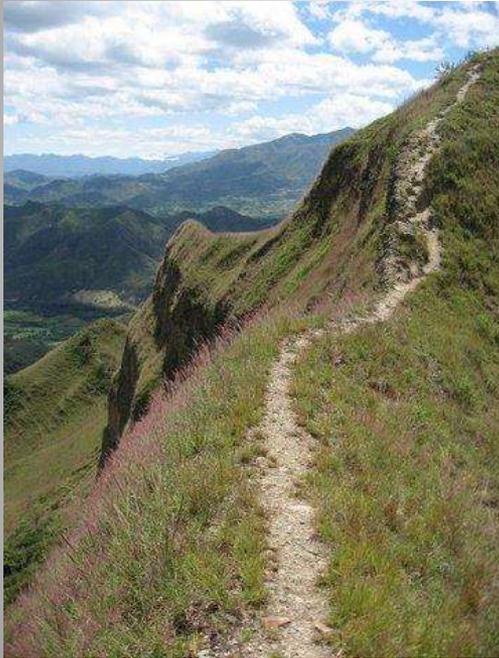


# Developing a Successful Research Career



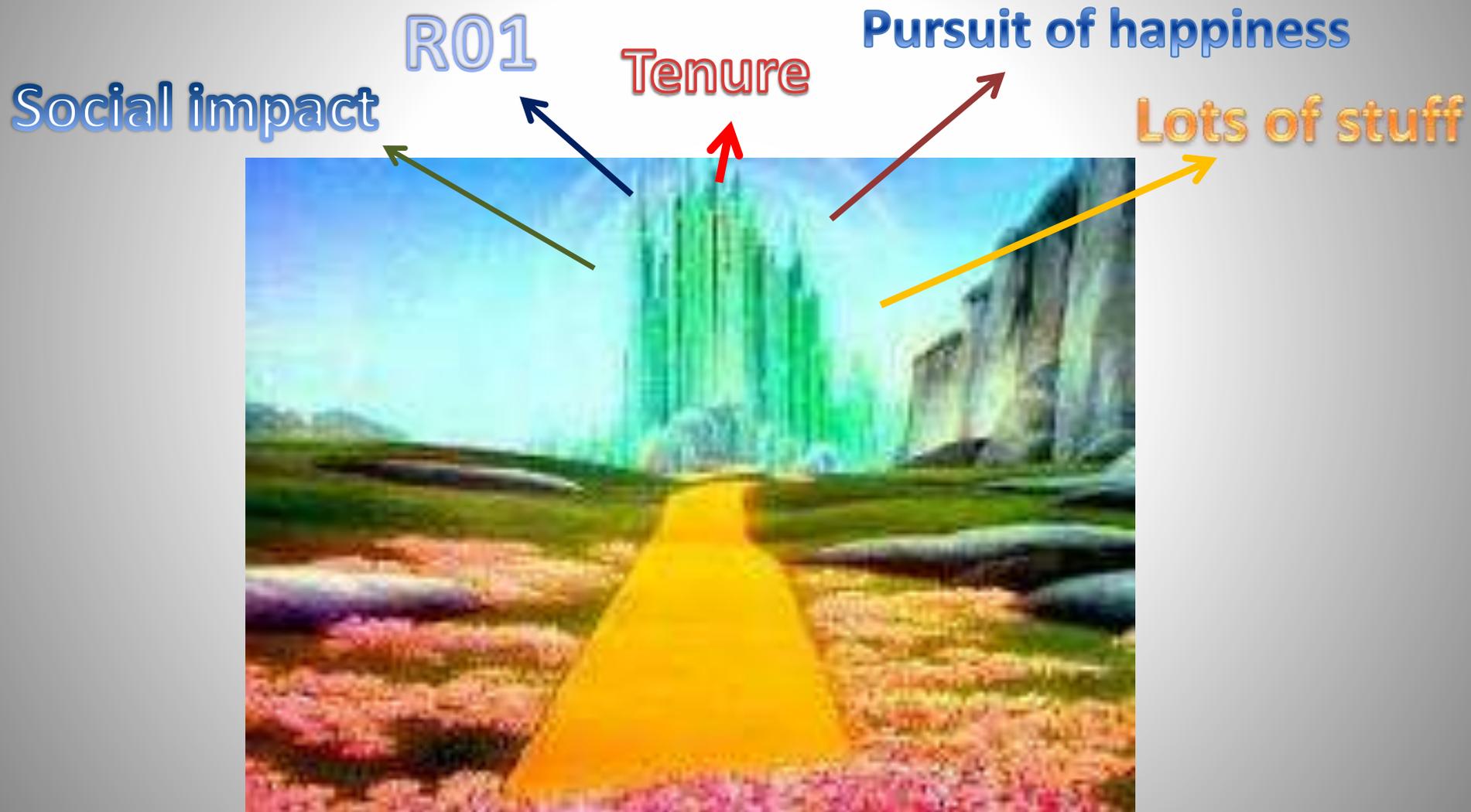
Ray D. Kent  
University of Wisconsin-Madison  
kent@waisman.wisc.edu

***2014 ASHA Pathways Conference***  
***Jan. 31 to Feb. 1, 2014***

# Point - Counterpoint



# Follow the Yellow Brick Road



“When there is a fork in the road, take it”  
(Yogi Berra)



# Point-Counterpoint Topics

1. Postdoc or not?
2. Where to publish?
3. What kind of grants to submit in early career?
4. How to negotiate a position?
5. How to survive and thrive in the first 3 years?

# Postdoc or not?

## **Pro – Heckle**

- Once in a lifetime opportunity
- Learn the skills and culture of research
- Learn how to compete successfully for grants
- Promote the vigor of the discipline
- Learn about new methods, new topics of research
- Prepare papers for publication
- Develop your career plan

## **• Con -- Snyder**

# Advice on Making the Most of a Postdoc

- The postdoc is more than a research job.
- Make a plan. The postdoc does not run itself.
- Get a head start. Make the most of start-times.
- Take advantage of professional-development opportunities.
- Find a mentor—and agree on your goals.
- Two (or more) brains are better than one.
- Go international. Maybe at least a conference?
- Network online as much as possible. Develop your website.
- Learn how the hiring game works.
- Balancing work and life. The first chapter in a career-long book.

[Smith, A., & Sutton-Grier, A., Making the most of your posdoc. *Chron. Higher Ed.*, July 15, 2010.]

