues
Priority Strategic Objective

“To recruit and educate the best and brightest students to solve the engineering and science problems of the future.”

» Strategic Plan Recalibration Committee
Requirements to Meet Priority Strategic Objective

- Ensure a high quality undergraduate student body through increased selectivity in the admissions process
- Continue to grow the number and quality of graduate students
- Continue to grow research expenditures
- Manage existing space more efficiently, while planning for new infrastructure
Specific Recommendations

New Goals by 2014:

› Headcount Enrollment
  – Undergraduate: 3500
    • Recruitment focused on non-residents
  – Graduate: 1200
    • 288 Non-thesis Master’s
    • 432 Thesis Master’s
    • 480 Ph.D.
  – Total: 4700

› Implications
  – Faculty Headcount
    • 40/40/20 distribution of credit hour delivery
    • 12 to 30 TTT Faculty
    • 5 Instructors/Lecturers
  – Infrastructure Needs
    • At least 80,000 square feet
    • Rehabilitation of some classrooms
    • Centralized space management
    • Updated space study originally performed in 2002
Original Goals Compared to Actuals

Original Goals Compared to Actuals

Number of Students

2003 2004 2005 2006 2007 2008

Total Plan
Resident Plan
Non-Resident Plan

Original Goals Compared to Actuals
Undergraduate Enrollment

- Currently at 3400 total undergraduates
- 905 new students this fall
- On target with strategic plan goals
- Holding enrollment at 3500 allows an opportunity to raise student quality:
  - Step 1: Continue to focus on non-resident growth, while holding total undergraduate population constant
  - Step 2: Larger, more diverse applicant pool will allow for more selectivity
Graduate Enrollment

- Currently at 936 total
- 21% growth in last two years driven by:
  - Differential tuition
  - More funding for fellowships and TAs
  - Increasing research volume
- Quality/reputation of CSM follows from strong graduate programs
- Focus on research-based programs
Actual Graduate Enrollment 2003 – 2008
New 2014 Goals

<table>
<thead>
<tr>
<th>Year</th>
<th>Master's Non-thesis Actual</th>
<th>Master's Thesis Actual</th>
<th>Ph.D. Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>132</td>
<td>288</td>
<td>229</td>
</tr>
<tr>
<td>2004</td>
<td>288</td>
<td>305</td>
<td>336</td>
</tr>
<tr>
<td>2005</td>
<td>305</td>
<td>368</td>
<td>368</td>
</tr>
<tr>
<td>2006</td>
<td>336</td>
<td>432</td>
<td>288</td>
</tr>
<tr>
<td>2007</td>
<td>432</td>
<td>480</td>
<td></td>
</tr>
</tbody>
</table>

Number of Students

Legend:
- Master's Non-thesis Actual
- Master's Thesis Actual
- Ph.D. Actual
- Master's Non-Thesis Projections
- Master's Thesis Projections
- Ph.D. Projections

COLORADO SCHOOL OF MINES
Faculty Metrics

- Faculty headcount
- 40/40/20 distribution of credit hours across faculty groups
- Faculty activity measurement
  - Graduate advising as a measure of activity
  - Faculty hiring projections
40/40/20 Distribution

Percentage of Credit Hours Delivered

- Tenure - Tenure Track
- Instructor/Lecturer
- Adjunct
- Other

Fall 2003: 53%
Fall 2006: 36%
Fall 2007: 30%
Fall 2008: 26%
Understanding faculty activity is critical to forecasting hiring needs

- Instruction
- Undergraduate advising
- Graduate advising
- Research
- Service
Faculty Activity Measurement

Analyses of faculty activity are being conducted in several units:

- Cost-center model which takes into account instruction, advising, and research (Research Management Council)
- Discussion and development of uniform metrics for teaching expectations (Department/Division Heads)
- Peer Analyses (Planning & Policy Analysis; Graduate Studies)
External Benchmark Comparisons for Graduate Advising (2006 data)

- CSM Faculty Advising
  - PhD / TTT = 1.8
  - Graduate Student / TTT = 4.7

- Peer Average
  - PhD / TTT = 2.4
  - Graduate Student / TTT = 6.0

Overall, CSM is below peer average in terms of number of graduate students advised and number of PhD students advised.

