Why is recruitment an issue?

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American Geological Institute
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The End of the Pipeline
Where we are today...

- ~50% of geoscience highest degree earners do NOT work as a geoscientist
- ~50% of working geoscientists do NOT have their highest degree in geosciences
- Functionally 0% MS & Ph.D. unemployment since 2001
- Rapid new hire demand
- Employer dissatisfaction with new hires
Petroleum Geoscientist Demand
Geologists, Geophysicists, and Engineers

![Graph showing the decrease in petroleum geoscientists from 1995 to 2020. The graph indicates a decline in demand, total workforce, and current workforce over the years, with new entries growing at a 3% rate.]
Mean Salaries 2005

- **Geologists**
  - Petroleum: $107K
  - Mining: $69K
  - Finance: $84K
  - Consulting: $68K
  - Academia: $58K
  - Government:
    - Federal: $86K
    - State: $51K
    - Local: $62K

- **Hydrologists**
  - Consulting: $65K
  - Academia: $57K
  - Government:
    - Federal: $75K
    - State: $52K
    - Local: $63K

BLS
What about these B.S. New Hires?

- Substantial hiring of new geology/environmental science Bachelor recipients

- What are their REAL future prospects?
  - Professional geoscientist?
  - Starbucks Barrista?
  - Wal-Mart Greeter?

- Is the profession serving them honestly?
The Pumping Station
The Enrollment Rollercoaster 1955-2005

Majors

Undergraduate

Graduate

0 5000 10000 15000 20000 25000 30000 35000 40000

Newly Minted Geoscientists

- B.S.
- M.S.
- Ph.D.
Race and Gender – the future?

- Gender
  - Females now dominate at the university
  - Geoscience second at attracting women
  - Industry discontinuing female preferences
- Race
  - Minorities tend not to move for college
  - Few geo programs near minority areas
  - Most come through Community Colleges
  - Lack of cultural continuity
The Wellhead
Student Interest vs. Opportunity

- Hostility towards private sector
  - Source of bulk of opportunities
- "Environmental Awareness"
  - Student interest declines precipitously
- Preference for government
  - Little to no hiring growth
- 29% of students intend to look at "non-traditional" careers
Why Do Students Choose a Field?

1. **Self-Efficacy**
   - Work towards tangible success
   - Make the class attractive and applied

2. **Outcome Expectations**
   - Promote rewards of the success
   - Social & Intellectual Standing

3. **Interest**
   - Align with interests and currency
   - Be innovative
   - Make success attainable

Akbulut & Looney, ACM Communications, October 2007
Challenges Today and Ahead
Common Employer Concerns

- Poor student preparation
  - Little or poor quality field experience
  - Too much specialization (e.g. Env. Companies want geologists, not environmental science majors, but will hire a strong back)
- Work ethic challenges
  - Little sense of professionalism
  - US new hire parochialism
- Business sense
  - What business sense?
- The Sleepless Night Points
  - Fear the budget at all levels
  - Future leadership
The Challenges

- Geoscience must compete aggressively for the best
- Budget issues are not unique
- Why do we want majors
  - Meet societies needs
  - Framework for leadership
- Not losing the opportunities
  - K-12 is starting to rebound
  - Jobs are available
  - Bridging the gap from K-12 to major
Need Some New Thinking

- **Attrition Math**
  - 340,000 Intro Geo Students
  - 6,000 New Geo Majors Per Year
  - 2,700 New Geo BS Degrees Per Year

- **Internal Competition**
  - Are we fighting for other STEM students?
  - Are other STEM fields friends or enemies?

- **How to meet needs in a Uni. Environment**
  - Divergent university and professional demands

- **Is there a moral imperative in how we treat students?**