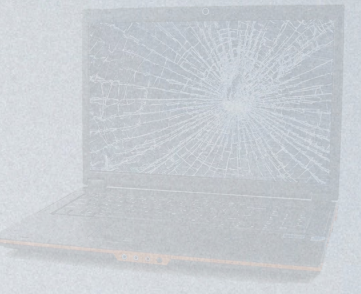
A laptop computer is shown from a slightly elevated angle, open. The screen is heavily cracked and shattered, with a dense network of white lines radiating from a central point. The laptop is dark-colored with a thin orange or gold trim along the bottom edge. The background is a plain, light gray.

WHY COMPUTER SCIENCE RESEARCH IS BROKEN

Chad Spensky

WHY DO WE DO SCIENCE?



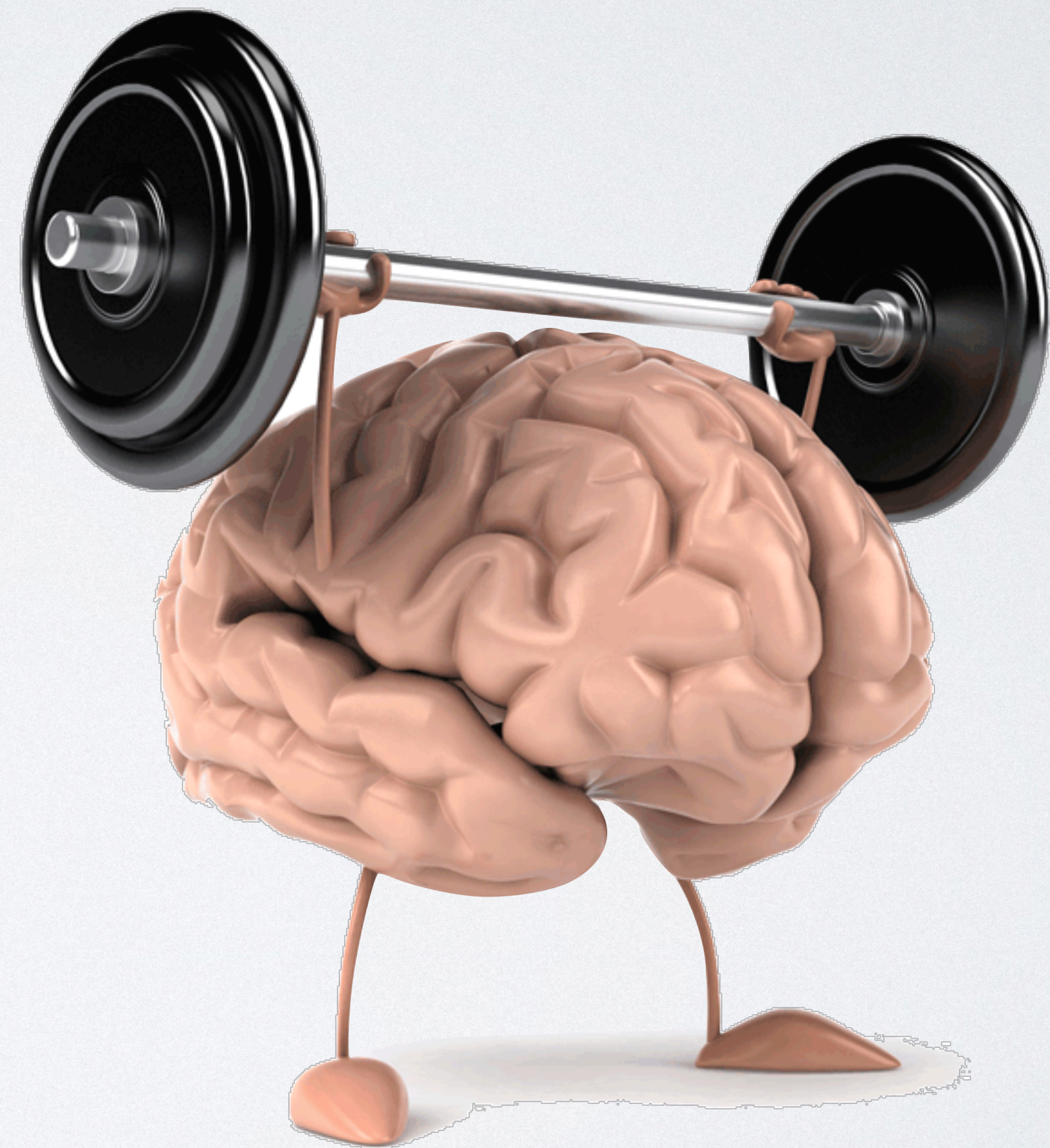
- For the money?