# Postdoc or not?

## ***Pro* – Heckle**

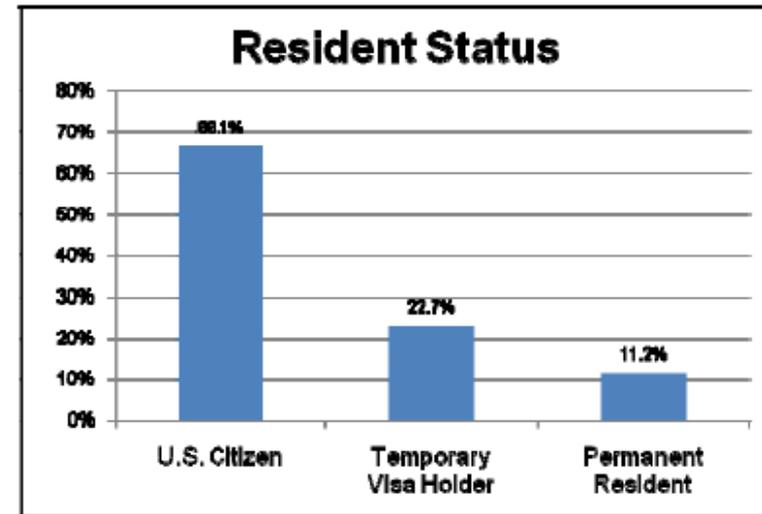
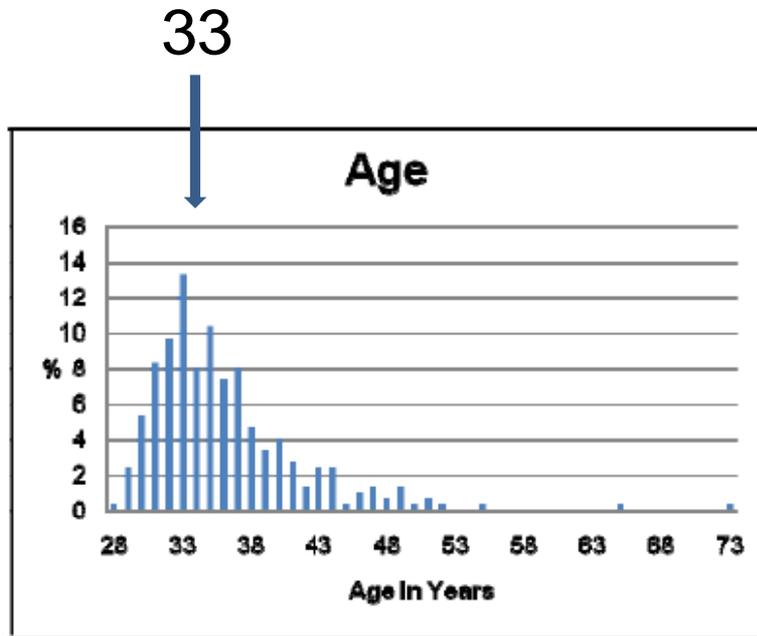
- Once in a lifetime opportunity
- Learn the skills and culture of research
- Learn how to compete successfully for grants
- Promote the vigor of the discipline
- Learn about new methods, new topics of research
- Prepare papers for publication
- Develop your career plan

## • ***Con* – Snyder**

- A term of indentured service
- Hear the clock(s) ticking
- Potential loss of income for term of postdoc; delay in repayment of debts
- Faculty positions in CSD are available without postdoc
- Jumpstart your career by skipping the postdoc
- Move to independence as a researcher and teacher



# Respondent Characteristics Pretest



Source: SRS Methodological Pretest

Note: Detail may not add to total due to rounding.

**63.9 % married, 41.2% have children**

Phou, K. Postdoc Data Project/Early Career Doctorates, Council of Graduate Schools (CGS) Research & Policy Forum, Sept. 22, 2010

# Borrowers' Average Debt at Graduation Climbs to \$29,400

Average debt at graduation from 4-year colleges approaches \$30K in 2012.

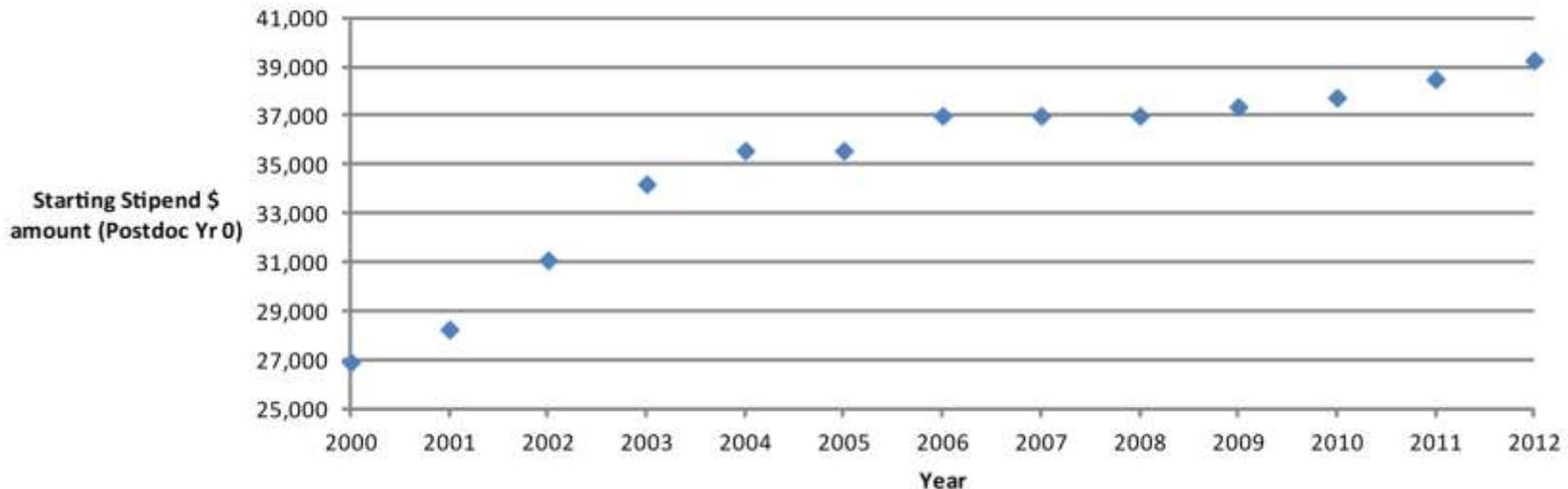
Data according to the report, ["Student Debt and the Class of 2012,"](#) produced by the Project on Student Debt, part of the nonprofit Institute for College Access & Success.

# Starting PhD NRSA Postdoc Stipends

President's budget plan for 2014:  
increase to **\$42,000**

42K

Starting PhD NRSA postdoc (Yr 0) stipend 2000-2012



(a) average salary for new Assistant Professor in CSD of about **\$60K** in 2010 [CUPA-HR]

(b) average Assistant Professor salary of **~\$59K** in CAPCSD 2008-9 Salary Survey

(c) median salary of a speech-language pathologist in 2012 of about **\$70K** (US Bureau of Labor Statistics, ASHA)

# Factors Related to Postdoc Successful Experience—Top Seven Factors

## Postdoc rankings, 2012

1. Advancement opportunities/career options
2. Funding/grants
3. (*tie*) Employer/situation
3. (*tie*) Networking
5. Mentoring
6. Direction and vision
7. Spouses, partners, family

## Supervisor rankings, 2011

1. Communication
2. Direction and vision
3. Work culture/environment
4. Training
5. Funding/Grants
6. Mentoring
7. Networking

Source: Powell, K., The Postdoc Experience: High Expectations, Grounded in Reality. Science/AAAS Custom Publishing Office, [www.sciencecareers.org](http://www.sciencecareers.org)

