Navigating a Soft Money Environment

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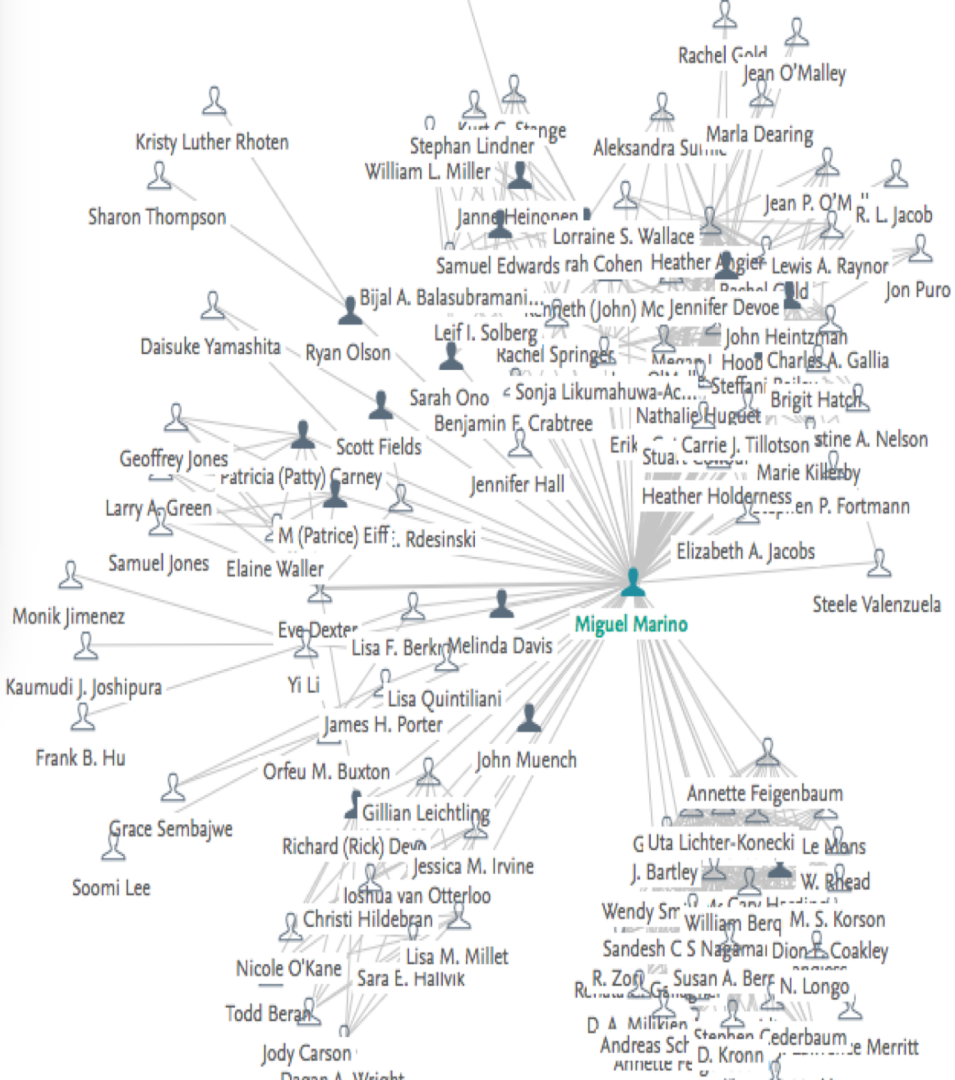
Roundtable General Expectations

1. **Not all soft money environments are the same:** we are here to share and learn from one another.
2. **Understanding history is important: how did we get here**?
3. **Collaboration** is the most important key.
4. How do we navigate a soft money environment in a post COVID-19 world?

A bit about me

1. OHSU ~7.5 years
2. Site-PI or Co-I in 30 federally-funded NIH/AHRQ/CDC grants
3. Co-authored 131 peer-reviewed scientific publications with authors from >20 institutions



Development of a Biostats Core

Definitions: Hard vs. Soft

Hard Money

- Positions that are not directly project-dependent, but instead are positions for a purpose by an organization
- "Hard" because they are often thought of more secure
  - Eg. Tuition supports funding. Students enrollment is typically stable

Soft Money

- Positions where the funding source is based on external grants/contracts
- "Soft" because they are dependent on a sufficient supply of external funds and as such, thought of as less secure