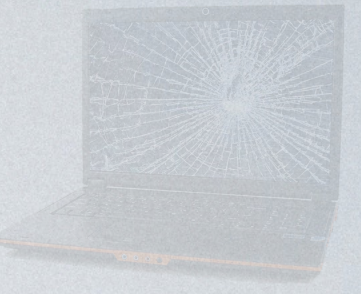
WHY DO WE DO SCIENCE?



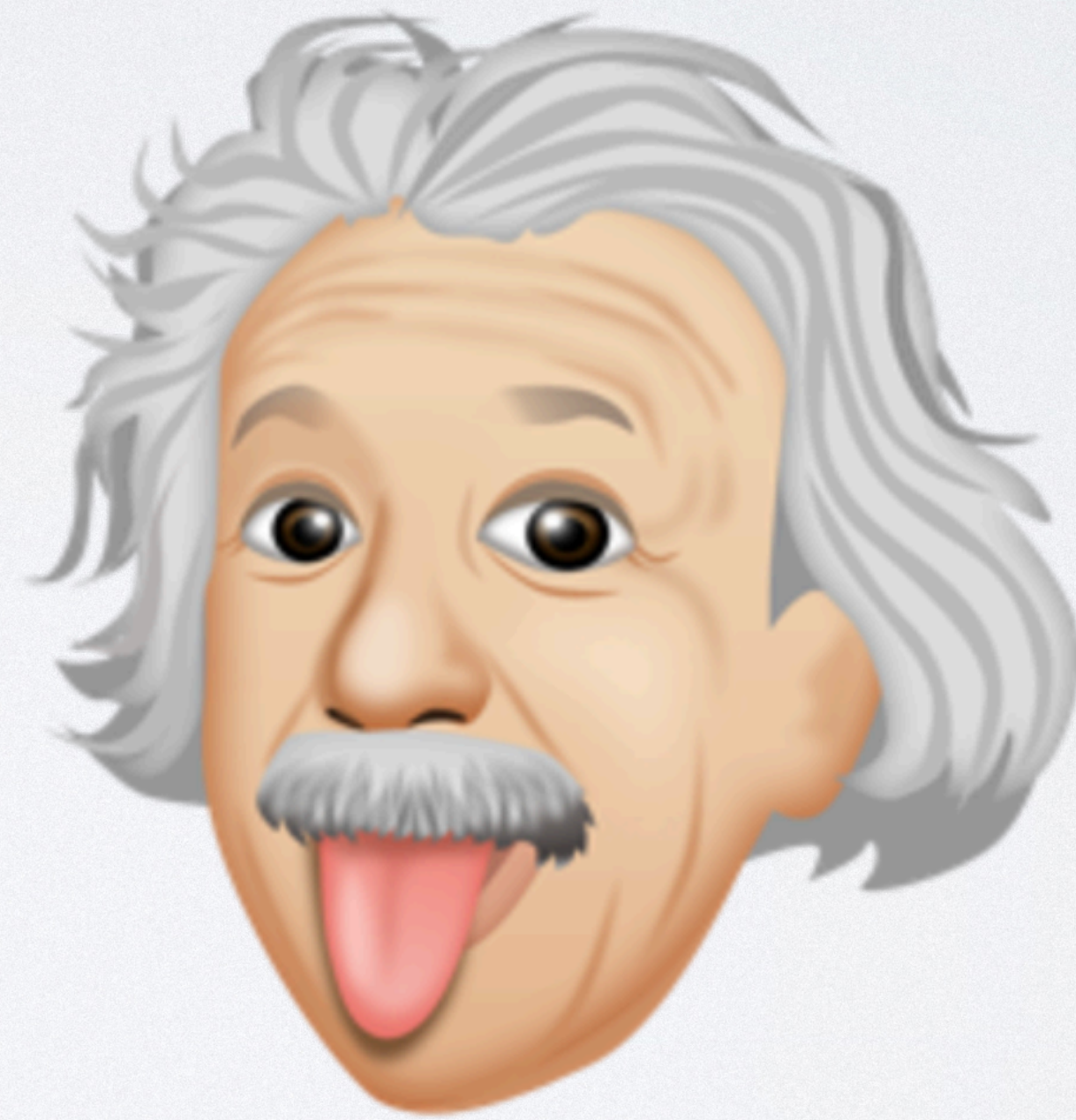
- To advance world knowledge?



