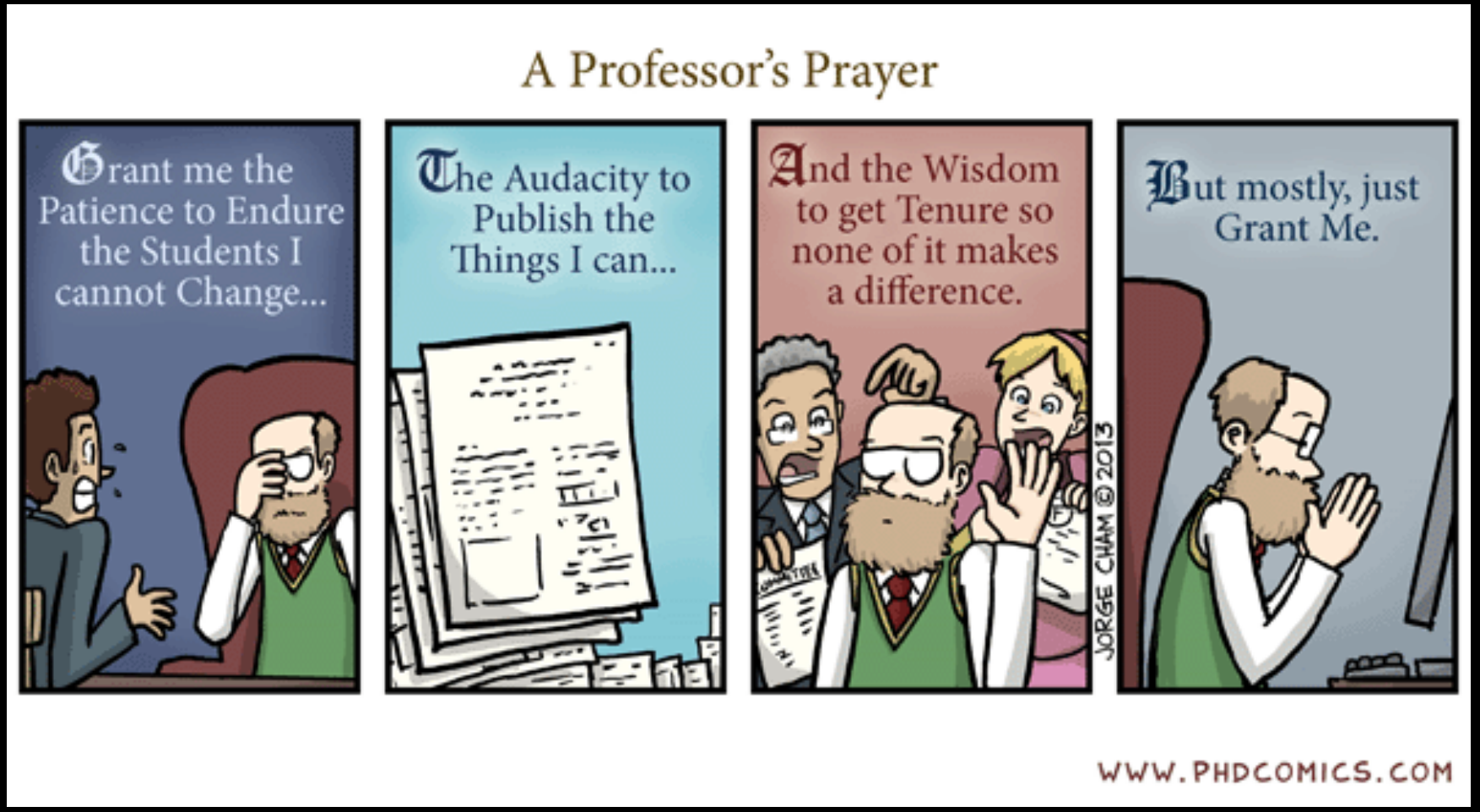
FEARLESSLY FINDING FELLOWSHIP AND FUTURE FUNDING FOR FAME AND FORTUNE

- ANKUR DESAI, AOS, DEPT SEMINAR

Science costs money



How much do you cost?

