Projections and Policy: Three Dimensions

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*The opinions expressed here are solely those of the author and do not represent the positions of BHEW, the National Research Council, or the National Academies
Three Points

1. Labor market dynamics
2. Policy interactions
3. Multiple national conversations
Point #1: Labor Market Dynamics
Findings on Status of Biomed Workforce

- 2005 BHEW Report: System approaching "equilibrium"
- 2011 BHEW Report: Models predict future growth in workforce but increase in postdocs after 2006 could signify "weakening" in NIH-funded biomedical research workforce
Figure 3-36
Median time spent in postdoc positions for S&E doctorate recipients completing postdocs, by field and year of doctorate: 2006

Months

50

Life sciences

40

Physical sciences

30

All other S&E

20

Psychology

10

0


Year of doctorate

NOTE: Excludes those currently in postdoc position.

Science and Engineering Indicators 2008
Increases in doctoral biomedical workforce account for 20% of overall S&E growth.
Point #1: Dynamics

• Labor markets dynamics here are specific to biomedical research (and don’t generalize!?)

• Key Factors:
  – Federal funding for NIH
  – Size of grants
  – Recipients of grants
  – Organization of labs (PIs, Faculty, Postdocs, RAs, Technicians)
  – Hiring in industry (esp. biotech, pharma)
  – Demographics/Diversity
  – Feedback from grad students to undergrads about career prospects
  – Salaries, wages, stipends
Point #2: Policy Interactions

- How many?
- What for?
- Who?
Policy: Number Trainees

• Basic biomedical trainees: **No further increases in numbers, unless funding significantly increases.** While maintaining the number of trainees, the reports recommended:
  • an increase in the health professional/scientist dual-degree programs
  • an increase in the participation of underrepresented minorities

• Behavioral and social sciences: Recommends an increase to maintain the number of trainees seen around 2004-2005, but then no further increase.

• Health related research areas: Fairly consistent push to increase the number of trainees in medical, dental, nursing and other health services and clinical research.

• Health services research: Training should be expanded and strengthened within each NIH institute and center. Agency for Healthcare Research and Quality (AHRQ) training programs should be expanded, commensurate with the growth in total spending on health services research.
Policy: Training Mechanisms

A controversial issue has been the mix of funding mechanisms recommended:

• **1998 Trends Report**: Recommended a shift from RAs to traineeships without affecting overall number as there is a glut of PhDs (dissent)

• **2000 BHEW Report**: Recommended a substantial shift from RAs to traineeships so the latter comprise 50% of support

• **2005 Bridges Report**: Also recommended a shift from RAs to traineeships

• **2005 BHEW Report**: Explicitly recommended **against** a shift from RAs to traineeships

• **2011 BHEW Report**: Silent on shift from traineeships to RAs, but does argue that students supported on latter should receive similar training
Point #2: Policy Interactions

- **Level of research Funding:** Funding drives numbers and mechanism of support with no restraints.
- **Number of trainees:** Significant increases in one type of support that is not a substitution for another type increases PhD production (regardless of career projections).
- **Doctoral education for what:** The type of support is supposed to provide different types of training – and so signifies a variety of goals (including career goals) for doctoral students.
- **Who participates:** There are demographic differences by type of support.
Point #3 Context

Policy Context

Workforce Projections
## Point #3: Policy Conversations

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Balance in the FS&T Portfolio

- *Rising Above the Gathering Storm* recommended increased Federal funding for research, *particularly in the physical sciences and engineering*
- The recommendation was made in 2005 as the “doubling” of the NIH budget was concluding
- If federal funding is a zero-sum game (!?), this would have implications for NIH funding and both biomedical research careers and training
Numbers and Training Mechanisms: AGAIN!

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- **2005 Gathering Storm**: Recommends substantial increase in portable graduate fellowships implying a need for more PhDs a recommendation that runs counter to evidence from biomedical research
- **2010 CGS/ETS Report**: Recommends Doctoral COMPETES Act with very large increase in traineeships also implying a need for more PhDs
Three points

• Labor market dynamics are specific to a field or industry
• Policy options within a field or industry impact more than one issue as those issues interact as well
• Projections for a single labor market interact with larger national conversations about S&E