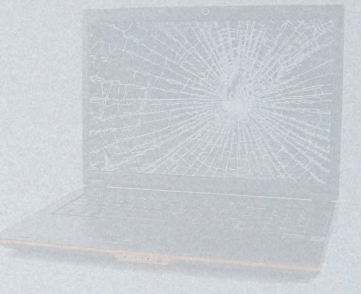
WHY DO WE DO SCIENCE?



- For the fame?



WHY DO WE DO SCIENCE?

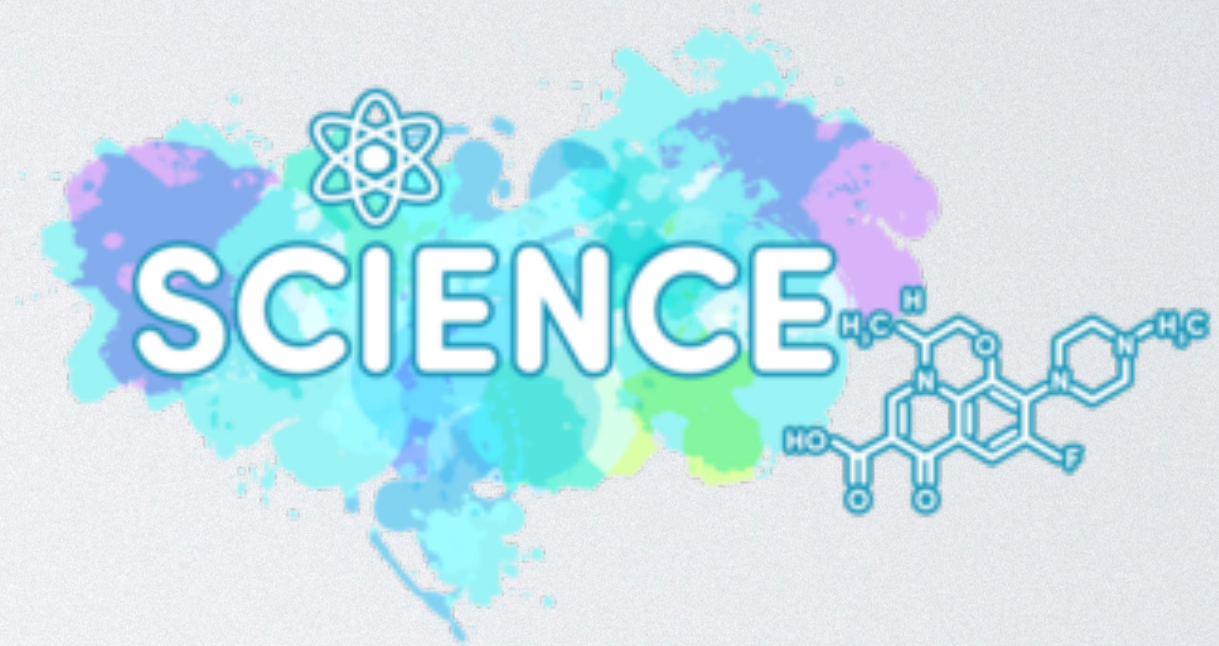
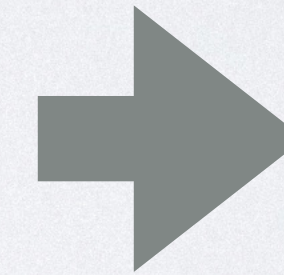
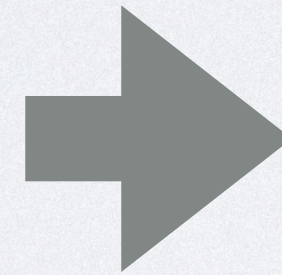


- To make the world a better place?



