STEM Graduate Education & Postdoctoral Training: The NIH Perspective

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What are the challenges?

• NIH is committed to the support of a stable and sustainable scientific workforce. NIH is concerned about:
  
  – the health of science pipeline
  
  – accurately predicting needs in specific fields such that policy can be responsive
  
  – the effects of the budget on pipeline
Change in NIH Appropriations, 1995-2008

Source of Fiscal years 2007 and 2008 is FY 2008 President's Budget

Billions

Appropriations

Percent Change

Fiscal Year


Pre-Doubling  Period of Doubling  Post Doubling

Percent change from previous fiscal year

Appropriation
Changing face of employment in biomedical science

Employment of Biomedical Science PhDs by Sector of Employment

- Other
- Government
- Industry
- Academia

http://opa.faseb.org/pdf/Training%20Presentation%202007.ppt
Total and New Ph.D. Faculty 1970 to 2006 in U.S. Medical Schools
Association of American Medical Colleges

http://www.aamc.org/data/facultyroster/reports.htm
According to 2005 NRC report on US needs in biomedical, behavioral & clinical sciences:

- numbers graduating currently in balance w/ market needs
- multidisciplinary training: greater need and opportunities for these trainees

• tension between need to see upcoming trends and policy timeline
Full Time Biological and Medical Sciences Graduate Students in Doctorate Granting Departments by Mechanism of Support

Number

Support Mechanisms for Biomedical Grad Students

- Teaching Assistantships
- Research Assistantships
- Traineeships
- Fellowships
- Other (including self)

http://opa.faseb.org/pdf/Training%20Presentation%202007.ppt
Biological and Medical Sciences Postdocs by Citizenship/ Visa Status

Number


US Citizens and Permanent Residents

Temporary Residents

Increasing Biomedical Postdocs with Temporary Visas
What are the roles of NIH in shaping graduate education and postdoctoral training?

• NIH can influence via:
  – Career awards/traineeships/fellowships:
    • Emphasis on multidisciplinary work (e.g., biomedical engineering, expansion of NRSA)
    • Control quality of education and training
    • Conduct evaluations to assess that quality & outcomes
    • Control stipends (de facto income standards): increasing $ stipends may result in decreasing #s of funded students

• Cannot control:
  – Research assistantships associated with grants to investigators
    • Cannot control quality or quantity