

Recruiting, Managing and Growing the Early Career  
Researcher: What Every Publisher Needs to Know  
About These New Knowledge Workers!

**Patricia Phelps, PhD**

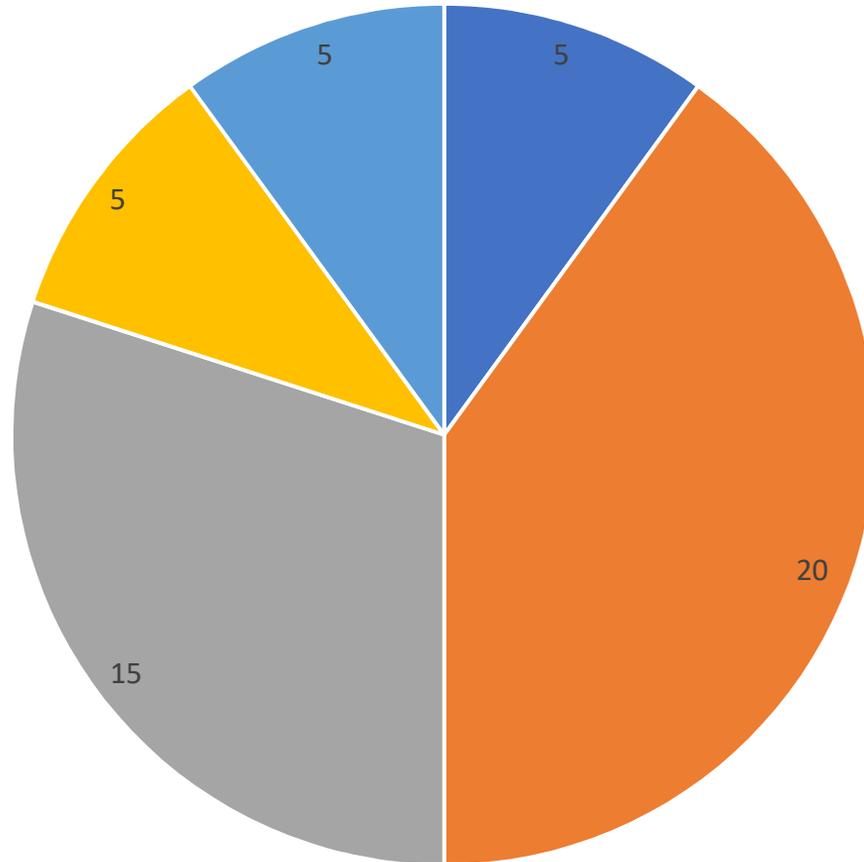
**Director, Professional Development and Career Office**

**Johns Hopkins Medical Institute**

# JOHNS HOPKINS UNIVERSITY QUICK FACTS – 2015 DATA

- \$1.9 billion in research funding across 1367 PIs
- 4663 Faculty: 42% female and 58% male
- 1044 Full professor | 736 Associate Professor | 1242 Assistant Professor | 1641 Other Ranks
- Five Year period - 20% Increase in Assistant Professor Rank
- 750 PhD students | 1560 Postdoctoral Fellows
- Publications – Data not available