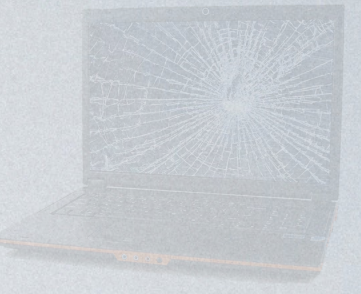


RESEARCH AS A GAME



RESEARCH AS A GAME

- Goals
 - Publish a lot of papers
 - Publish first author papers
 - Publish in top conferences
 - Get cited
 - Do not fail

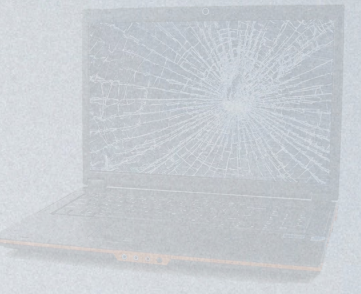




RESEARCH AS A GAME

- Winning Criteria
 - Publish $>$ 3 papers
 - \sim 3 first authors in top tier
 - Good h-index on Google Scholar
 - Great job talk

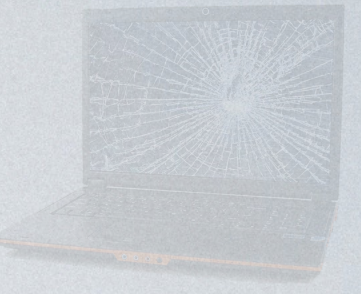
winning
is everything



MISALIGNED INCENTIVES

- If everyone acts in what they believe to be their own best interests, as opposed to the group's best interests, the overall result for the group may be suboptimal--and in some cases, catastrophic.

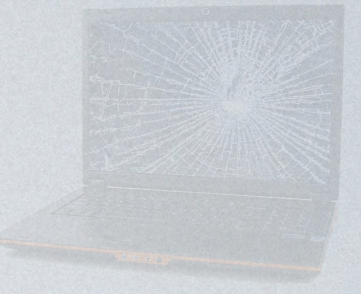




LET'S PLAY!

- We are all incentivized to maximize our individual well being
 - i.e., Get that professorship

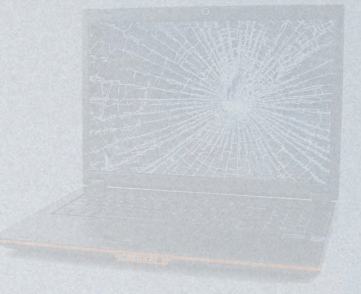




QUANTITY VS. QUALITY

- Disincentivizes is “large” multi-year high-risk projects
- Result: More lower quality papers

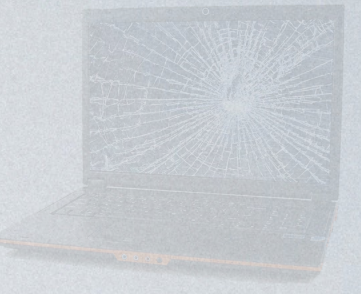




AUTHOR ORDER

- Disincentivizes working hard on non-first-author papers
- Result: most projects are a one-man show