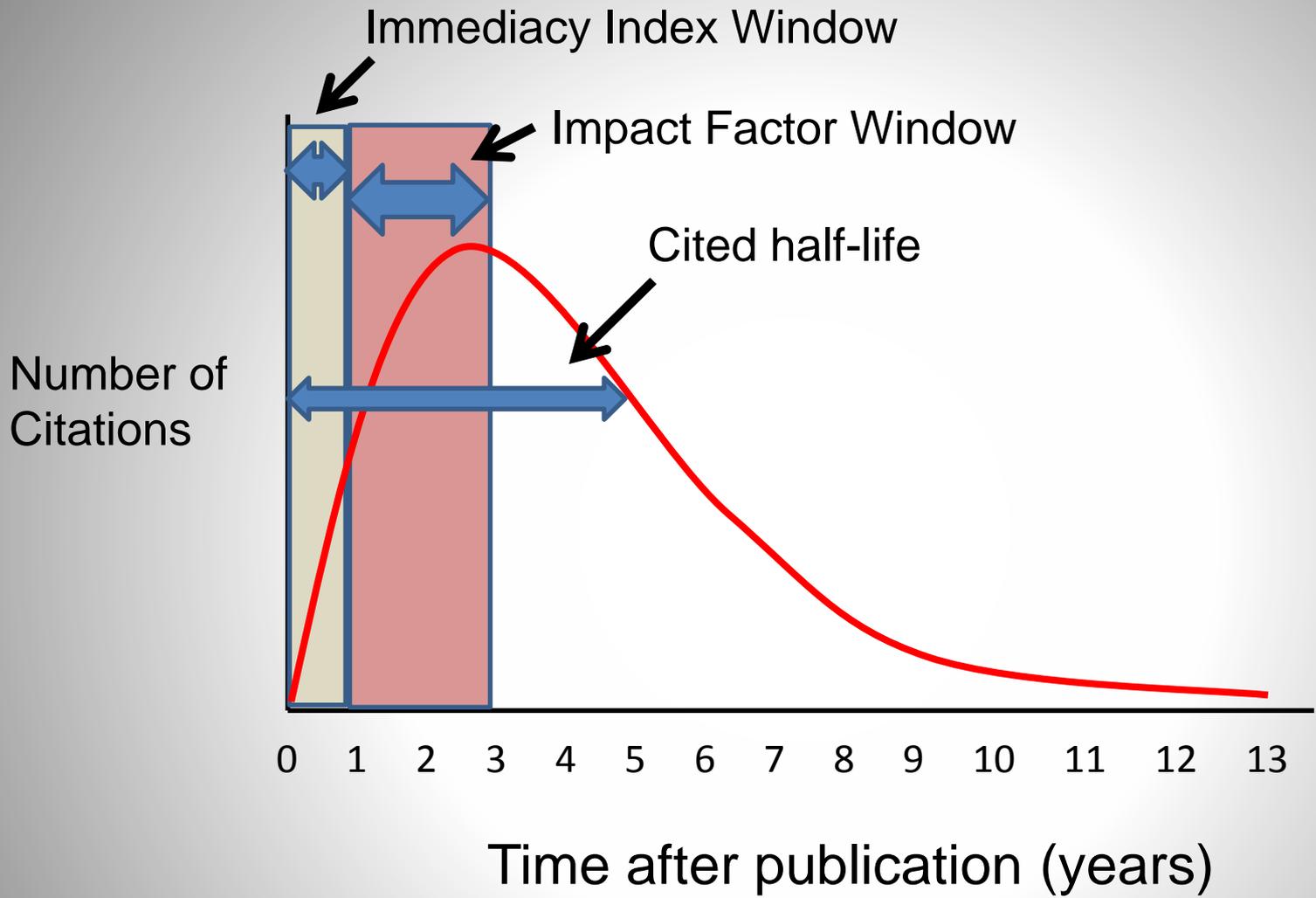
# Where to Publish?

## **Considerations:**

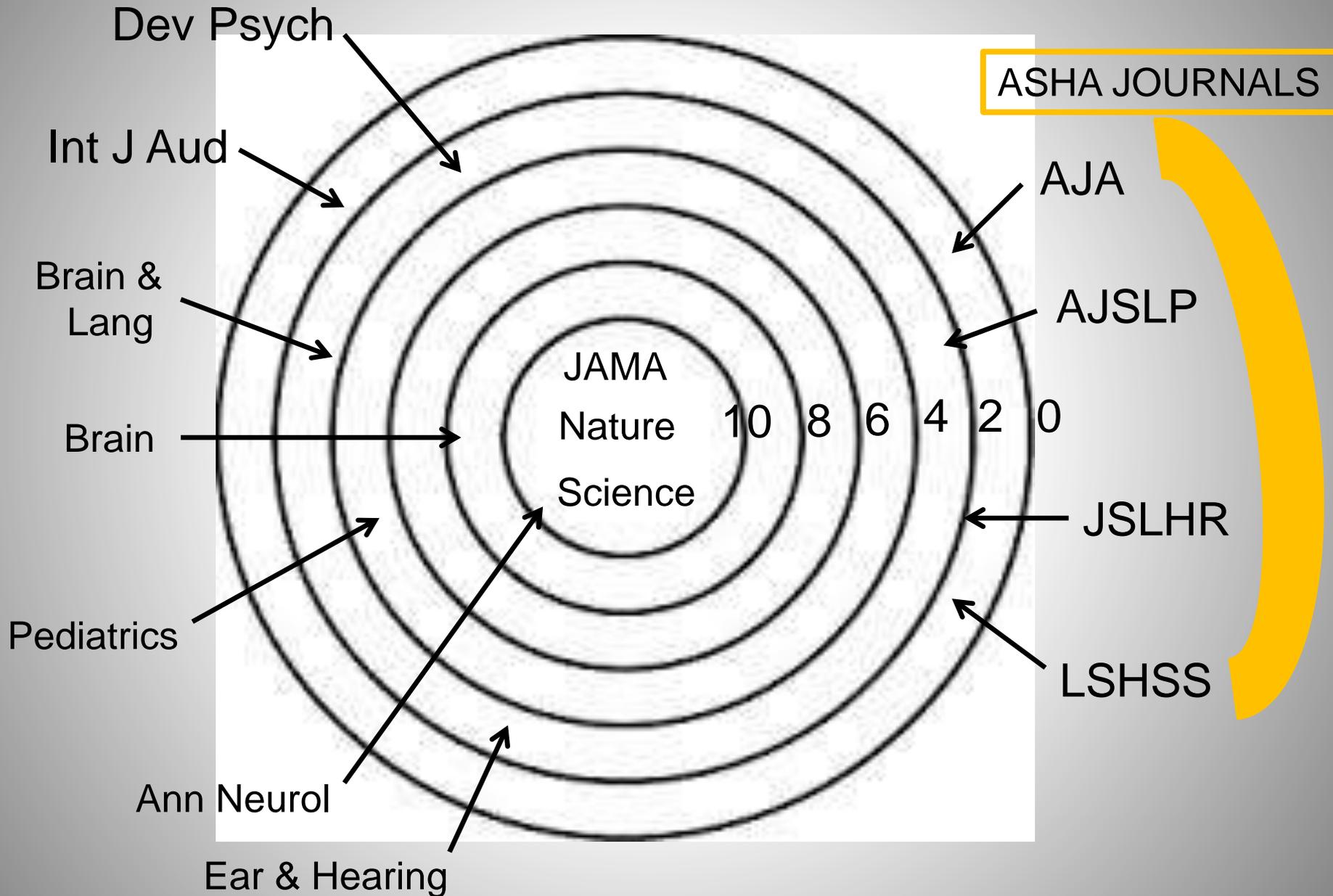
1. ISI Impact Factor
2. Audience
3. Precedents for your topic
4. Status within discipline
5. Review times
6. Other

# IF and only IF

- Impact Factor (IF) is the coin of the realm in judging scientific accomplishment.
- Aim for journals with high IF and work down the list if your paper is not accepted.
- In some European nations, an  $IF < 2$  counts as zero.



