Building Strong Geoscience Departments

Heather Macdonald, College of William & Mary
Cathy Manduca, Carleton College
Thriving Departments

- Characteristics of thriving departments: Insights from the physics community
- A departmental snapshot
- Looking to the future
SPIN-UP: Strategic Programs for Innovations in Undergraduate Physics

- Thriving programs produce large or increasing numbers of students
- Site visits to 21 “thriving” undergraduate programs

National Task Force on Undergraduate Physics
American Association of Physics Teachers, American Physical Society, American Institute of Physics
Characteristics of Thriving Programs

- Well-defined sense of mission
- Strong and sustained department leadership and active engagement of department faculty and staff
- Thoughtful curriculum
  - Introductory courses
  - Multiple pathways

*Bob Hilbron, SPIN-UP Report*
Activities Beyond Courses are Important

- Creating a supportive learning community
- Research experiences (early and often)
- Career information
- Alumni involvement & communications
- Professional development and mentoring

*Bob Hilbron, SPIN-UP Report*
Consensus about mission and goals
Matrix of skills vs. courses
  - Quantitative, research, communication skills across the curriculum
Departmental retreats and on-going discussions
Department of Geology: Opportunities for Students
Looking to the Future

Geoscience Departments: Developing Pathways to Strong Programs for the Future

Heather Macdonald, College of William and Mary
Cathy Manduca, Carleton College, NAGT President
Geoffrey Feiss, Provost, College of William and Mary
Randy Richardson, University of Arizona
A Four-Part Program

- Website: resources for departments
  - Descriptions of departments
  - Examples of innovative programs
  - References
  - On-line resources
- Workshop
- Survey of departments
Geoscience Departments in Research-Intensive Universities

- 51 departments - American Association of Universities (AAU) plus several others
- Characterizing research departments
  - Number of faculty? Students?
  - Threats? Opportunities?
  - Successful strategies?
  - Planning?

Richardson and Beck (AGU, 2004)
Interesting Results

- Opportunities
  - Large-scale research
  - Integrated science
- Declining resources
- Recruiting and retaining faculty
- Recruiting and retaining graduate students
- Integrating research and education