Getting Your D&I Grant Funded

## 2016 Dissemination and Implementation Short Course

October 10-11, 2016
Madison, WI

Ross C. Brownson
Washington University in St. Louis

Objectives

1. Understand some key issues leading to success in grant writing/funding.
2. Provide section-by-section advice on writing a high quality D&I grant application.

What's inside the "Black Box"??

"I THINK YOU SHOULD BE MORE EXPLICIT HERE IN STEP TWO."
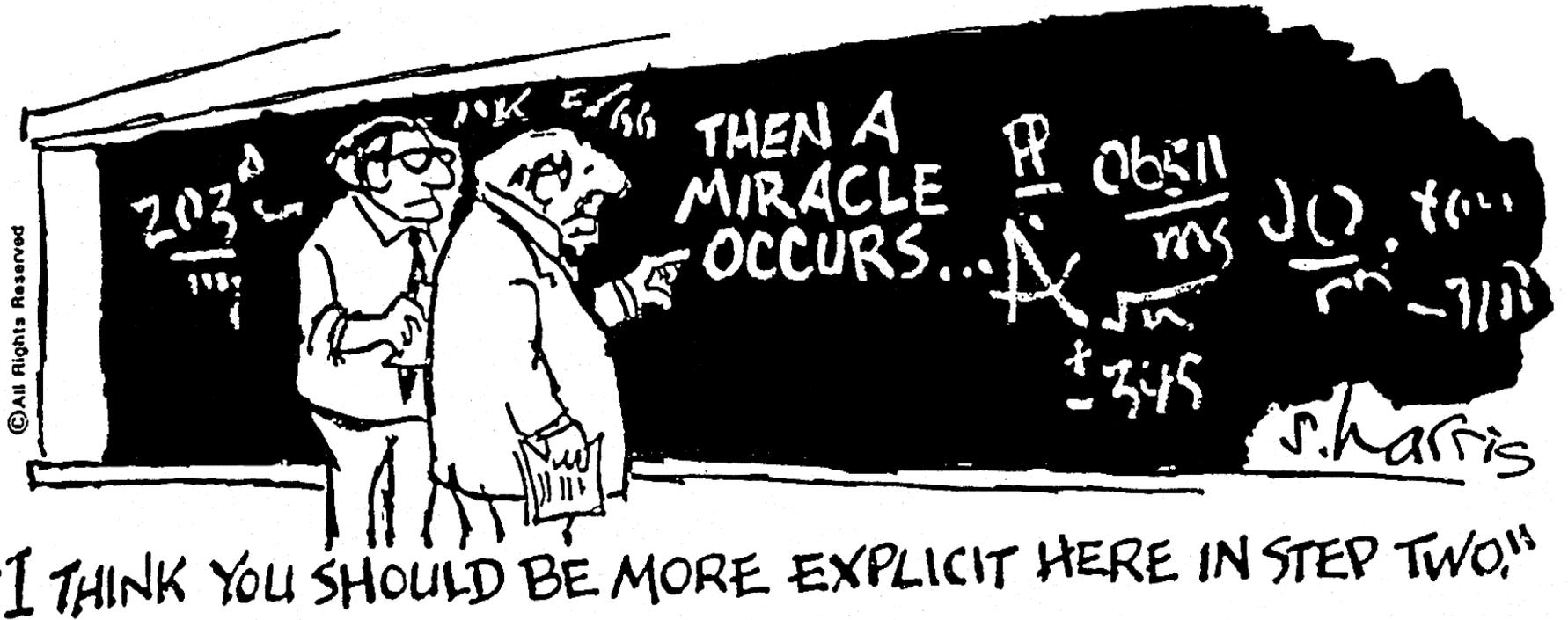
Success in grant writing

*What are two key ingredients for a successful grant application?*

Two sets of information

- 12 competencies from our card sorting exercise

  – classified beginner, intermediate, advanced

- Musings from study section veterans

Also see: Brownson RC, Colditz GA, Dobbins M, Emmons KM, Kerner JF, Padek M, et al. Concocting that Magic Elixir: Successful Grant Application Writing in Dissemination and Implementation Research. Clin Transl Sci 2015;8(6):710-6

Competency examples

Approach

- Utilize an appropriate D&I model or framework to organize a proposal and integrate research questions with clear and measurable study objectives; aims; measures, and analysis strategies.

- Identify measures that clearly assess the constructs of interest in the proposed study and are practical to apply in the proposed settings.

- Create a strategic dissemination plan for various target audiences that goes beyond the traditional publications and presentation at meetings.