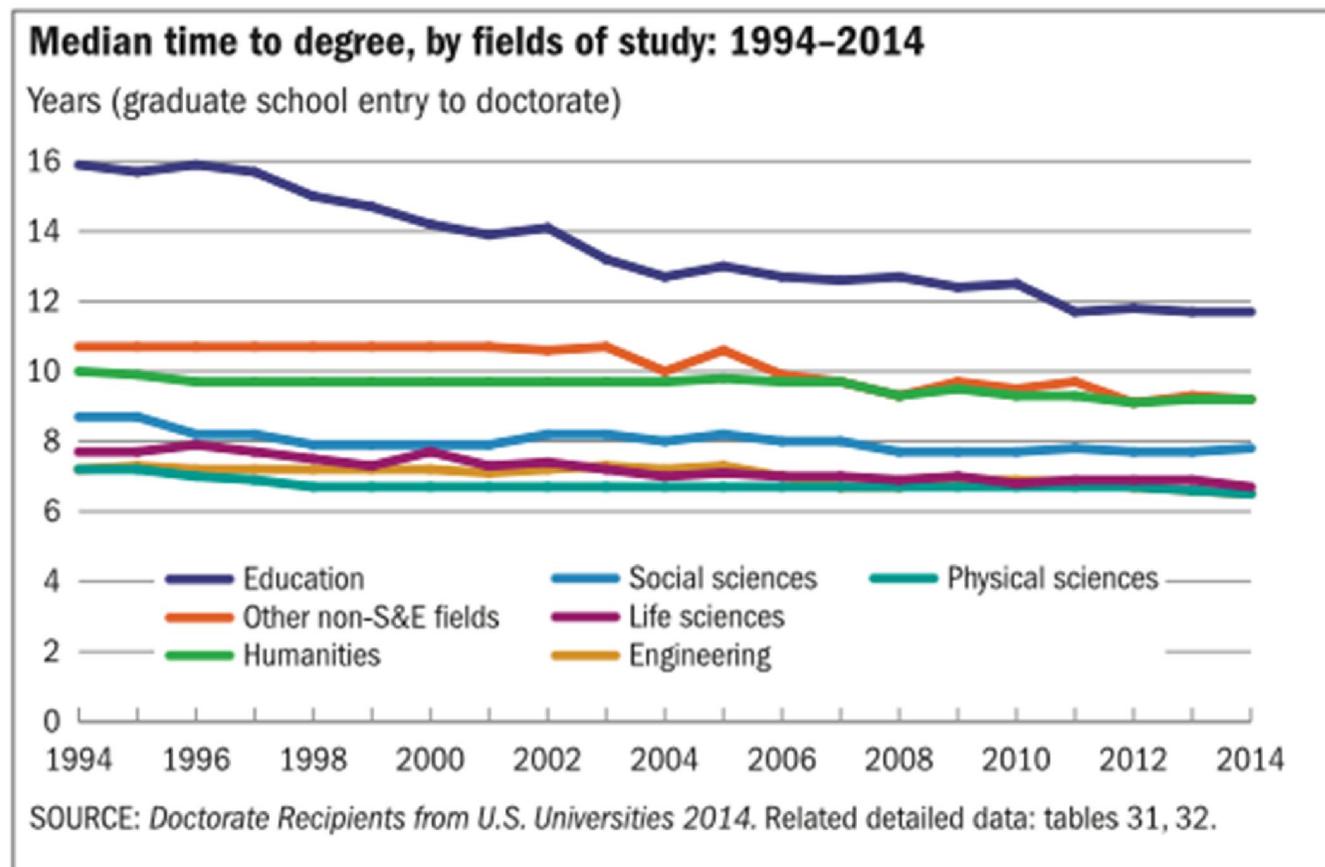
# RESEARCHER INTERVIEWS



- PhD student
- Postdoctoral Fellow
- Assistant Professor
- Associate Professor
- Professor

# GRADUATE/PHD STUDENTS

- Create standard submission format – eliminate need to learn how to publish with each publisher
- Decrease review and publication timeline



# POSTDOCTORAL FELLOWS

- Enhance editorial expertise - quality of research and reviewer selection
- Improve transparency and quality of peer review process
- Oversight of fraud, data quality and reproducibility
- Decrease review and publication time
- Burden of minimal data for publication is too high
- It is important to publish negative data, resources are being spent to reproduce negative data



**Competitive Academic Job Market**

# ASSISTANT PROFESSOR

1. Unfair peer review - Lack of transparency
2. Lack of public access
3. Increasing publishing costs
4. Fake journals spreading bad science
5. Inconsistency across journal in accepting preprint archives
6. Time to publication is too slow
7. Predatory journals
8. Acceptance rates
9. Pseudo-measurements of value
10. Availability of data
11. Unqualified journal editors
12. Too many journals
13. Chasing impact factors
14. Minimal publishable burden
15. Selective publication of positive results; negative results are valuable



# ASSISTANT PROFESSOR

“That now days the editors and reviewers want everything on one paper, for everything I mean every technique in earth. No matter what your message is or what you want to show, they always say that is too descriptive or they want more mechanism. Using all these techniques, from classic to the most fancy ones makes one single paper to take many years to go out and the price to be unaffordable. Then that hurts your productivity and your chances of getting a grant and becomes a vicious circle, instead of a virtuous circle”

# ASSISTANT PROFESSOR

“What is "good" anymore? Peer review is inherently flawed. The conclusions drawn are often overreaching. The media interprets it all however they want. Most physicians can't understand the stats to determine if it is good or not”