TOP TIER CONFERENCES

- Incentivizes high-quality, valued research

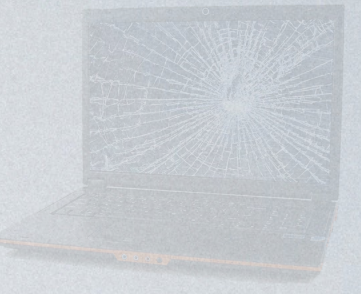




CITATION COUNT

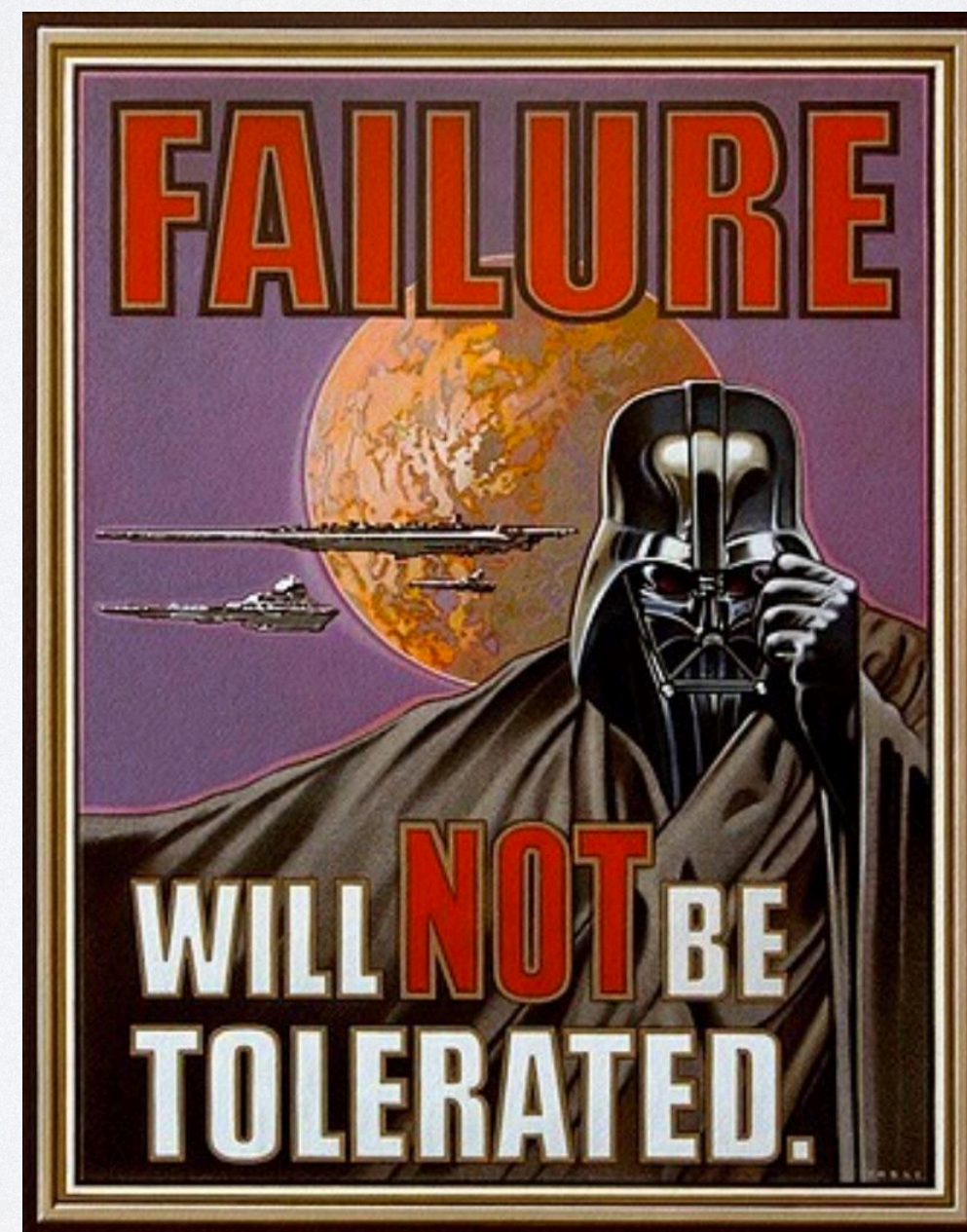
- Rewards high-value work





INABILITY TO FAIL

- Disincentivizes high-risk, potentially high-impact work
- Result: safe, marginal improvements



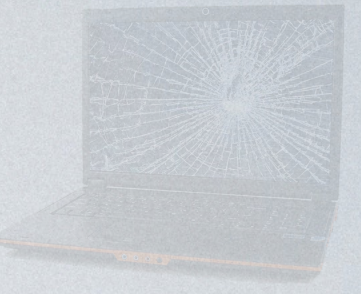




CONFERENCES: DOUBLE BLIND REVIEW

- No incentive to give a great review
- No accountability for a terrible review (e.g., “Not novel.”)
- Result: Low quality, mostly negative reviews





LACK OF REPRODUCIBILITY

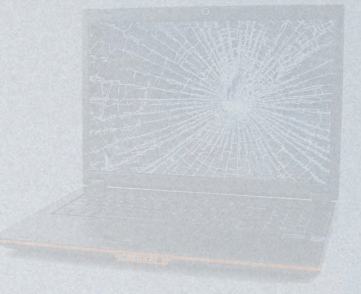
- Incentivizes embellishing or overselling results
- Disincentivizes rigorous analysis of results (who's going check?)
- Result: potentially invalid findings and wasted time reproducing experiments



CAN WE DO BETTER?