Definitions: Hard vs. Soft

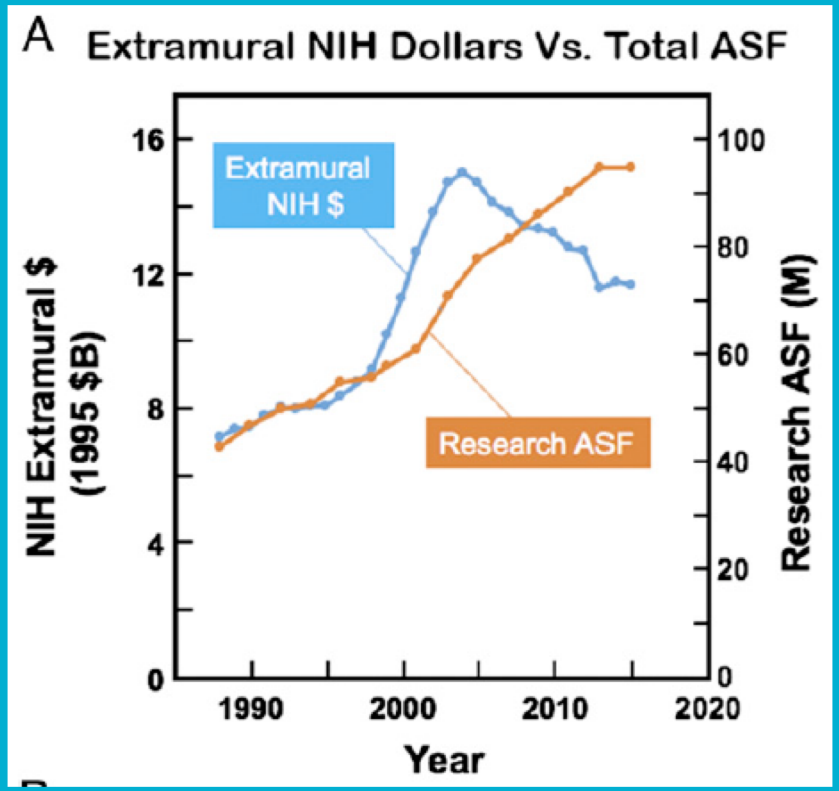
Hard Money

- Source: Endowments, tuition, etc.
- Location: State Universities, industry, etc.
- Majority of salary covered by employer in exchange for teaching, research, administrative activities, etc.
- Depending on setting, you may need to bring in some external funding to cover research costs (e.g. purchasing data, computers, etc.) or summer salary.

Soft Money

- Source: Grant funding (NIH, CDC, NSF, etc.)
- Location: Research universities, research institutes, medical schools
- Majority of salary covered by grants. Expect 80-100% to be grant covered.
- Whatever is not covered by grants, will have to be made up with teaching, service or other activities.

Expansion fever and soft money plague



- Follow the NIH budget trend
- "Universities recklessly overbuilt laboratories to fill with more scientists, just when the bust removed funding increases they needed to do science"
- "As diminished NIH dollars made research riskier, universities required principal investigators (PIs) to earn high proportions of salary from grants, transferring much of the risk to PIs"

Bourne HR. Opinion: Expansion fever and soft money plague the biomedical research enterprise. Proceedings of the National Academy of Sciences. 2018 Aug 28;115(35):8647-51.

Is a soft money environment right for me?

PROS

- For the most part, majority of time is spent doing research.
- Teaching load is lighter
- More likely to be 12-month appointment vs. 9-month
  - i.e. higher salary
- Choose your own adventure:
  - Some flexibility in who you work with
  - Can select the topics you are most passionate about
  - Grant funded work already deemed important so you have a leg up

CONS

- Writing grants is a meat grinder
  - You are constantly writing grants. Your funded work doesn't stop
  - If you try to write your own grants, you need institutional support. That is not guaranteed. Ask!
- There are limits to how much your salary can be covered on an NIH grant so you will likely need to secure multiple funded grants
- May or may not have opportunities to cover salary with teaching/service

Personal Reflections on Navigating a Soft Money Institution

REPORT

Multi-University Research Teams: Shifting Impact, Geography, and Stratification in Science

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+ See all authors and affiliations

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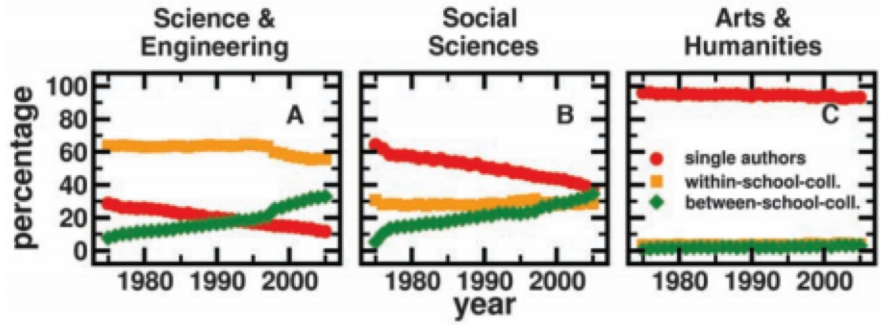


Fig. 1. The rise in multi-university collaboration. By comparing the incidence of papers produced by different authorship structures, we see that the share of multi-university collaborations strongly increases from 1975 to 2005. This rise is especially strong in SE (**A**) and SS (**B**), whereas it appears weakly in AH (**C**), in which collaboration of any kind is rare. The share of single-university collaborations remains roughly constant with time, whereas the share of solo-authored papers strongly declines in SE and SS.