# ASSOCIATE PROFESSOR

- Time to publish
- Paying for publication becoming more popular
- Pressure to publish at cost of reproducibility
- Growth of predatory journals
- Ensuring high quality reviews

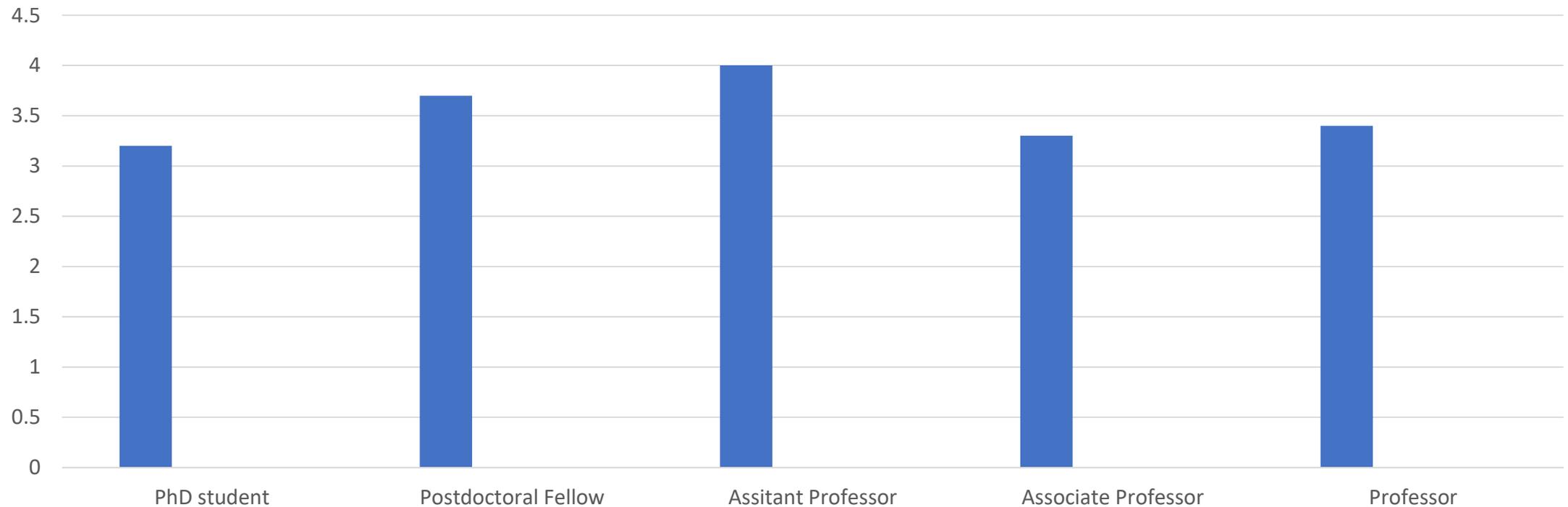


# PROFESSORS

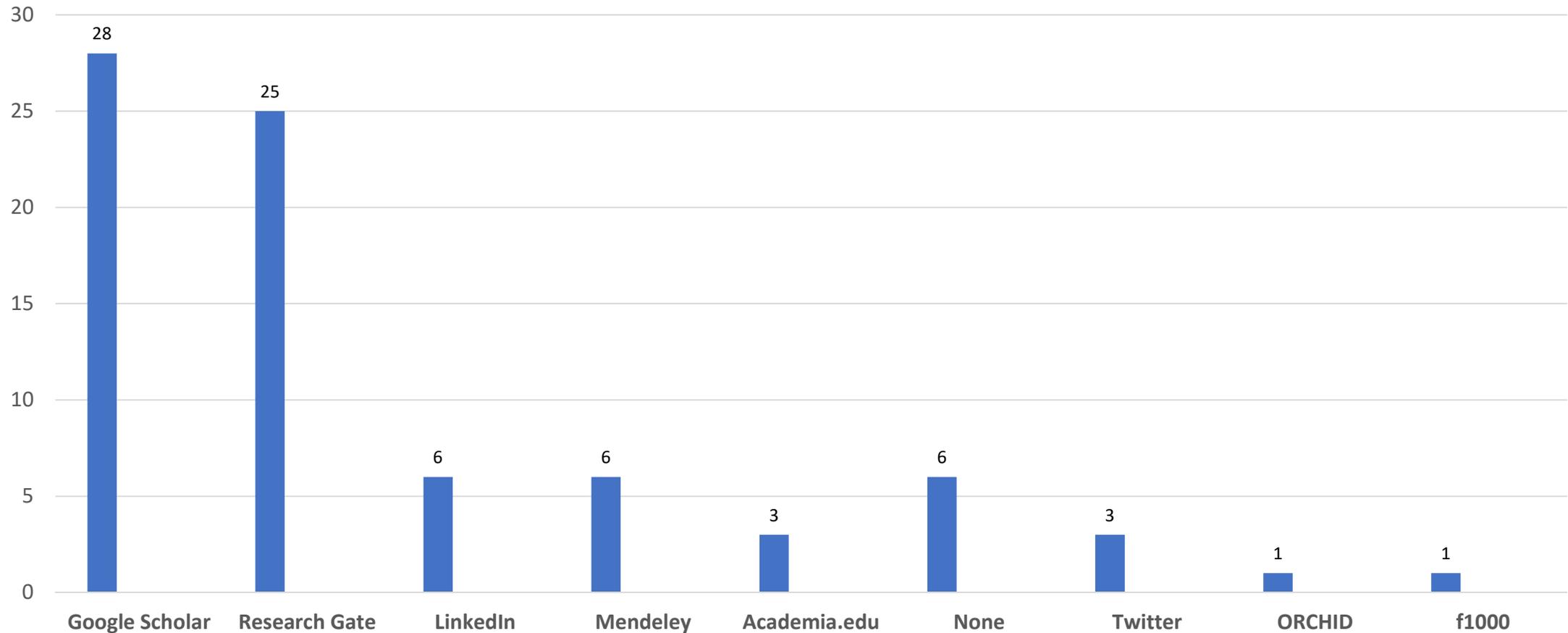
- Quality of open access journals – unedited papers are difficult to read
- Demands on reviewers – too many journals
- Inexperience of many editors
- Preprint policy unclear
- Publishing cost
- Review process is inconsistent and often not helpful
- Quantity valued over quality data

# HOW IMPORTANT IS PROMOTING YOUR RESEARCH IN SOCIAL MEDIA?

Chart Title



# WHAT TOOLS ARE THEY USING TO PROMOTE THEIR RESEARCH?



# RECOMMENDATIONS FOR THE CURRENT STATE

- Implement a “journal integrity score”
- Universal formatting is severely needed – cascading submission strategies or no formatting requirements unless paper is accepted
- Implement post-publication peer review
- Publishing credits for peer reviewer time (color figures, open access etc.) – An alternative to paying reviewers
- Introduce machine learning into selecting peer reviewer’s

# DATA MANAGEMENT

- Only 14% cited specific data management tools like REDCap



# RECOMMENDATIONS FOR THE CURRENT STATE

- Negative findings and replication failures need a place in the scientific literature – create a journal or open access system to publish negative data and prevent wasted resources replicating experiments already conducted.
- Quit printing journals thus reducing costs
- Provide statistical review as part of editorial service
- Implement improved services for a fee – Expedited review, editorial summary of reviews detailing changes needed, etc.

# SHOUT OUT FOR ELIFE – PAIN FREE PUBLISHING

“I really love what eLife has done. They are very transparent. The reviews are visible with the published paper along with how the author addressed them. The turnaround time is much faster than the average journal and the reviewer comments are clear and well communicated”