# Impact Factors



# Impact Factors for Select CSD Journals

- **1.441** - *International Journal of Language & Communication Disorders*
- **1.551** – *Journal of Communication Disorders*
- **0.18** – *Journal of Medical Speech-Language Pathology*
- **0.783** – *Clinical Linguistics & Phonetics*
- **2.537** – *Hearing Research*
- **1.63** – *Journal of the American Academy of Audiology*

# Let's Not Worship at the Shrine of the Holy Impact Factor

## Some Problems with IF

- Not repeatable
  - JCB Editorial
- Influenced by a small minority of papers
- Biased by number of scientists in an area
- Can be inflated by journal practices
- Measures only frequency, not quality



1. Just enter the title and/or abstract of the paper in the box
2. Click on 'Find journals', 'Find authors' or 'Find articles'.
3. *Jane* compares your document to millions of documents in *Medline* to find the best matching journals, authors or articles.

For 'Find journals,' results are returned for confidence rating, journal title, and journal influence

JANE search for title:

“Dysarthria in Multiple System Atrophy”

- *Movement Disorders* (1.15568)
  - *Journal of Neurology* (0.96435)
  - *JSLHR* (0.82575)
  - *BMJ Case Reports*
  - *Parkinsonism & Related Disorders* (0.85106)
  - *Brain: A Journal of Neurology* (3.67767)
- [Article Influence (AI) in parentheses (number of times an article is cited within 5 years of publication)]

# SCOPUS Journal metrics/Elsevier

- Source Normalized Impact per Paper (SNIP) measures contextual citation impact by weighting citations based on the total number of citations in a subject field.
- SCImago Journal Rank (SJR) is a prestige metric based on the idea that 'all citations are not created equal'.

# Not only IF, Maybe not IF at All

- Think outside the **IF box**
- Bibliometrics and scientometrics are an evolving science (and maybe an art?)
- Consider other measures of impact
- Gather data on the journals where you publish
  - Ranks and measures
  - How they reflect your major research area
- Think of potential letter writers for tenure and promotion decisions

# Another fork in the road... What Type of Grant to Submit?

**R03?**

**R01?**

**K award?**

**R21?**

**PRIVATE  
FOUNDATION?**



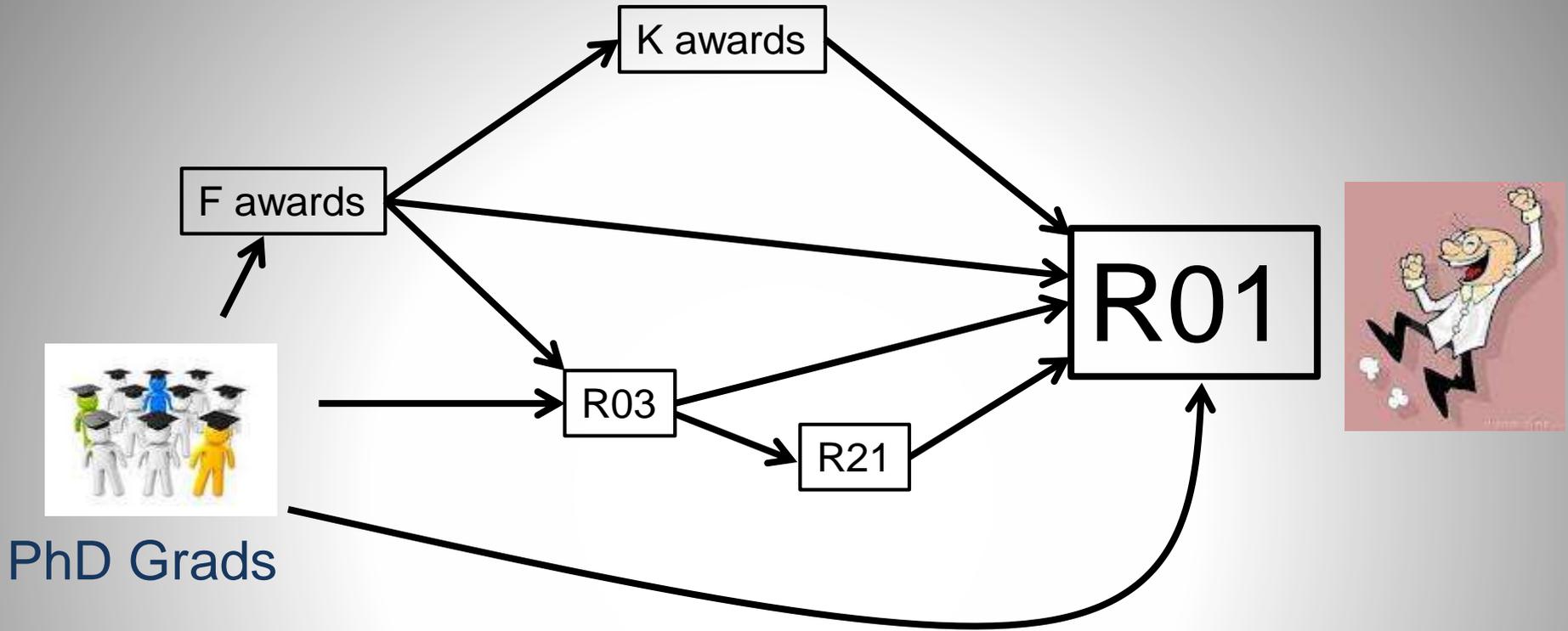
**Seed  
Money?**

# Research and Sponsored Programs\*

## Typical Functions in a Grant Lifecycle

- Finding funding sources
- Preparing proposals
- Setting up an award
- Managing an award
- Closing out an award