What gets you funded?
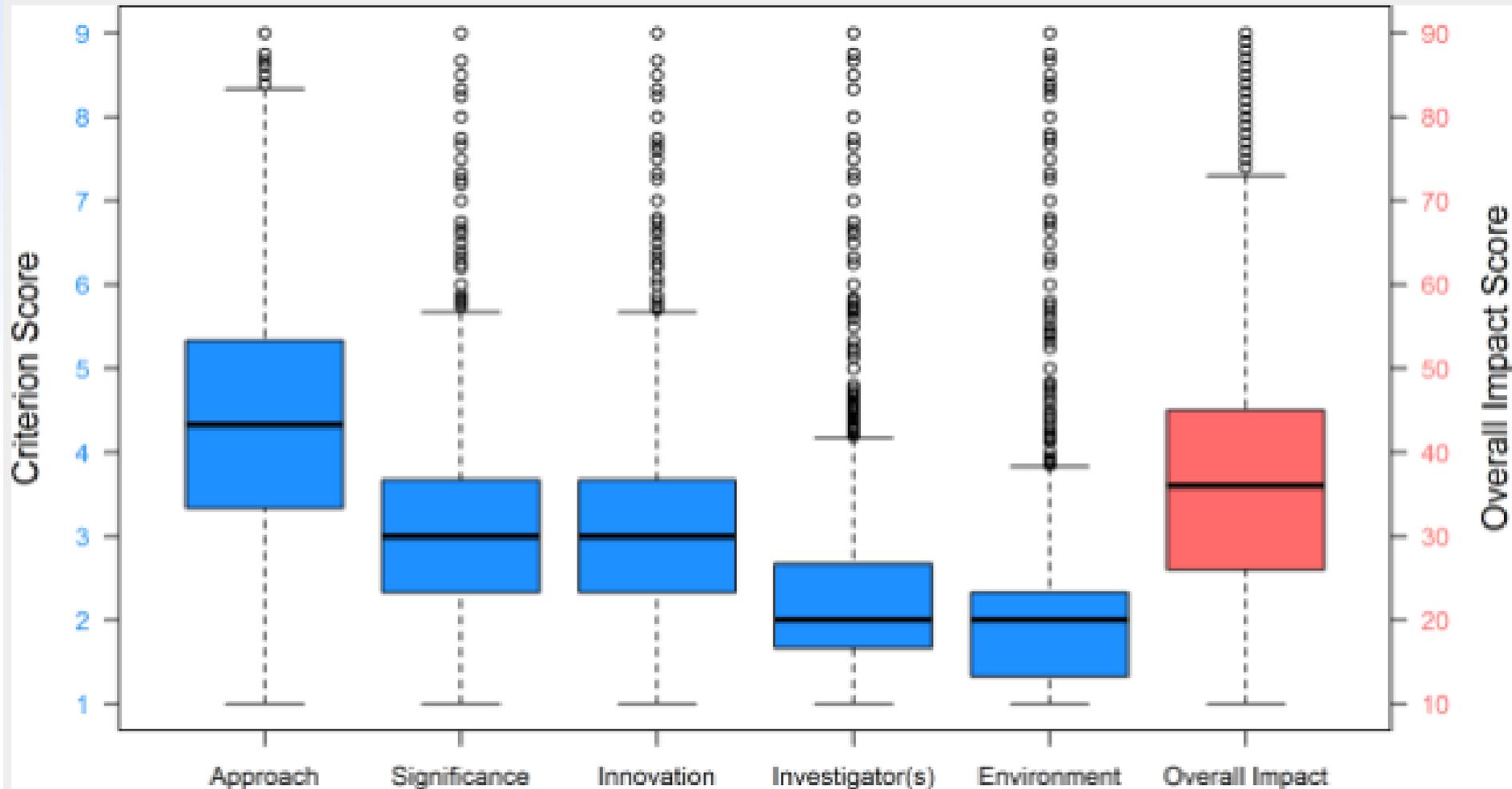
— *Figure 1* from "How Criterion Scores Predict the Overall Impact Score and Funding Outcomes for National Institutes of Health Peer-Reviewed Applications" by Eblen, et al.: Box Plot Distributions of Criterion and Overall Impact Scores for R01 Applications, FY 2010–2013.

Specific aims/hypotheses

- The first part read (you have one chance for a first impression!!)
- Include 2-5 _realistic_ aims
- Address these throughout the proposal (esp. in measures/analyses)

The Essence of Specific Aims

- This is where reviewers decide whether they like your application (or not)

- Set up the general problem and your specific take on it

- Sell the *Sizzle*
  - What is your unique contribution to new knowledge on an important problem?