# FUTURE CONSIDERATIONS

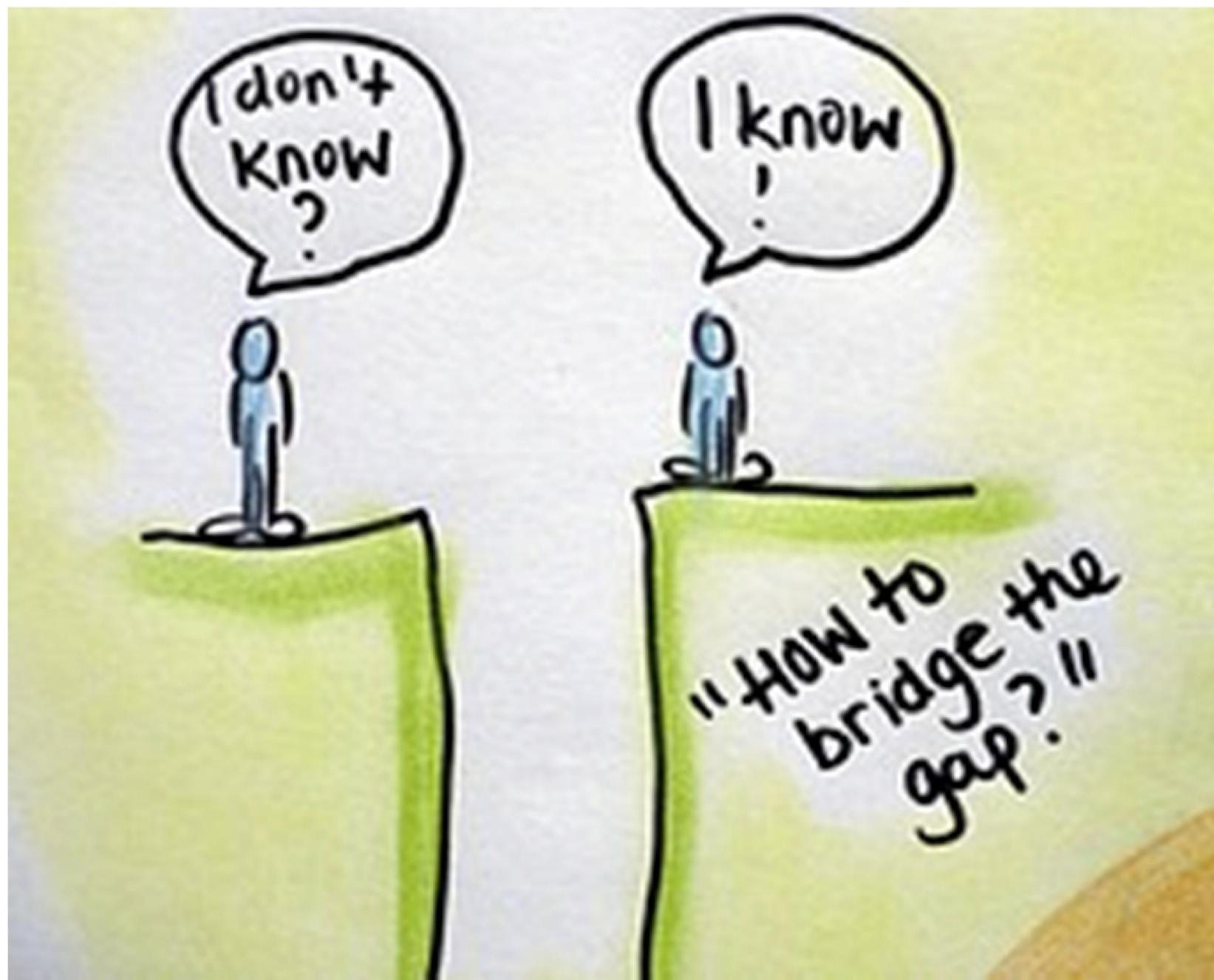
- The amount of data to be published will be increasing dramatically. Publishers should invest in powerful search tools so readers can find relevant information easily
- Implement more technology for presenting rich data
- Open access should not just be for the journals but also the data and tools - including mouse and cell lines.
- Pre-prints could lead to a “Wild West” of sloppy claims that are never peer reviewed.
- Current model that faculty review manuscripts submitted to for profit journals without compensations is not sustainable if the goal is thorough critical review.

# CONCERNS ABOUT THE FUTURE OF PUBLISHING

- Reliance on impact factor and influence on career
- Publication standards will lower based on who can pay for open access
- Society journals financial collapse
- Peer review getting worse not better
- Publishing costs rising
- Becoming completely controlled by a few publishing houses
- Too many journals will result in publishing poor science

# HELPING THE YOUNG INVESTIGATOR'S CAREER

- Track and set goals for young investigator articles
- Create a check box for a young investigator and improve the publishing process for them
- Reduce the cost for young investigator's – create a sliding scale
- Create a journal for brightest young investigators or a section of Science/Cell/Nature that highlights exciting new investigators
- New Investigators often have exciting and innovative work but lack large teams to support the “complete story” reviewer's seek - how can you accommodate them so they can published and then get the grants to support developing the “complete story”