\*Or something like *Grants Administration Office*



PhD program  
or Postdoc

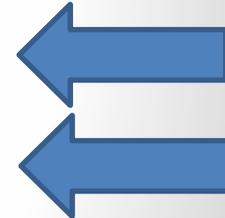
Early career  
researcher

Established  
researcher

# Examples of Pathways to the R01

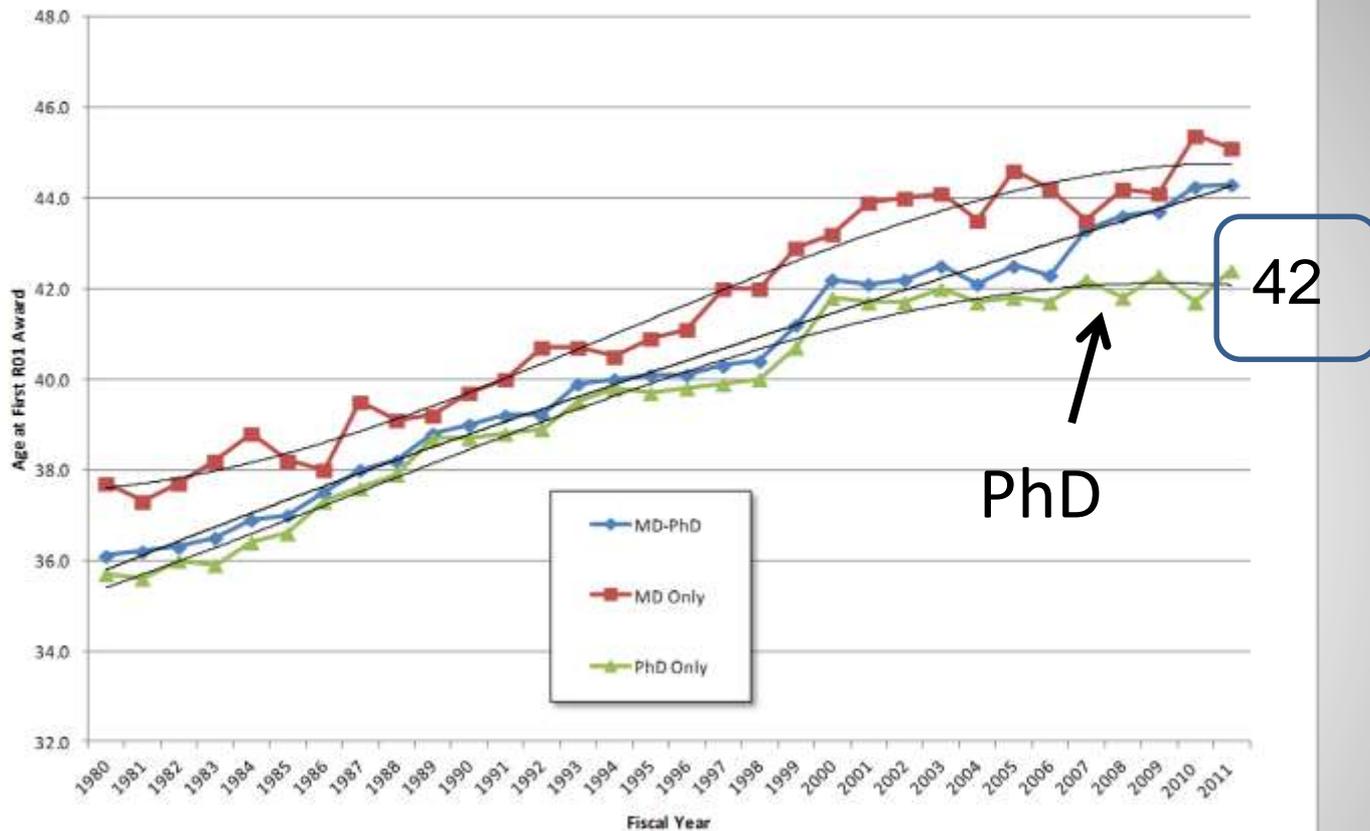
# Major Types of NIH Grants

Type of Award	Typical duration	Amount per year
T or F	2-4 years	Up to \$50K
K (various types)	3-5 years	Up to \$150K
R03	2 years	Up to \$50K
R21	2 years	Up to \$175K
R01	4-5 years	Typical \$250K Can be more



Think about the NIH Institute that is best for you.  
Think about paylines for each type of grant.

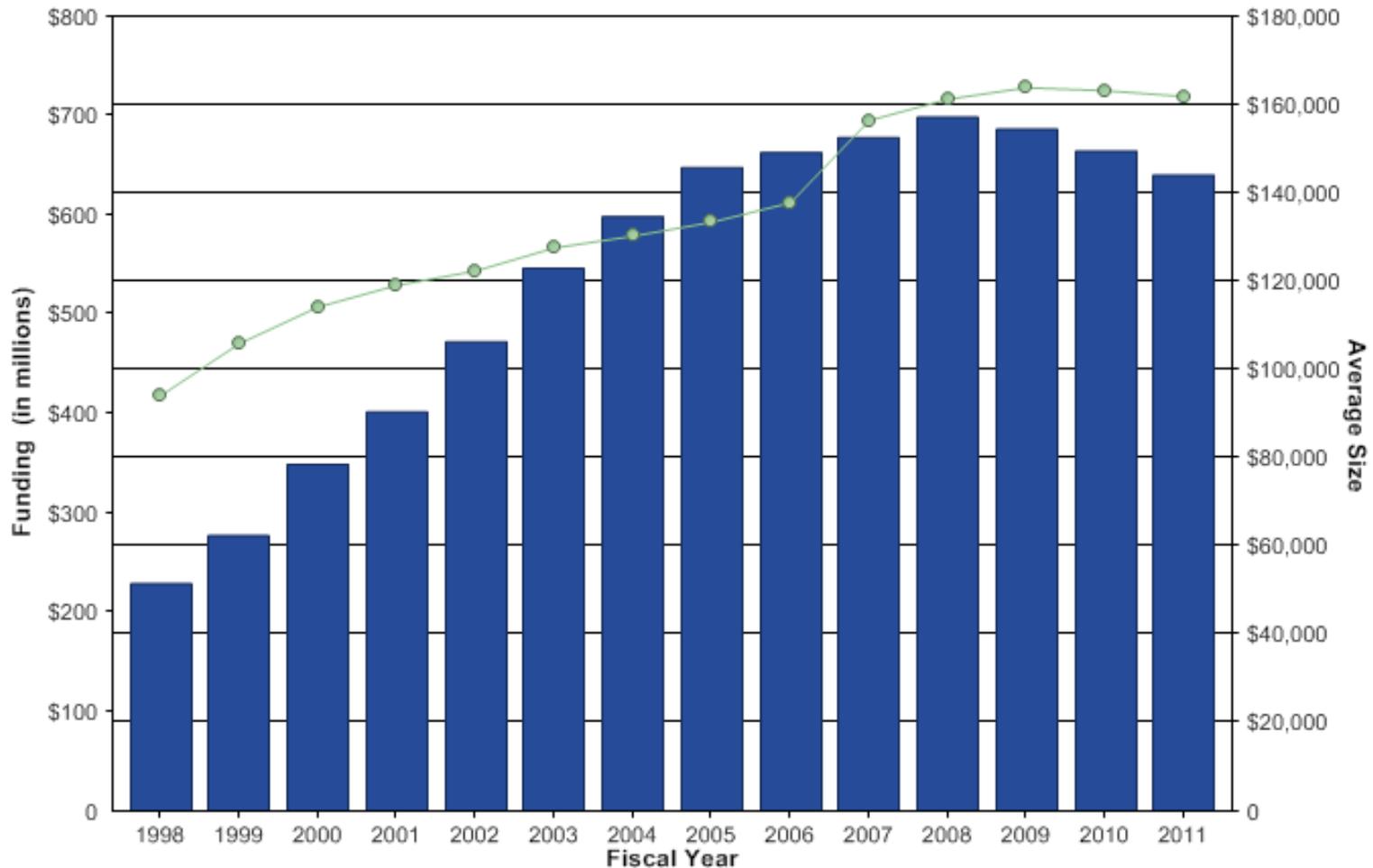
Figure 1. Average Age of Principal Investigators with MD, MD-PhD, or PhD at the time of First R01 Equivalent Award from NIH, Fiscal Years 1980 to 2011



