Previous Recommendations on Graduate Education

Revitalizing Graduate Education for the 21st Century
National Academies of Sciences, Engineering, and Medicine

Yasmeen Hussain
May 22nd, 2017
Goal

• Understand previous recommendations of reports on graduate education

• Impact of recommendations

National Research Council, 1995
20 Reports, 1995-2017

• National Research Council (National Academies)
• Council of Graduate Schools
• American Association of Universities
• Woodrow Wilson National Fellowship Foundation
• American Chemical Society
• National Institutes of Health
• National Science and Technology Council
• Mellon Foundation
Comprehensive, Not All-Encompassing

• Included: some reports not centered on graduate education but which have pertinent recommendations

• Not included: important reports peripheral to graduate education (K-12, Undergraduate, and Early Career)
  – Undergraduate: AAAS, NSF, PCAST, Mathematical Association of America, American Physical Society

• Not included: important reports that have relevant data, but which do not have recommendations
  – NSF, Carnegie Foundation, Department of Education, American Institutes for Research, American Mathematical Society, National Science Board
Key Themes

• Student Infrastructure & Policies
• Data
• Careers & Competencies
• Degree Experience
• Buy-In
Student Infrastructure & Policies

• Financial Support
• Emphasize Diversity
• Start Early
• International Students
• Prioritize Student Needs

“Government...should adjust their support mechanisms to include new education/training grants to institutions and departments”

– National Research Council, 1995
Data

• Departments Collect Data
• Agencies Collect Data
• Departments Provide Data

“We recommend the establishment of a national database of information on employment options and trends. This information...should include, by field, data on career tracks, graduate programs (including financial aid), time to degree, and placement rates.”

– National Research Council, 1995
Careers & Competencies

- Diverse Career Preparation
- Professional Development
- Internships
- Career Assistance
- Social Engagement
- Interdisciplinarity

“To produce more versatile scientists and engineers, graduate programs should provide options that allow students to gain a wider variety of skills...Off-campus internships in industry or government can lead to additional skills and exposure to authentic job situations.”

– National Research Council, 1995
Degree Experience

- Support During Degree
- Student Well-Being
- Mentoring
- Shorten Degree
- Improve Completion
- Evaluate Programs

“The primary objective of graduate education is the education of students...A student’s progress should be the responsibility of a department rather than of a single faculty member...Each institution is urged to set its own standards for time to degree and to enforce them.”

– National Research Council, 1995
Buy-In

- Student Involvement
- Employer Involvement
- Professional Societies
- Faculty Support
- Convene & Discuss

“A national discussion group—including representatives of governments, universities, industries, and professional organizations—should deliberately examine the goals, policies, conditions, and unresolved issues of graduate-level human resources.”

– National Research Council, 1995
Impacts of Recommendations

• *Rising Above the Gathering Storm Revisited*
  – National Science Foundation increased $ for graduate fellowships and traineeships
  – US government allowed international students with STEM degrees to stay longer after graduation

• Challenges: Diffuse institutions and data

• Indicators: Reoccurring recommendations