- 2-4 realistic aims
  - That grandma would understand
  - That lay out what the project is about
  - That relate & follow a logical order but still can be accomplished independently
  - 1-2 lines (Not a paragraph! Not how you will accomplish them, but <u>what</u> you will accomplish)

- Sell the *Steak*
  - How you will accomplish your aims, in broad brush strokes

- Bring it home
  - Implications
  - How the world will be a better place after your project is accomplished

Tips

- **Context:**
  - How will a reviewer encounter this application?
    - Heavy load of applications to review, not enough time, tight timeline, working on weekends/night
    - If your application is difficult to understand, boring, or doesn't seem important, you have no chance. And Aims is the first thing reviewers will read.
    - But, if they pick it up, and after the aims say to themselves "Oh, that's interesting." And if the reading doesn't make them have to re-read any lines, but just draws them into a compelling story, you are halfway there.

- **Audience:**
  - Depending on where you submit, reviewers may know a lot about your topic or relatively little.
  - The way you write in those situations is quite different.
    - To a familiar audience, don't belabor things that will be obvious to them;
    - For reviewers from another discipline, explain your ideas and work in plain language and not in the jargon of your discipline.

Tips

- **<u>Aesthetics:</u>**
  - An Aims page that is dense, wall-to-wall single spaced text looks overwhelming and uninviting.
  - Use a more journalistic style with smaller chunks separated by space.

- **<u>Organization:</u>**
  - Recognize that the structure and order of your Aims dictates how the approach section will be written.
  - Think about what a logical flow and order would be, and make sure that later sections of the application follow what you've established on the Aims page.

Strong focus on the <u>approach</u>

- Make this the core of your application
- Design
  - Design <u>rigor</u> matches the research questions
  - Address key threats to internal validity
  - Address external validity (often ignored)

Approach (continued)

- Conceptual framework/theory
    - Have a framework
    - Be sure it fits your aims
    - Many to choose from (over 60)
        - Avoid inventing a new one unless absolutely necessary (see Tabak RG et al., in *AJPM 2012*)
    - Link with aims, activities, measures, analyses

Approach (continued)

- Settings, recruitment & sampling
  - Why these settings?
  - How to recruit
    - Experience reaching the population
    - Partnership with/ engagement of stakeholders
  - Issues of external validity
  - Pilot data are often important for an R01

Approach (continued)

- Specify a measure or procedure for measuring each variable and document:
  - feasibility, reliability and validity of each measure
  - Suitability for the population(s) studied including respondent burden
  - How new/adapted measures were pretested and whether they are psychometrically sound

Approach (continued)

- Analytic methods
  - Link well with aims
  - Include estimates of power if appropriate
  - For qualitative work, show rationale for sample size and methods for analyzing and interpreting data
  - For mixed methods projects indicate:
    - how the data are to be integrated and by whom the integration will be achieved

Approach (continued)

- External validity
  - Particularly important for D&I grants
  - Often missing in the literature
  - Thoughtful approach for collecting EV data
    - Costs, adaptation, sustainability
    - Who participates or not, at multiple levels

Approach (continued)

- Management & Dissemination plan (D4D)
  - Describe how you will manage the project
  - Include a time line
  - Describe the uses of your findings
  - Can you design for dissemination? (later)
  - Sustainability

Significance

- Scope of the problem (keep it brief)
- Attributable risk (better yet, prevented fraction)
  - The meaning of "scale up"
- Careful (not exhaustive) review of key literature to set up your study
- Needs in D&I research
- Gaps in literature (the scientific premise)

Defining what "evidence-based" means…

"Then we've agreed that all the evidence isn't in, and that even if all the evidence were in, it _still_ wouldn't be definitive."

Innovation

- In the eye of the beholder?

- What makes your study innovative?