**Get an early start with a K award or R03**

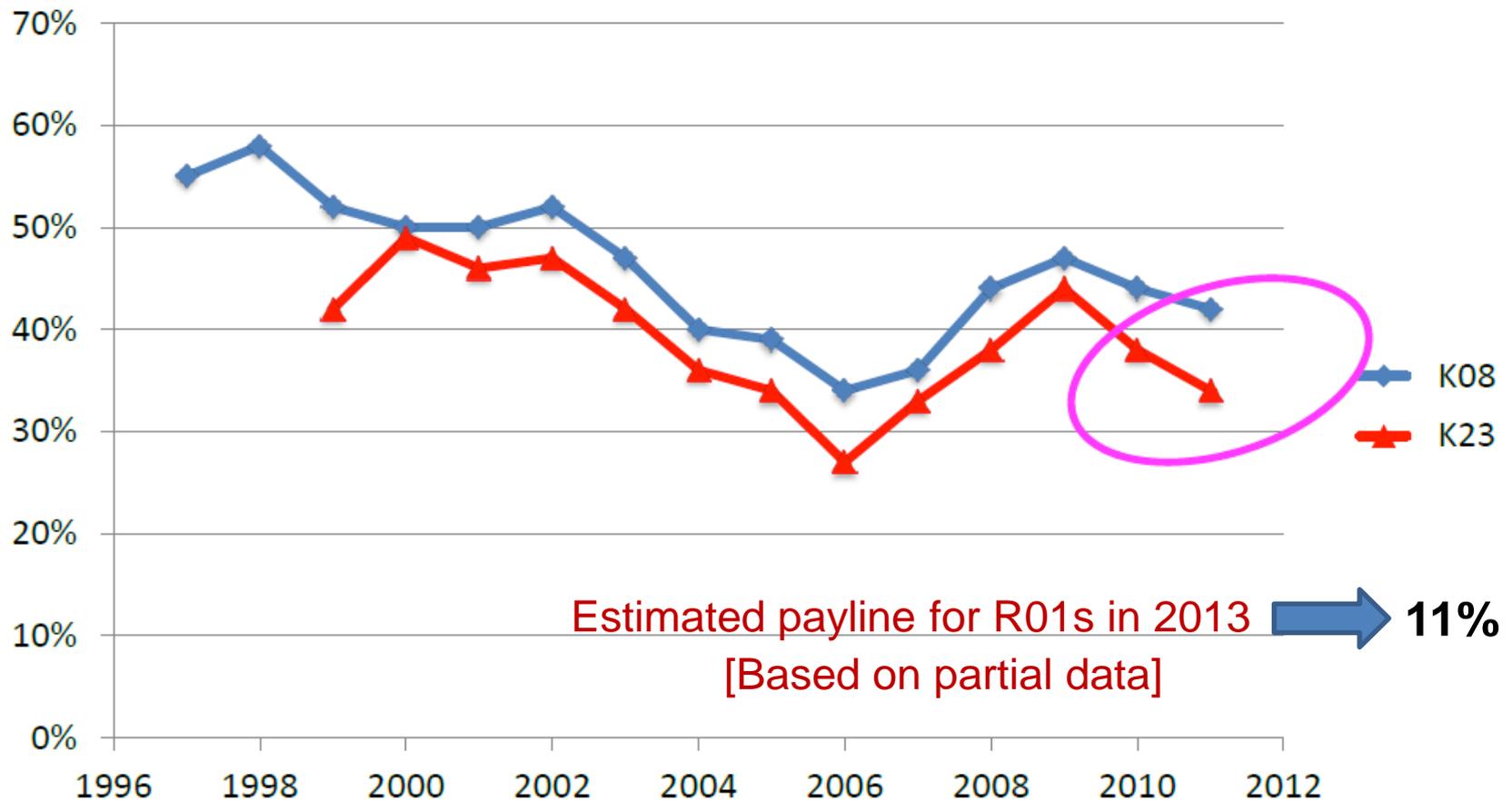
# Research Career Development Awards

## Total Funding and Average Size

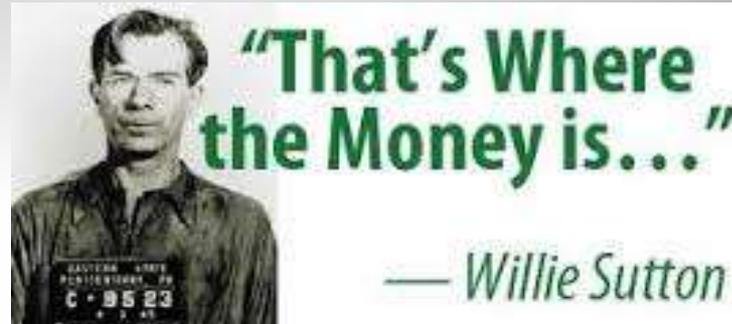


# NIH Success Rates for Selected K Activities

Fiscal Years 1996 - 2011



Asked of Willie  
Sutton: “Why do  
you rob banks?”



Why submit grant applications to NIH?

That’s where the money is.

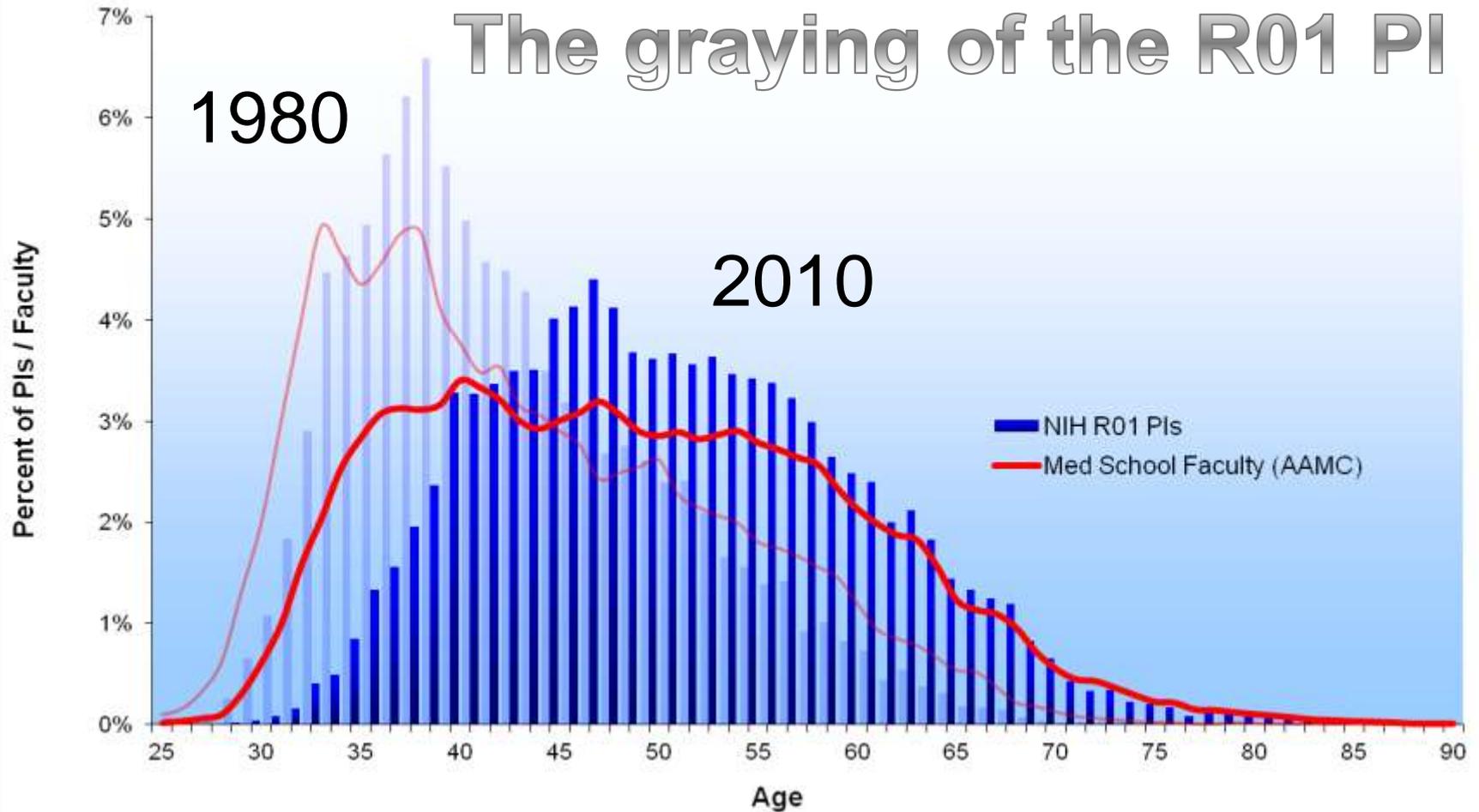
Why submit R01s?