Graduate Student

50% RA salary 12 months is $21,649
Fringe bnefits cost 23.9% = $5,174
Indirect cost (facilities and administration) on these 53% = $14,216
Tuition 2 semesters = $12,000

Total: $53,039

Median time for M.S. is 2.5 years = $111,490
Median time for Ph.D. is 6 years = $318,234

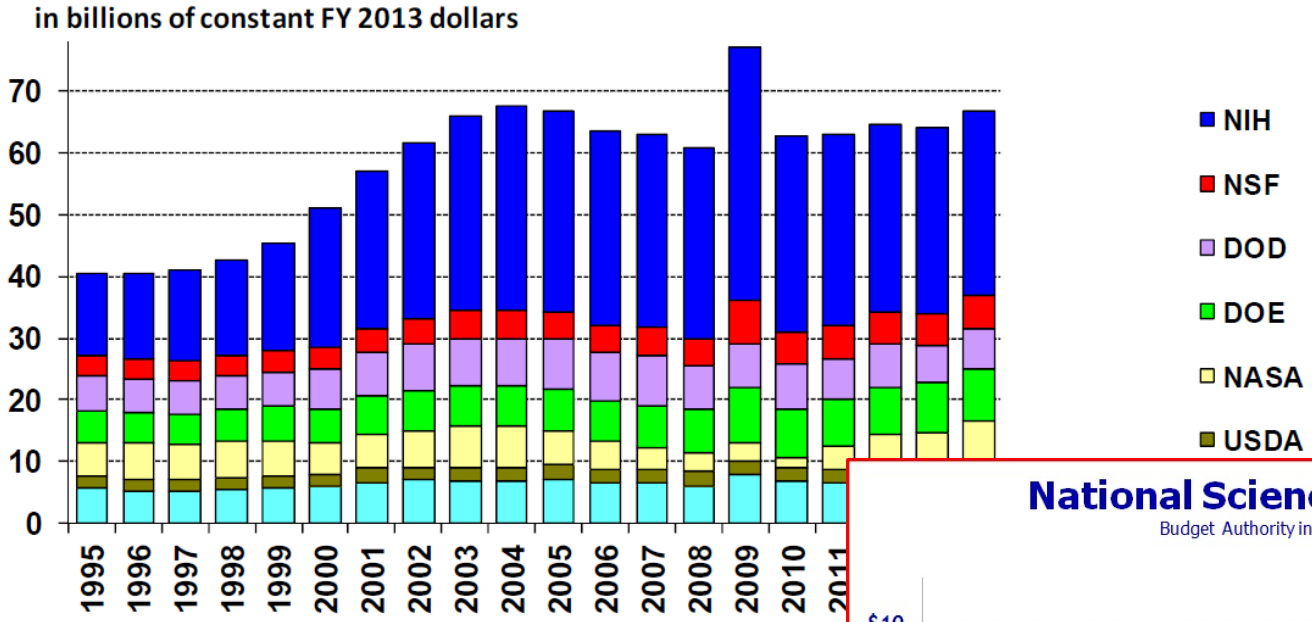
Expenses ~$10,000 for M.S. ~$45,000 for PhD