  – Study population (esp. disparities)

  – New method of adaptation

  – Applying a new method (systems, CBPR, network analysis)

  – Using a non-health theory

For CBPR/PCORI approaches…

- Think about framing as stakeholder engagement
- A nice theme for framing D4D
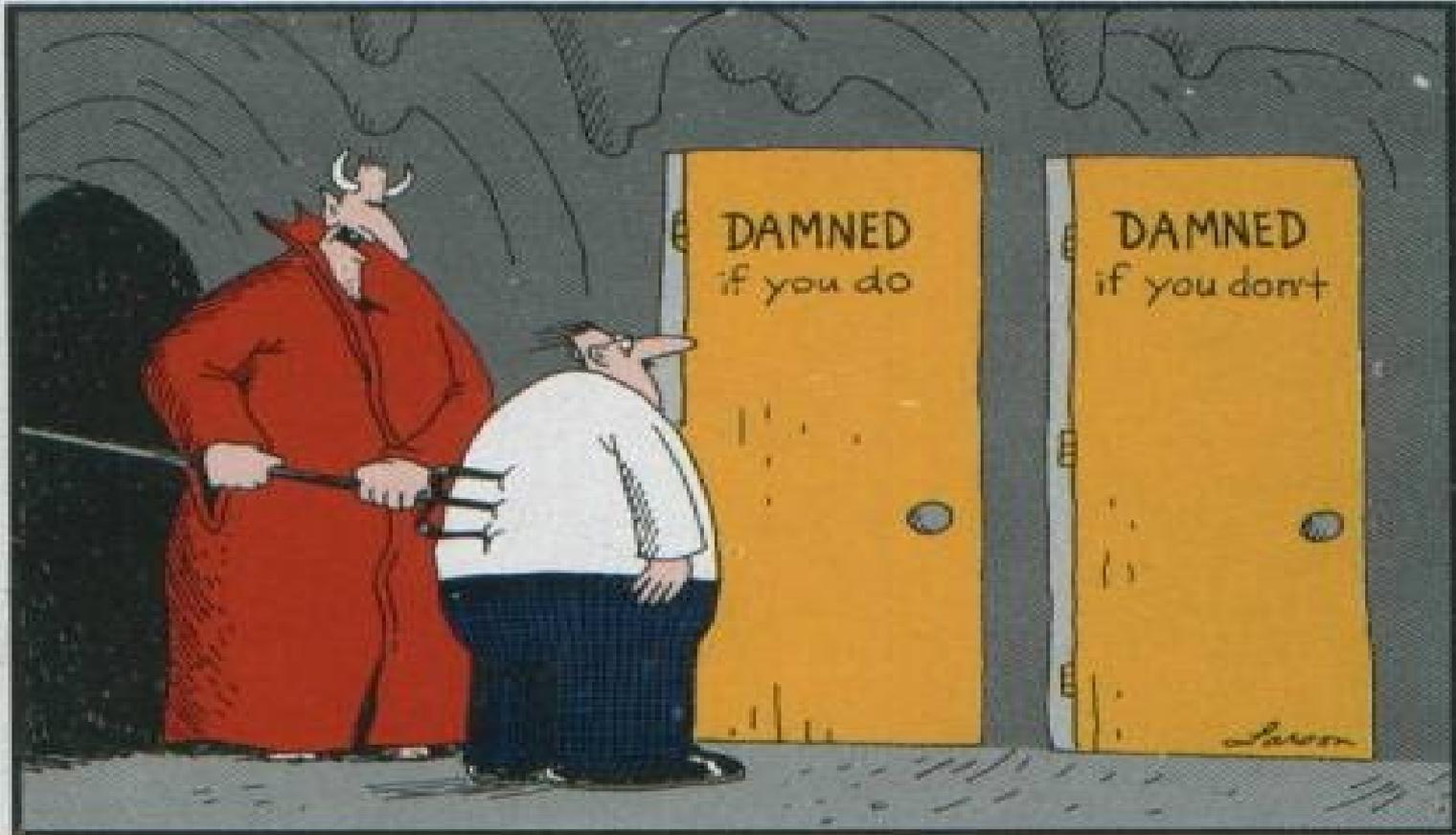- Useful in adaptation of evidence-based approaches

Overarching issues & tips…

- Read the funding announcement carefully

- Smaller grants = easier to get funded

- Think like a reviewer (busy, quick reaction, easily irritated, may be novices to D&I research or your content area)

- Match the grant type to your project/aims

- Discuss your idea with the program officer

- Turn to your institution for pilot funding to build the foundation for a larger grant

