Safeguarding the Biomedical Research Environment: ethical responsibilities of research institutions and funders

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Outline

• Describe the current biomedical research “hypercompetitive” environment

• Argue: hypercompetitive environment may cause counternormative behavior

• What can NIH and Universities/Colleges do?
• NIH needs to make efforts to better understand the entry, growth, and exit rate of scientists.
Figure 2: Doctorate Students by Type of Support
SHE Doctorate Holders Employed in Academia

- Full-time faculty
- Other full-time positions
- Postdocs
- Part-time positions
PhD Student Expectations

- >3,400 graduate student respondents internationally
- 78% reported they are likely or very likely to pursue an academic research career

Although 58% of respondents plan to work as a postdoc, few expect to do so for more than 6 years.
Success of New Research Project Grants

Percent Success of New RPG

NIH Doubling

NIH RePORTER
Biomedical Science Today

- Low success of NIH grants
- Pressure from institutions to secure funds “soft-money” positions

Limited Rewards of Science

- Insufficient resources
- Few tenure/track jobs
- Longer post-docs

SYSTEM FAILURE

Hypercompetitive Environment Leading to Counter-Normative Behavior

- Secrecy
- Self-interestedness
- Limits creativity, originality, risk taking

- Cut corners, rush into print, disaggregate findings
- Irreproducible results

- Excessive demands on scientists’ time
- Burnout, stress, job dissatisfaction
Bad-Apples & the Responsibility of Institutions

• Too often are scientists dismissed for cases of misconduct while institutions remain virtually blameless

• Institutions have a moral responsibility to promote research integrity

What can institutions do?

NIH & Research Funders

Universities, Colleges & Research Centers
• NIH should determine how many early career scientists should be supported in a given year
• Increasing budget is not the only answer
• Limit number of students on research grant support
• NIH should develop policy/programs to support for mid-career scientists
Cap NIH Funding

- Goal: liberate funds for junior & mid-level researchers
- 10% of NIH researchers have 40% of funds
- Cap at 21 points on Grant Support Index (GSI) = ~3 R01s
- Involves ~6% of NIH PIs
• Research on research integrity is funded by smaller federal agencies

• NIH should also fund research on research integrity as it relates to biomedical and behavioral science
• Assess institutional integrity climate: SOuRCe

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ORIGINAL PAPER

Relationships Between the Survey of Organizational Research Climate (SORC) and Self-Reported Research Practices
A. Lauren Crain · Brian C. Martinson · Carol R. Thrush

• Measures institutional factors of research integrity including ethical leadership, socialization and communication processes, and the presence of policies and procedures to address research integrity
Decouple Labor from Training Function

- Limit the number of doctoral students paid from grants
- Institutions can pay students directly
- Recruit students receiving support through fellowships/traineeships
Broaden Career Options for Students

• Institutions can develop career option programs e.g., internships, seminars

• Incentivize mentoring for faculty e.g., mentoring award

• Train the trainer about the value of non-research science careers
Staff Scientists

• Create more staff scientist positions and limit soft money positions

Staff scientists find satisfaction in playing the support role

By Maggie Kuo  |  Mar. 29, 2017, 4:30 PM

- Harvard University: 1,316
- University of California, Los Angeles: 975
- Stanford University: 944
- Cornell University: 672
- University of Wisconsin, Madison: 648
- University of Michigan: 600
- University of California, Berkeley: 598
- University of Washington: 573
- Columbia University: 518
- Duke University: 509
- University of Minnesota: 443
- University of California, Davis: 424
- University of Pennsylvania: 412
- University of Arizona: 367
- New York University: 353

• 25,200 staff scientist positions; 63,861 post-docs
Take Home Messages

• Institutions bear responsibility for research misbehavior/misconduct and should be held accountable.

• Universities/colleges & funders can promote research integrity and a sustainable environment through several programs.
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