That’s where the money is.

# By the Numbers...

- **34** – mean age of PhD graduate
  - Mary Ann Mason, The Future of the Ph.D., *Chron. of Higher Ed.*, May 3, 2012
- **39** – mean age of receiving tenure
  - USA Academic Career Structure, European University Institute
- **42** – mean age of receiving first R01-equivalent research award
  - Data from NIH
- **~65** – mean age of retirement

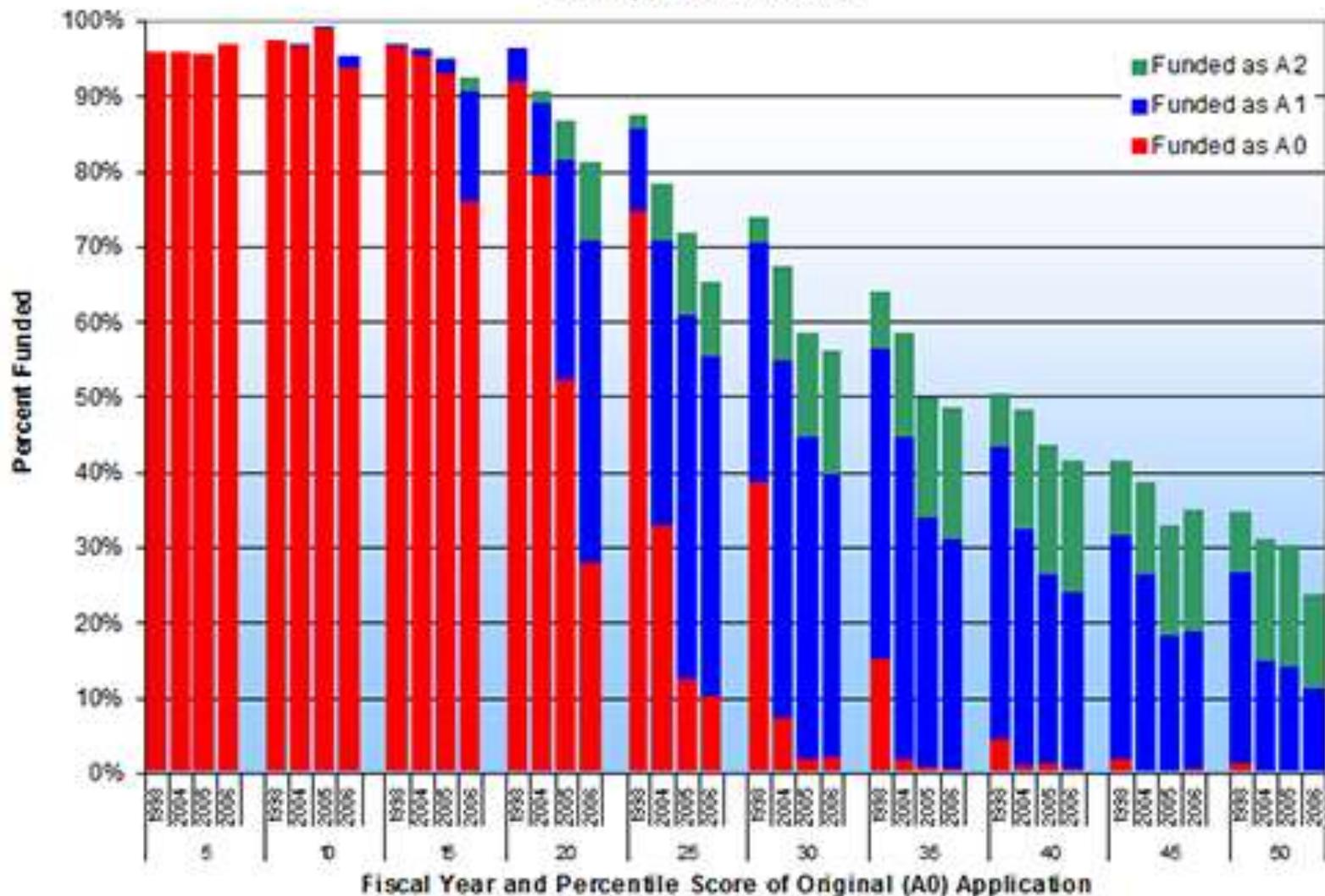
# The graying of the R01 PI



Age Distribution of NIH Principal Investigators and Medical School Faculty –  
*Rock Talk (blog)*, Feb. 13, 2012. See more at:

<http://nexus.od.nih.gov/all/2012/02/13/age-distribution-of-nih-principal-investigators-and-medical-school-faculty/#sthash.6OwG5rAL.dpuf>

## Percent of Unsolicited Type 1 R01 Projects Funded By Fiscal Year and Percentile Score of Original (A0) Application and Application Version



# How to Negotiate for a Position?

- Application Process
  - CV, letters, research/teaching statement
- The Interview
- The Job Talk
- The Offer
- Startup package
- Other stuff

# Picture this:

**You**



**They:**

- Department faculty
- Department chair
- Executive committee
- Dean and maybe a lot of deanlets
- University legal counsel
- Tons of experience

# How to Interview for a Position and Negotiate for Initial Contract

- Do your homework before the interview
- Prepare and rehearse job talk
- Outline a start-up package
- Take notes as you go through the process
  - Lab space, current equipment (if any), shared resources, possible collaborations
- Write a thank-you note afterward
- Review and compare with other job visits

# The Interview

- Prepare for a 2-day visit for most positions
- Study up before you go.
  - Review faculty list and know their specialties.
  - Know key things about the institution.
- You will be “on” all day, including rides to events, meals, interviews, classroom lecture, job talk, reception.
- Come with good questions and take notes.

# The Job Talk

- Not like any other kind of talk.
- Needs a logical development and clear exposition.
- Use humor sparingly if at all.
- Be sure to place your work in a larger context and ideally within a program of research.
- Do not exceed time limit—allow for Q&A.
- End the talk positively.
  - Do not conclude with a list of weaknesses or limitations.
- You are showcasing **yourself**. Try to show that you would be a valued and agreeable colleague.

# Start large

Place your work in a larger context (e.g., current theory, clinical practice, critical issue of some kind). Why does your research matter?

