

Mining Education in the USA-A Status Report

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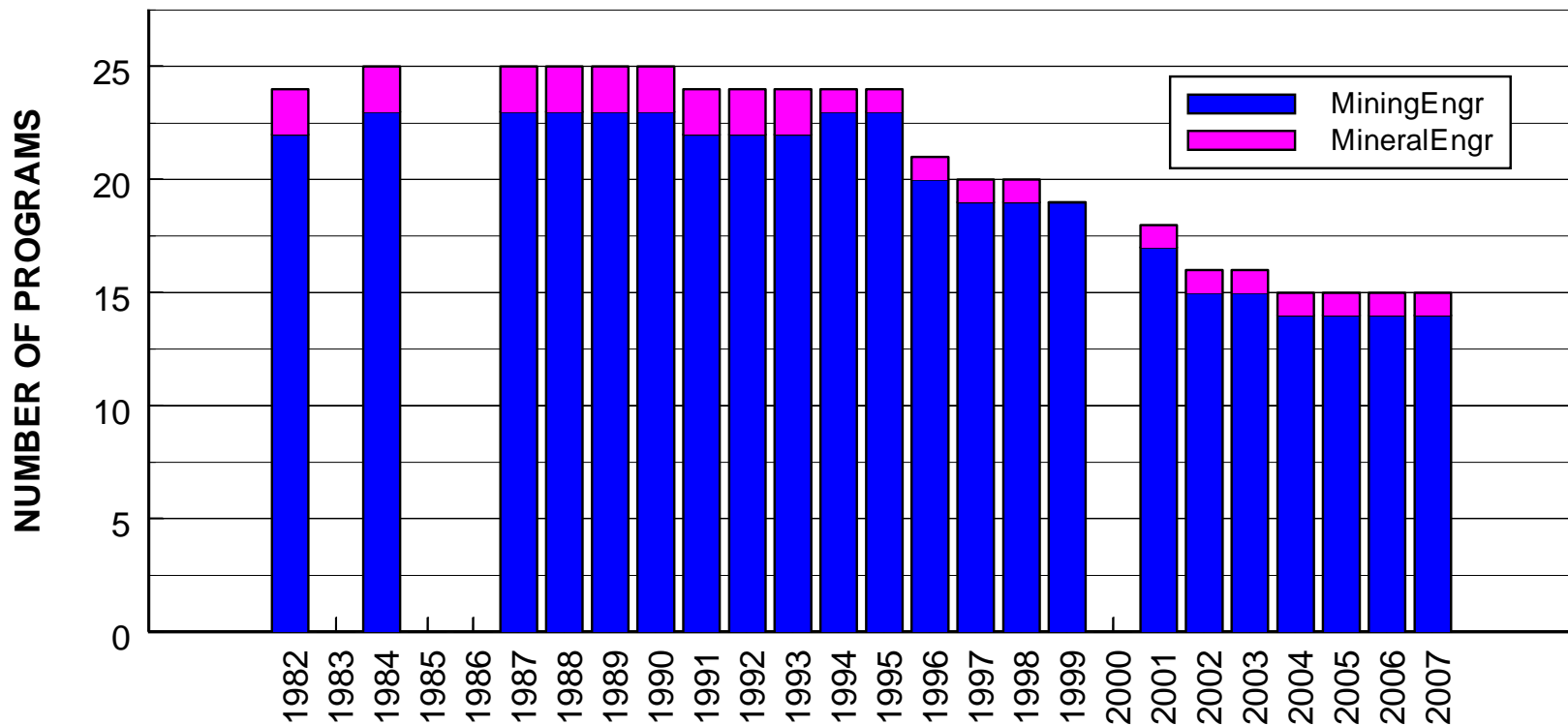
***Session 4: Education: Report on Mining
Programs***

Content

- Mining Programs
- Undergraduate Students
- Post-Graduate Students
- Faculty
- State Funding
- R&D Opportunities
- Opportunities and Barriers

Mining Programs

- 13 ABET Accredited Programs + 2
 - From a peak of 25 Programs in the 1080s



Mining Engineering and Mineral Engineering Programs – Past 25 years

Undergraduate Students

- Have increasing from under a low of less than 80 graduates/year to about 180
- Current enrollment capacity may be approaching 200 graduates/year
 - Last year (2007) the entering class in the US was 275 students
- Industry and SME projections suggest a need for 300 graduates/year

Post-Graduate Students

- Recruitment competes with other disciplines open to Mining graduate, i.e., environmental, geosciences, mechanical, civil, industrial engineering and business
- Support is becoming increasingly expensive
- Limited interest by the mining industry
- Ph.D. graduated are not always interested in academic carriers
- There is a significant “pipeline” issue

Faculty

- Currently, assuming tenured or tenure-track positions in all ranks (Assistant, Associate and full Professors), about 70
 - At peak time, in early 1980s was 120 faculty
- Average age about 52 years
- Assuming attrition and retirements, about 35 faculty have or will retire in the period 2004-2012
- Considering the post-graduate pipeline issue, faculty replacement is possibly the most critical sustainability issue of US mining programs

State Funding

- All US mining programs are in state universities
- State financial support has eroded over the years and the recent economic crisis has brought the state-university system in some states into a crisis
- Consolidation and administrative changes to introduce savings are discussed by many schools
- Challenge for mining programs to maintain identity, replace faculty and built viability
- The US mining industry has offer some support but it is rather program/state specific rather than based in a holistic approach and vision

R&D Opportunities

- Funding from traditional sources continuous to decline
- H&S issues and regulatory changes have added funding in some areas, i.e., wireless communications, emergency response
- Industry funding is rather limited
- Certain areas particularly affected (ventilation, mining systems, etc)
 - Recently, NIOSH developed a targeted initiative to support ventilation research, mainly by young faculty, in an effort to revamp and rejuvenate the subject

Opportunities and Barriers

- Opportunities:
 - Develop new educational and research partnerships
 - Address emerging areas that border mining areas of competence and expertise, i.e., Carbon Capture and Storage, Water, Energy, Coalbed Methane and GHG
- Barriers:
 - Financial support and industry engagement
 - Structural impediments of US academic system