Data as reported to ASEE for FY 2006.
Faculty Size to Support 1200 Graduate Students
Assumes undergraduate enrollment is held constant

<table>
<thead>
<tr>
<th></th>
<th>Scenario 1 Analysis including all graduate students</th>
<th>Scenario 2 Analysis including thesis–based graduate students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peer average</td>
<td>1 TTT faculty member to 6 graduate students</td>
<td>1 TTT faculty member to 4.5 graduate students</td>
</tr>
<tr>
<td>Faculty assumptions</td>
<td>100% of TTT faculty teach or advise graduate students</td>
<td>90% of TTT faculty advise thesis–based graduate students</td>
</tr>
<tr>
<td>Number of new faculty</td>
<td>12 new faculty positions needed</td>
<td>30 new faculty positions needed</td>
</tr>
</tbody>
</table>
Infrastructure

- 2002 Space Model
  - Surpluses and deficits of space for years 2004/2008/2014

- Master plan space projections

- Committee recommended:
  - Enhanced efficiency in the management of existing space
  - An updated space study (slated for 2009)
### Space Surpluses and Deficits

Deficits are noted in red

Based on 2002 Space Model

<table>
<thead>
<tr>
<th>Year</th>
<th>Total Headcount Enrollment</th>
<th>Classrooms</th>
<th>Laboratories</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>3,568</td>
<td>3,832 sq feet</td>
<td>28,055 sq feet</td>
</tr>
<tr>
<td>2008</td>
<td>4488</td>
<td>7,271 sq feet</td>
<td>18,468 sq feet*</td>
</tr>
<tr>
<td>2014</td>
<td>4700</td>
<td>14,435 sq feet</td>
<td>64,091 sq feet*</td>
</tr>
</tbody>
</table>

* Includes GRL
### Master Plan Space Projections

#### Square footage by building and type of space

<table>
<thead>
<tr>
<th>Projected Occupancy</th>
<th>Marquez Hall</th>
<th>Brown Hall</th>
<th>Meyer Phase 1</th>
<th>Earth Energy Institute</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>December 2011</td>
<td>4,420</td>
<td>3,955</td>
<td>5,230</td>
<td>8,443</td>
<td>22,048</td>
</tr>
<tr>
<td>August 2012</td>
<td>4,730</td>
<td>9,933</td>
<td>4,442</td>
<td>5,940</td>
<td>25,045</td>
</tr>
<tr>
<td>January 2013</td>
<td>14,060</td>
<td>16,910</td>
<td>4,591</td>
<td>15,510</td>
<td>51,071</td>
</tr>
<tr>
<td>July 2013</td>
<td>9,000</td>
<td>11,230</td>
<td>5,040</td>
<td>3,575</td>
<td>28,845</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>32,210</strong></td>
<td><strong>42,028</strong></td>
<td><strong>22,303</strong></td>
<td><strong>33,468</strong></td>
<td><strong>130,009</strong></td>
</tr>
</tbody>
</table>

Note: Projected occupancy represents a one-year delay from what is specified in program plans.
Suggested Implementation

- Hire 12 to 30 new TTT faculty positions to handle 1200 graduate students by 2014
- Four new positions will start in Spring 2009
- Must coordinate carefully with annual budget process
- Invest funds to alleviate administrative burdens on faculty
- Fundraising will be critical to fulfill master plan goals
- Maximize efficiencies with space utilization
Current External Environment

- Received $23 million in state support in FY 08; future state funding may be reduced
- Capital construction dollars from the state remain difficult to obtain; certain higher ed projects frozen recently by governor
- Non-residents may become more difficult to recruit
- Fundraising may be negatively impacted
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