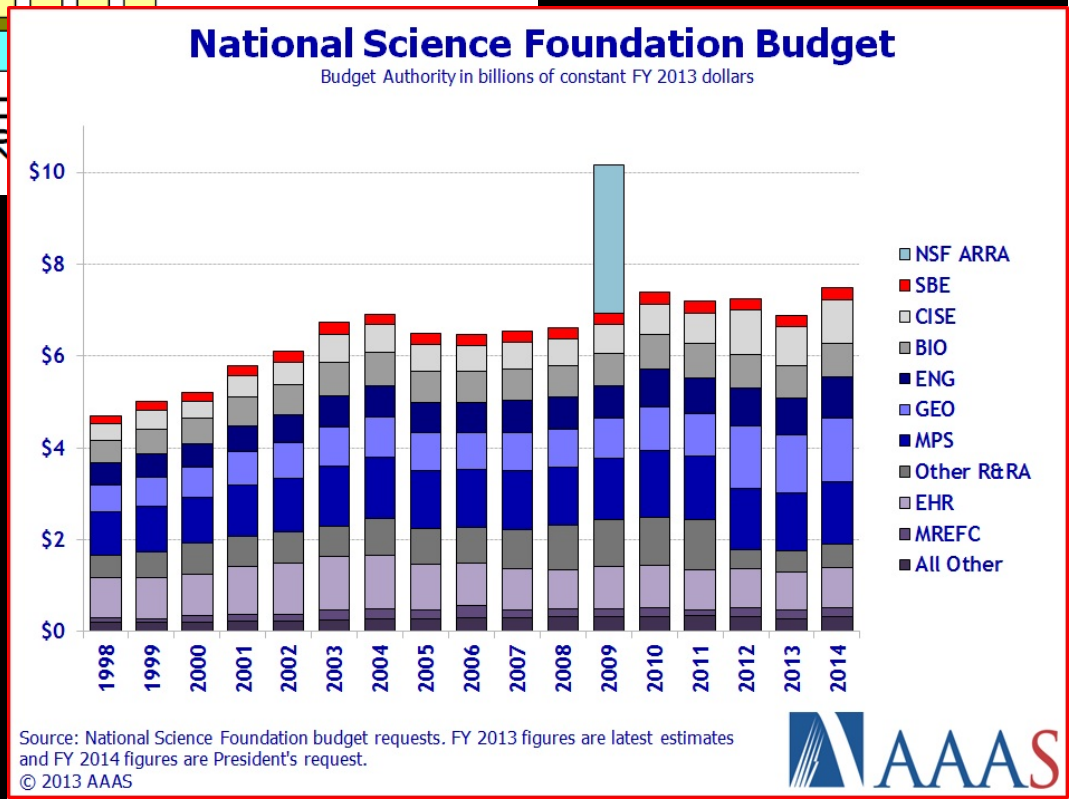
- Conferences - registration, abstract, airfare, lodging, meals $2,000
- Computer + supplies $2,000
- Publication charges $1,250/paper
- Actual lab supplies, fieldwork, supercomputing time, sample analysis $2,500
- Indirect costs on these

Graduate school costs somewhere between $125,000 to $350,000!

2-year Post-doc ($50,000/yr salary) ~$250,000

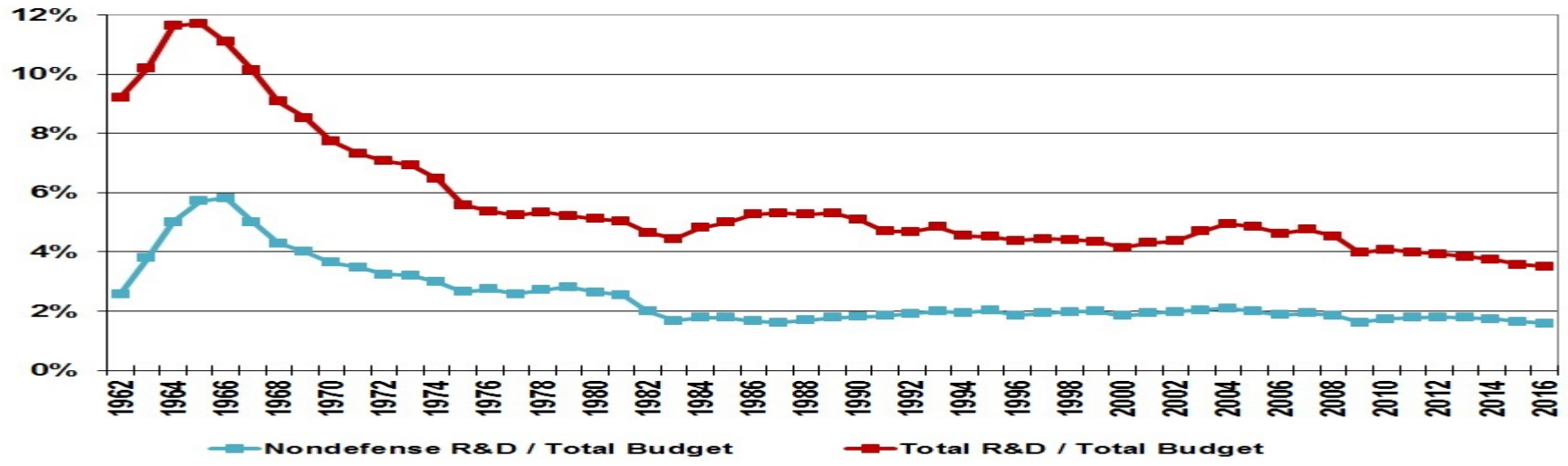
Federal Research by Agency, FY 1995-2014