# SCHOOL OF MEDICINE – TRAINING INFLUENCES



750 PhD students



1560 Postdoctoral Fellows



2,700 Faculty

**Ph.D. Program**  
**PI**  
**Department**  
**Career Office**  
**Student Association**  
**Conferences**  
**Library**

**PI**  
**Training Program**  
**Department**  
**Postdoc Association**  
**Career Office**  
**Conferences**  
**Library**

**Department**  
**Faculty Development**  
**Conferences**  
**Library**

# SCIENTIFIC PEER REVIEW

- Strong interest from Postdoctoral fellows in being peer reviewers
  - How do they become reviewers?
  - How do they actually review? – **THEY WANT TRAINING**
  - When they complete a review – Is it good? Can they get feedback?
  - What is the bar for various journals? How do they know what the bar is? - **THEY WANT REVIEW GUIDELINES FOR EACH JOURNAL**

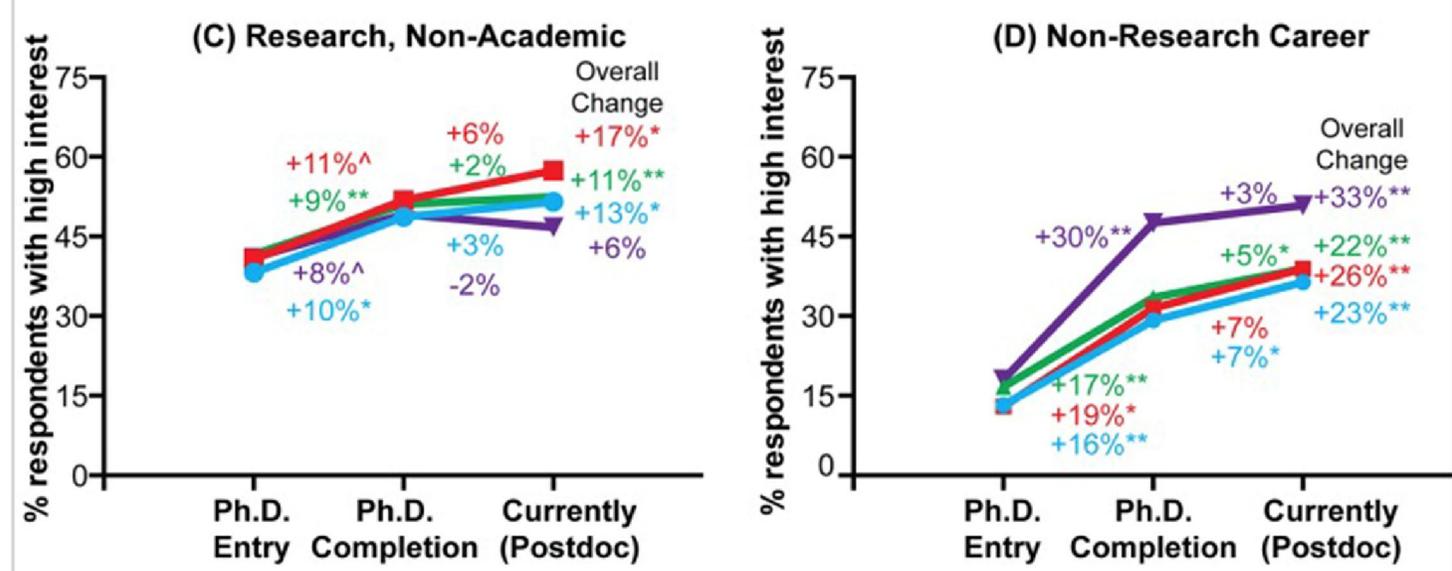
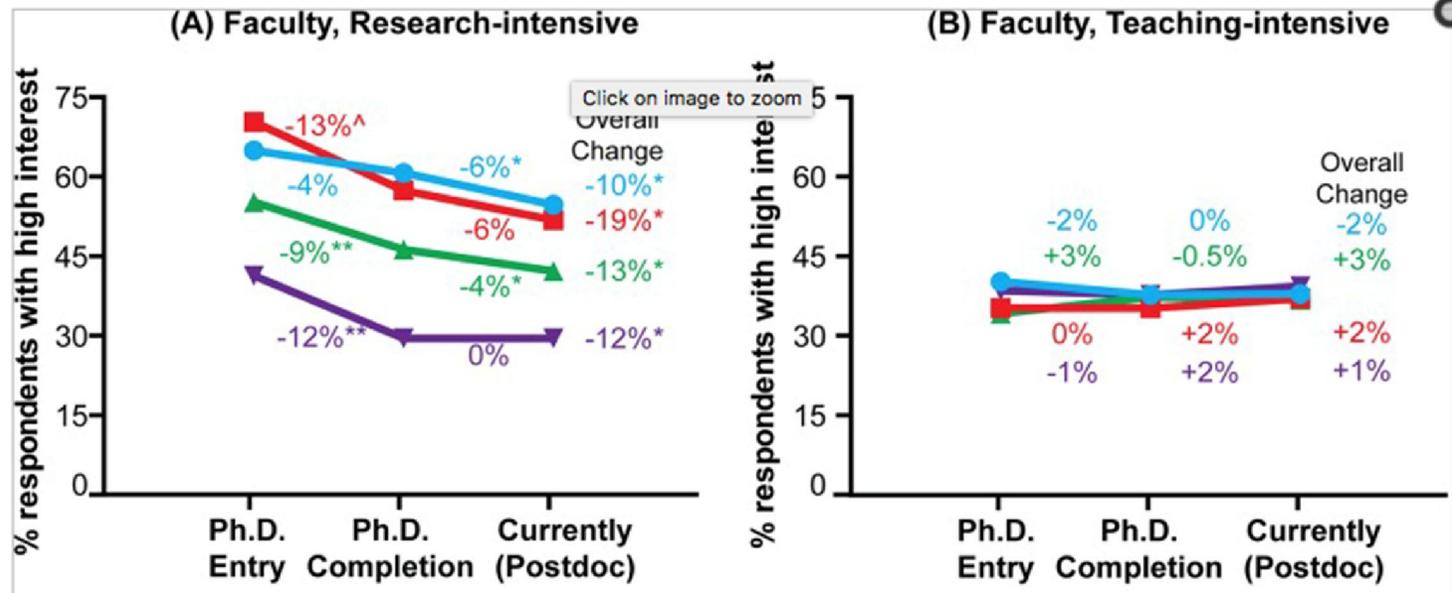