Overarching issues & tips…

- Use tables/figures effectively
- Write, re-write, budget plenty of time to present your best work
  - Unlike a journal article, a grant application should be as close to perfect as possible
- Hold a pre (mock) study section (seek out brutal reviewers)
- Participate in a review (may be ECR)
- Just like the best baseball players have a short memory at the plate; top scientists need to learn from rejection, build on it and move on.
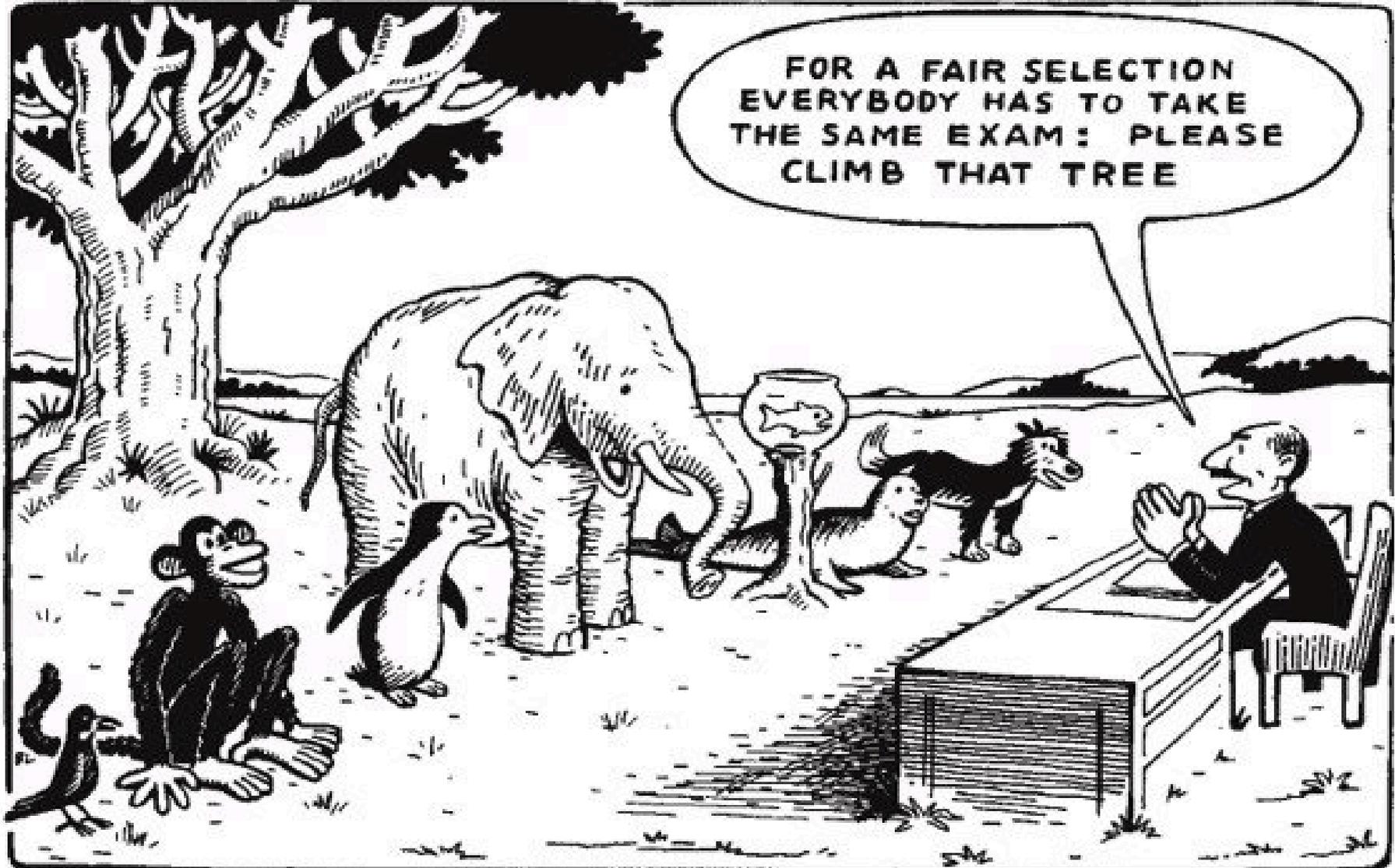
And decision points are not always clear…

Resources

- Proctor et al- Ten Tips on getting your IS grant funded <u>Impl. Science, 2012, 7:96</u>

- Brownson et al—successful D&I grant writing

  http://onlinelibrary.wiley.com/doi/10.1111/cts.12356/abstract;jsessionid=FA1D95861E426B4BF527EFA722EFFA2B.f03t04

- NCI website- Content analysis of funded grants: <u>http://cancercontrol.cancer.gov/IS/pdfs/DandI-PAR-Grant-FundedContentAnalysis.pdf</u>

- UNC D&I website containing successful grant applications

  <u>http://impsci.tracs.unc.edu/</u>

It won't always seem fair....

With the right preparation, opportunity, and hard work…

THANKS to Russ Glasgow, Matt Kreuter, Kurt Stange!!

Questions