R&D as Percent of the Federal Budget:

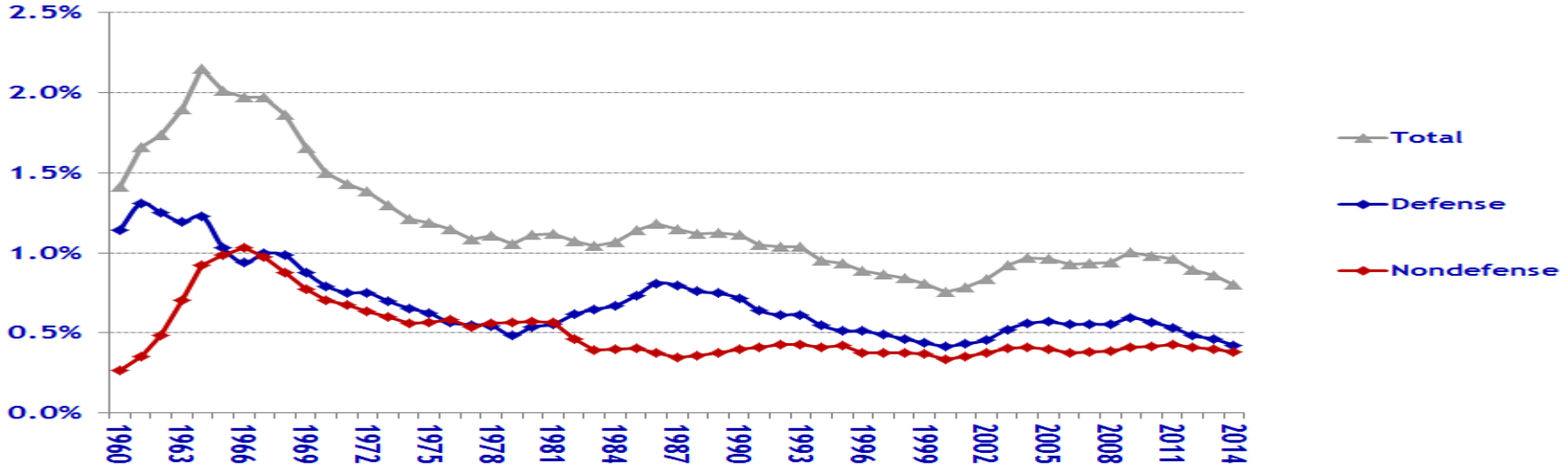
FY 1962-2016, in outlays



Source: *Budget of the U.S. Government FY 2016* Historical Tables. FY 2016 is the request. © 2015 AAAS

Federal Research As a Share of GDP

(percent of GDP - excludes R&D plant)



Source: *Budget of the United States Government, FY 2014.*
FY 2013 data do not yet reflect final appropriations or sequestration.

AAAS

Every $$ helps

- A. Independent funding source
- B. Practice in proposal writing
- C. Prestige

Fellowships and awards that provide stipend, travel, supplies, or other incidentals are worth going after!

A. Independent Funding Sources

- NSF GFRP
- NSF DDIG
- NIH Pre-doctoral training grants
- NOAA
- EPA STAR
- DOE SCGF and SCGSR
- NASA NESSF
- DOD SMART
- AMS
- AAAS
- SCAR (Antarctica), 3rd world travel
- UNESCO
- National Academy of Sciences NRC
- Private foundations: Hetrz, Ford, MacArthur, McNair, HHMI
- Fulbright
- University fellowships: AOF

Post-docs, too

- NSF AGS
- NSF IRFP (International)
- NOAA Climate and Global Change
- NCAR Advanced Study Program
- National Academy post-docs
- DOE ORISE
- Harvard Environmental Fellows Program
- Marie Curie (EU)
- Most national labs, many private universities, and a few foundations