**DONT
HATE THE
PLAYER
HATE THE
GAME**



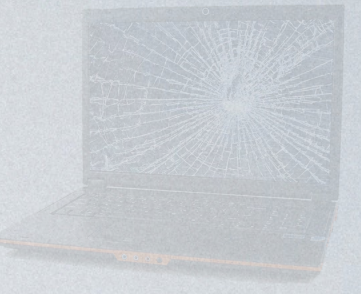
QUALITY OVER QUANTITY

- Why is 1 really good piece of research not enough in our field?



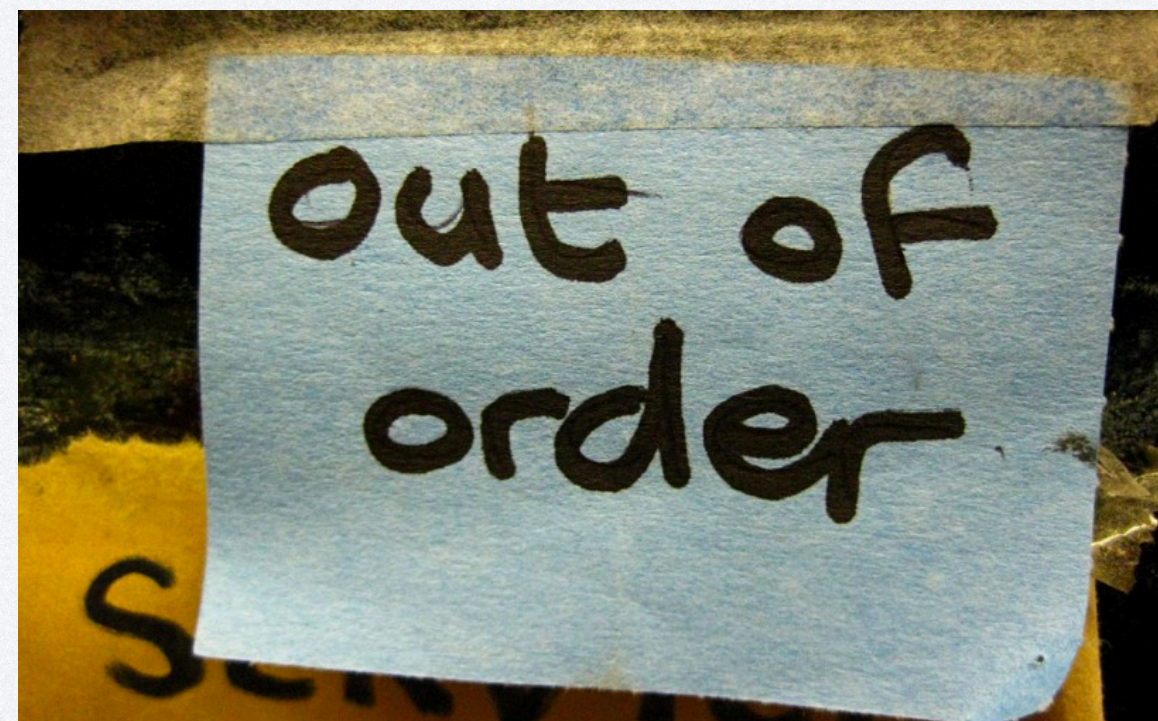
vs.





ALPHABETICAL ORDER!

- Incentivizes all authors to put in equal work
- Incentivizes collaborations (more papers)
- Ideal Result: More collaboration and larger projects

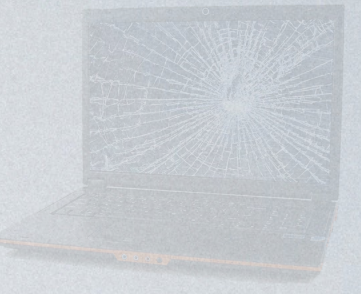




ONLY BLIND THE AUTHORS!

- Incentives good reviews
 - Papers can cite reviewers by name
- Disincentivizes un-helpful reviews
 - The authors will know who you are.

*I can't wait,
to see you
again!*



INABILITY TO FAIL

- We need to be more accepting of failures as a field...
- Honestly, I have no clue how to fix this...