# Narrow middle

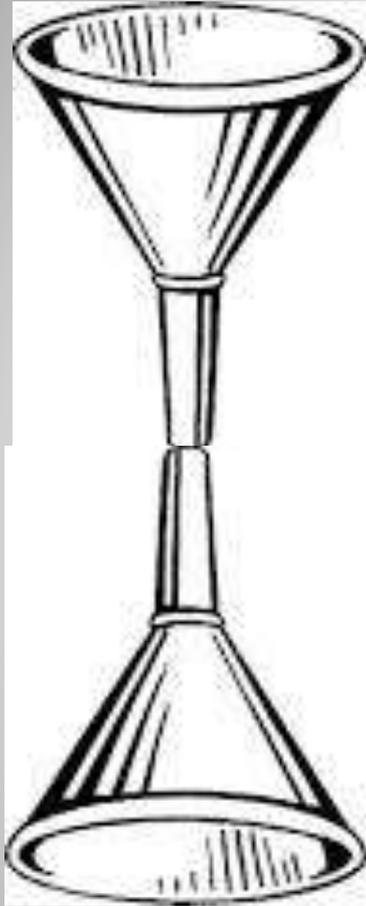
Be precise and focused in presenting purpose, methods, results.

# End large

Emphasize that your research makes an important contribution.

Describe its position in a program of research.

Link with introduction to make closure



# Other Job Talk Tips

- **Practice, practice** your talk and get feedback.
- Check on visibility and readability of slides.
- Proffread your slides!
- If a question takes you into complicated or unwelcome territory, invite the questioner to speak with you personally after the talk.
- Show that you are enthused about your work.

# Startup Package

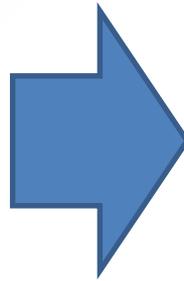
[Advice from Burroughs Wellcome Fund]

“One of the major keys to becoming successful for a new faculty member is to have sufficient resources at the beginning to start and maintain a lab and to ensure time to gather data in support of grant proposals and apply for funding. A new independent investigator should operate his or her lab in much the same way that a CEO of a small business operates.”

# Designing a Startup Package

## 1. One-page summary (category examples):

- Consumables
- Software
- Small equipment
- Large equipment
- Remodeling costs
- Travel
- Laboratory staff
- Other



## 2. Final steps

- Be prepared with a detailed list
- Be able to justify items
- Know your priorities
- Get it all in writing
- Negotiate on order dates (e.g., get large equipment asap)
- Ask someone with **experience** to review your list before finalizing it

# Startup Package – How much?

- Data not readily available across disciplines
- Startup costs vary greatly across labs
- Average startup costs for professor of biology
  - **\$403,071** (private Research 1 University)
  - **\$308,201** (public Research 1 University)

*[Reed Science Group Academic Sourcebook, 2005]*

- 2005 data from Burroughs Wellcome Fund
  - Average of **\$800,000** for PhDs and physician-scientists

[*N.B.*: BWF fellows are an elite group]

# How to Survive and Thrive in the First 3 years (Typical Initial Contract)

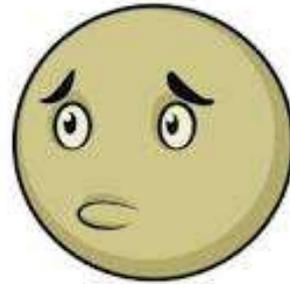
- Time management skills
- Setting priorities
- Working with mentors
- Take annual evaluations seriously
- Developing (and revising) a research plan

# The Drama of the First 3 years

Teaching evals

Committee service

Clinical supervision



Office hours

ADVISING

Papers and

Course prep

posters

Grant writing

ETC

# Suggested Goals

- Get your lab up and running asap.
- Collect research data in first 2 years.
- Try to teach a grad-level course or seminar to attract students to your lab.
- Set publication goals; get a writing schedule.
- Write and submit grants (2-3 per year, including intramural funds when available).
- Get connected: ResearchGate, LinkedIn, etc.

## Don't be a Prima Donna

- Protect your research but do your best to be a good citizen
- Work that you do not do (but should have done) in your department, division or unit will have to be done by someone else
- Be a team player on visible and important projects
- Strive to be constructive and forward-thinking



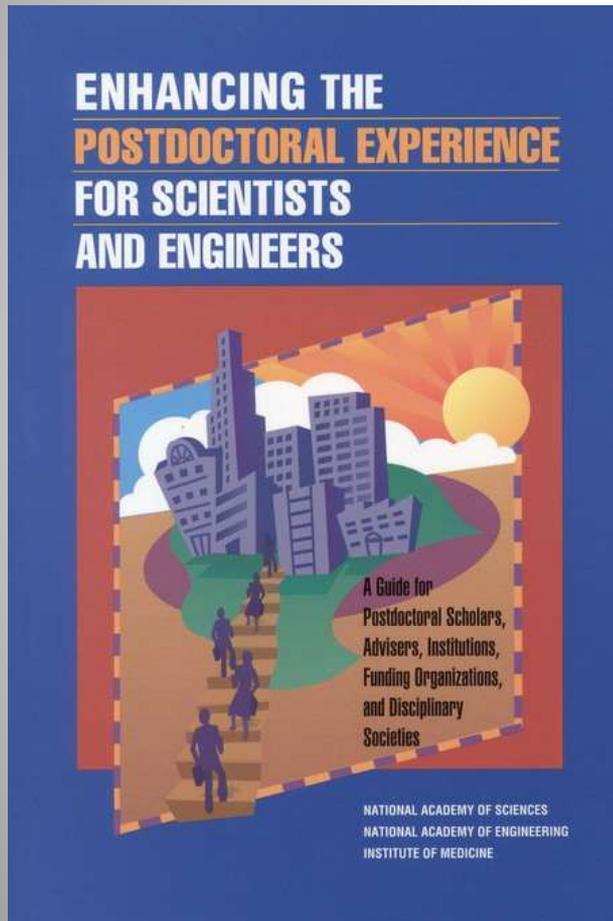
# Vital Signs for a Research Career

- Independence
- Programmatic approach to research
  - Short-term & long-term goals
  - Reappraisal and revision perfectly OK
- Productivity
- Balanced effort across areas of responsibility
- Reputation (local, national, international)

# Programmatic Research

- Definition: a series of research projects within a conceptually defined framework
- Typically the projects have a logical connection that underlies their serial conduct
- Multi-year funding is implied
- BUT, investigators should always be open to new opportunities

# Good resource



## Advice culled from various sources:

### Publishing-

- Publish every year
- Try to be the first at something in science
- Be strategic about publishing -think **impact**
- Get first-author publications
- Make the most of your dissertation

### Professional meetings-

- Be visible in a good way
- Network – on your own and through mentor

### Career planning-

- Define and re-define goals
- Track your experiences and skills

# Citizen Scientist

## Being a scientific world citizen

- Reviewing articles, only take on only what you can do
- Maintain confidentiality
- Build bridges
  - Across fields, interdisciplinary research
  - Across laboratories
  - Across countries

Support the next generation of researchers

Help build the field

# Point-Counterpoint Topics

1. Postdoc or not?
2. Where to publish?
3. What kind of grants to submit in early career?
4. How to negotiate a position?
5. How to survive and thrive in the first 3 years?

**Next: Why and how to develop a research plan**