Let's look at several

- https://www.nsfgrfp.org/
- https://www2.ametsoc.org/ams/index.cfm/information-for/students/ams-scholarships-and-fellowships/ams-graduate-fellowships/
- http://nspires.nasaprs.com/external/solicitations/summary.do?method=init&solId=%7B95EC29B1-C074-F67B-F246-79B14642063D%7D&path=open
- http://science.energy.gov/wdts/scgsr/

Campus resources

- https://grad.wisc.edu/studentfunding/currentstudents
- Grad School Professional Development
  - NSF Broader impacts workshop – Oct 2, 2-4 pm, 1520 Microbial Sci, must register
- AOS staff: Sonja Johnson and Debbie Weber
- Graduate chair
- Successful students
  - Brian Zimmerman (NSF GFRP) bgzimmerman@wisc.edu

Things to watch out for

- Strict deadlines and fine print (read the RFP!)
- Page limits, margins, fonts (Guidebook for Proposers)
- Submission method (email, online system, paper)
- Eligibility rules (citizenship status, career stage, minority or gender focus, research topics)
- Specific expectations (summer internships, post-graduation position, annual reports)
- Who gets paid and who pays taxes (direct to you or payroll through University)
- Tuition remission and health insurance details
  - UW allows fellows to count as in-state. Sometimes better to wait for dissertator status
- Funding rates (typically 10-15%, sometimes a lot higher, rarely a lot lower)
- Most fellowships provide less than typical length of degree. Have a plan for how to fund before/during/after. Have a back up plan.

B. Practice in Proposal Writing

- A career that involves scientific research will in some form or another involve forming, writing, managing, and/or reporting on funding

Proposal writing is the single most creative endeavor we do as scientists

Typical elements of a fellowship proposal

- Research plan or statement of work (2-5 pages)
  - Works cited may be incorporated or separate
- Personal/career statement (1-2 pages)
- Letters of recommendation or reference (1-3)
  - Letter from advisor or department chair or host institute. Focus on academics who know you in research capacity
- Transcript (early career ones in particular) or CV (post-doc in particular)
- Budget (rare or pro-forma) and justification
- Forms (always)
- "Broader Impacts" (if agency requires it) (1-2 pages)

Getting started

- Find out what's been funded, ask for copies of successful ones from your program
- Talk to program managers if unsure about fit of an idea
- Competitive proposals are not written overnight
- Think of the reviewer! You might even get to read the reviews

A good research plan

- An early-hook (first paragraph!): Strong motivation
  - Why is this interesting? And what's been tried before? Therefore, what are you going to do?
- A novel idea: Interesting question, hypothesis or objective
  - Connect to specific goals of the RFP, accessible to any scientist
- A doable approach
  - What's your best idea so far? Specific, exciting but not overly ambitious set of tasks, clear connection of each activity to objectives and hypotheses, recognition of what to do if proposed approach fails. Avoid jargon and acronyms.
- Clear deliverables
  - Papers, conferences, websites, data, professional development
- Logical management plan
  - Qualified, expert personnel, well articulated timeline, sustainable data management and safety plans if needed
- Integrated broader impacts
  - How does the proposal help you as a developing scholar, advance the field at large, the agency and its mission, include participation by future students, enhance your community, and the general public/society? Is there a role for mentoring or broadening access of science?

C. Prestige

- All awards and fellowships count as “funding” in your CV
- NSF GFRP fellows in particular are highly sought after by every graduate program in the country
- Independent awards give you more control over direction of your thesis or post-doc research (though potentially with less access to other resources)
- Managing money for research is non-trivial and hard to learn except by doing it
- Learning to talk to program managers is a good skill. Go to town halls at conferences.
- In interviews you will be asked, “How will you fund your research? How will you manage a lab?” Easier to answer if you’ve already done it, or even tried to do it!

Big Points

- Fellowships are competitive, but have a lot to offer. Everything counts. Apply early and often
- Read RFP and pay attention to all rules and deadlines! Start early. Talk to the program. Use campus and AOS resources.
- Just going through the process, even if unsuccessful, is critical to your professional development as a scholar

Thanks!

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