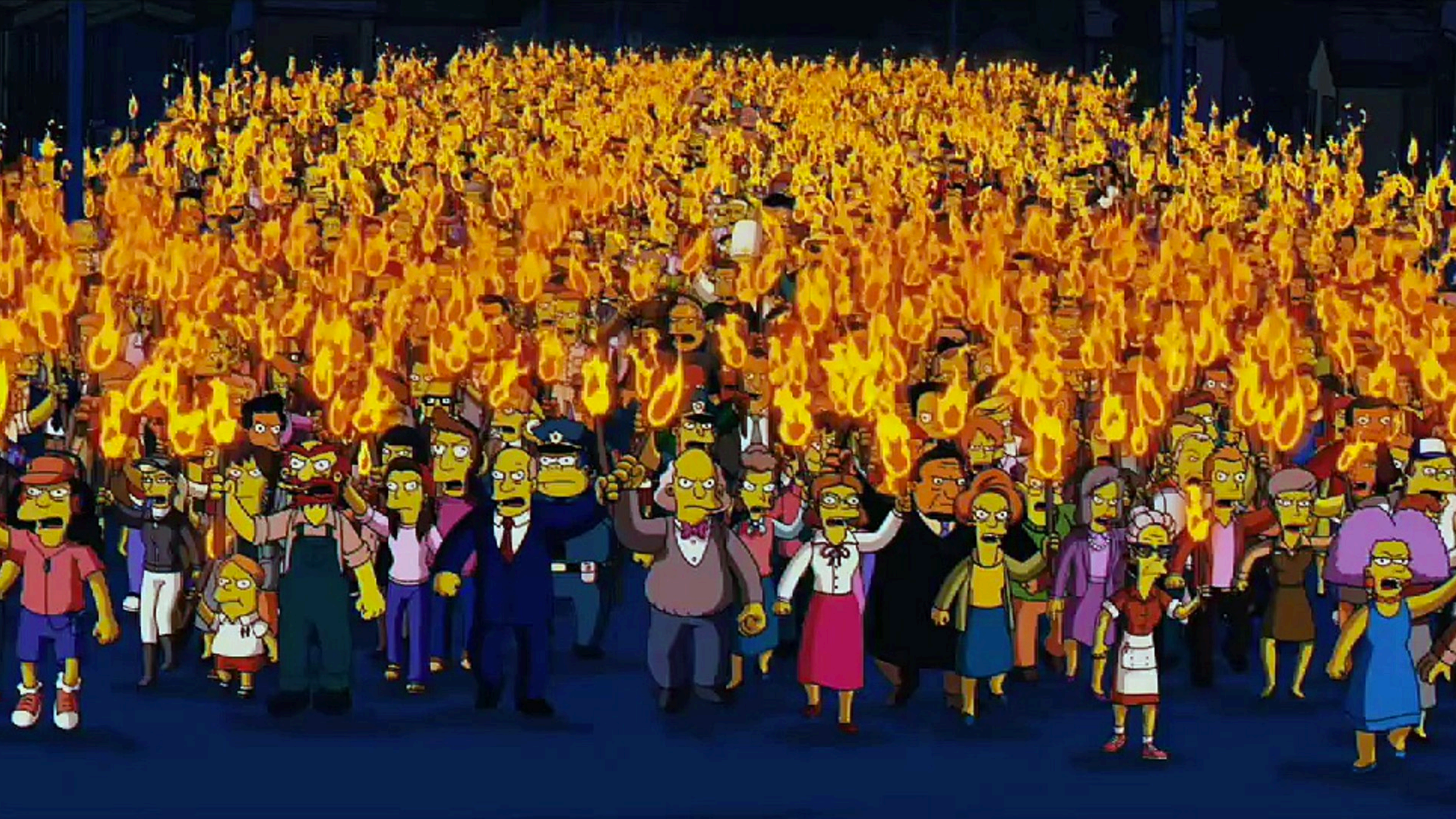


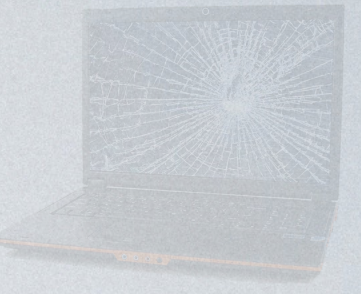


FINAL THOUGHTS

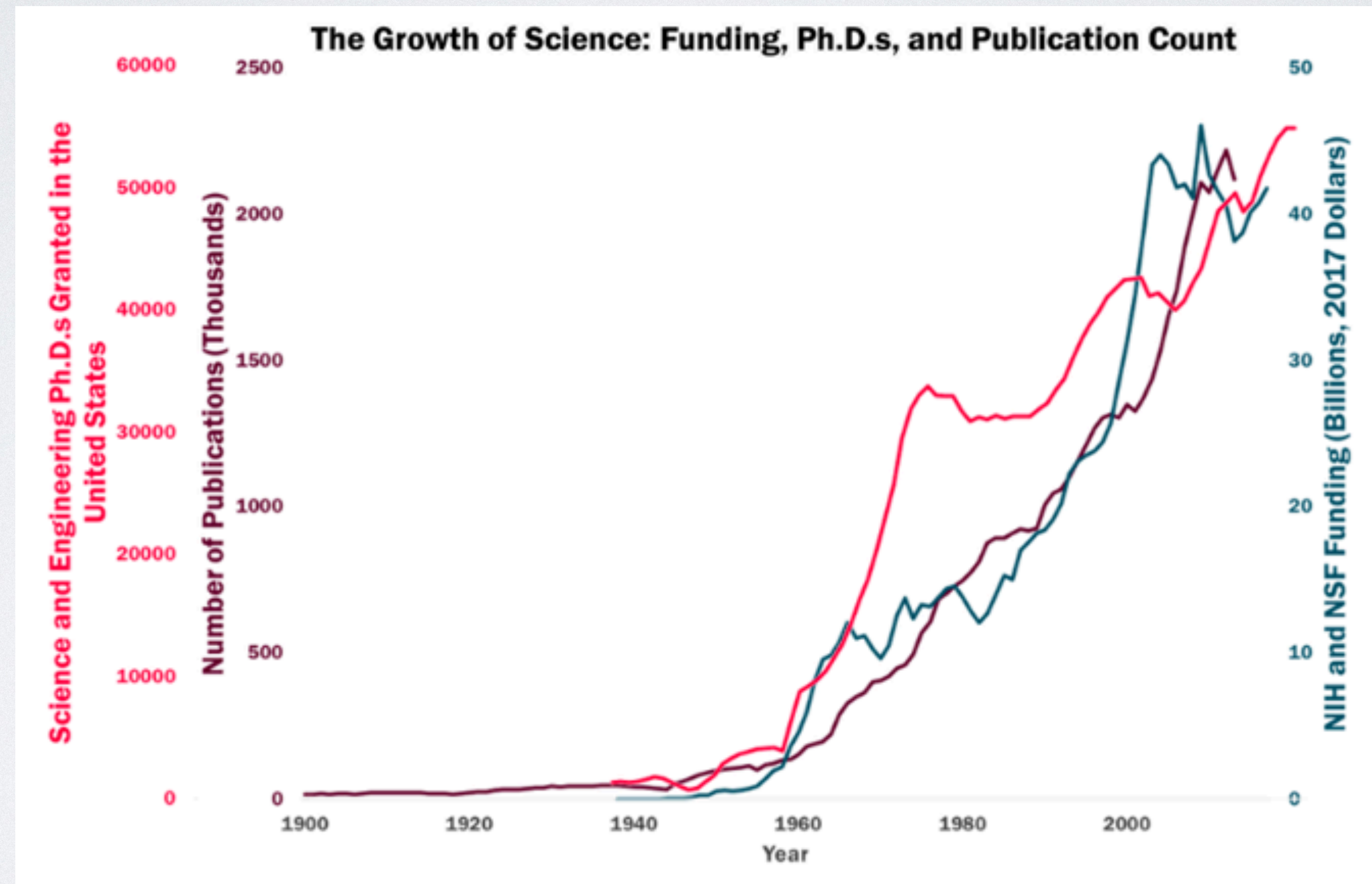
- Option 1: Dedicate our lives to a broken system
- Option 2: Fix the system, and do science right







FOOD FOR THOUGHT



<https://www.theatlantic.com/science/archive/2018/11/diminishing-returns-science/575665/>