# PUBLISHERS CAN PARTNER WITH INSTITUTIONAL TRAINING STAKEHOLDERS TO HOST WORKSHOPS

- Reviewer Training
- Data Management Tools
- How to Get Published
- Promoting your Research
- Careers in Publishing
- Where to Publish
- Writing a Scientific Paper
- Lay Audience Summary

# MARKETING YOUR RESOURCES

- Include examples of resources/training materials in email correspondence (reviewer requests, editor feedback, notification of submission from journal)
- Host event for new investigators at scientific conferences – the young investigators feel editors are spending their time with established researchers.
- Create publishing guides and share with training programs – they can provide them at orientation.



■ Well-represented, Male (WRM; n=257)      ■ Underrepresented Minority, Male (URMM; n=54)  
■ Well-represented, Female (WRF; n=547)      ■ Underrepresented Minority, Female (URMF; n=122)

Level of significance (within group change over time period): \*\*p<0.001 \*p<0.05 ^p<0.10

**23.2% of our Postdoctoral Fellows transition into Academic Faculty Positions**

Gibbs KD, McGready J, Griffin K. Career Development among American Biomedical Postdocs. F. Hatfull G, ed. *CBE Life Sciences Education*. 2015;14(4):ar44. doi:10.1187/cbe.15-03-0075.

# SUPPORT DIVERSE CAREERS WITH SCHOLARLY PUBLISHING OPPORTUNITIES AND TRAINING

- Science Policy
- Regulatory Science
- Science Outreach
- Pedagogy
- Education Administration/Training Paradigms
- Consulting
- Data Science
- Research Administration
- Field Application Scientist

# WHAT ONE THING WOULD YOU LIKE PUBLISHERS TO CHANGE?

- Improve peer review and editorial oversight
- Reduce review and publishing time
- Uniform formatting
- Eliminate Impact Factor
- Pay reviewers
- Make review process transparent
- Costs to publish and cost to institutions for subscriptions
- Make all journals non-profits
- Post Publication Peer Review
- Abolish Open Access
- Have statistical team review every paper to insure soundness of analysis and conclusions