Science is collaborative

"By examining 4.2 million papers published over three decades, we found that multi-university collaborations

(i) are the fastest growing type of authorship structure,

(ii) produce the highest-impact papers when they include a top-tier university"

Why Collaborate?

1. Our knowledge base is becoming more and more specialized
2. Access scientific expertise & equipment; write stronger grants and papers; pursue new interests; develop friendships.
3. Though important, it just doesn't happen naturally.

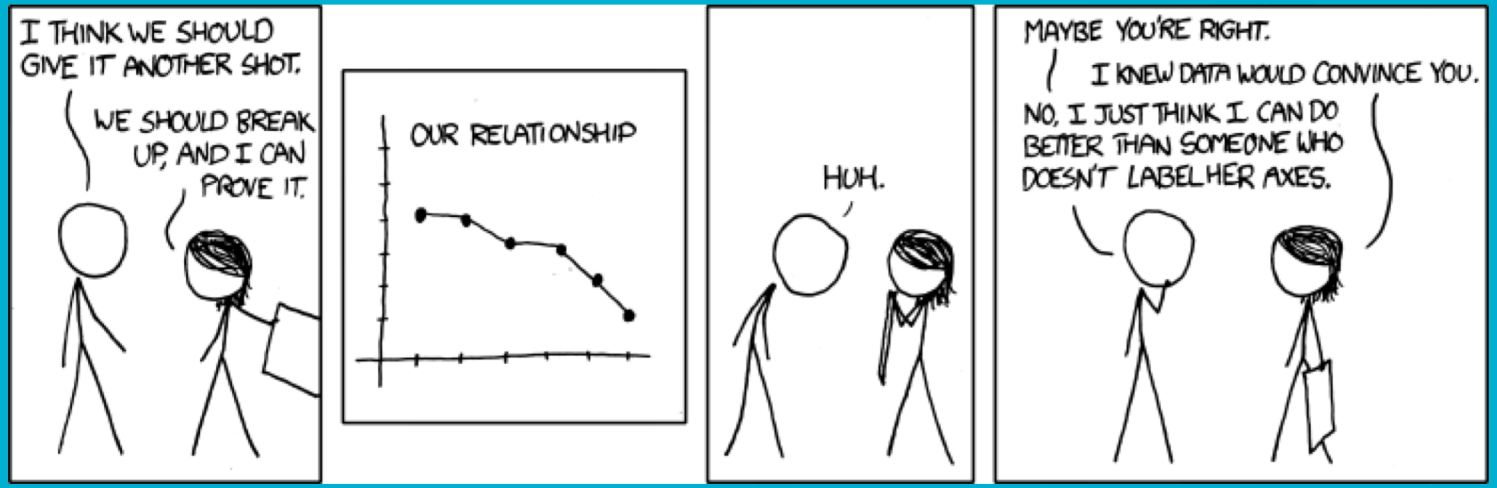
3 things I learned about Collaboration

1 | Variability

As statisticians, we know that there is variability in everything. Same goes for collaboration.

Find the collaborators that suit your style.

Take Time to Understand Your Collaboration style — Likes/Dislikes



Ask Around about Collaboration Potential

3 things I learned about Collaboration

1 Variability

As statisticians, we know that there is variability in everything. Same goes for collaboration. Find the collaborators that suit your style. If you can't choose, try to set expectations. If that doesn't work, leave the collaboration.

2 You can build it!

You have the power to build and develop good collaborations. There are practical things you can do to start off on the right track or improve collaborations.

Avoid Adding Collaborators Last Minute

1. **Plan Ahead:** Ask around and identify a collaborator early on.
2. **<u>If last minute</u>,** you may get someone who says yes (because it might be a good fit) but may not provide significant input given the time constraint.
3. **<u>If last minute</u>**, won't have time to invest in the relationship or test run the collaboration.

Collaboration During Grant Writing

1. Expect workload commensurate with role
2. Co-PI (person sharing idea conception and has expertise to carry out a part of the project): Substantial workload
3. Co-I (significant contributor, joining all/most meetings): Some sections of grant, so expect moderate to mild contributions
4. Consultant (occasionally joins meetings, reviews documents, limited tasks, external expert): Little to none.
5. Give them all an opportunity to review/contribute, but don't overburden co-I's and don't expect much from consultants.

Set Scope of Work ASAP as best you can

1. Clearly lay out who is doing what and what the budget will be (before you do any work!)
2. Ask what kind of resources/personnel that collaborator brings.
   a. If they have a team to do some work, don't ask them to train your unskilled staff and ignore their team. If you do want to train your staff, figure out how to engage whole team and how to cross train and budget appropriately.
3. Budgets/Resources can be hard to negotiate through… be honest when there isn't enough to do the job appropriately. You may have to walk away.

Budget Tips

Source: UCDavis Health
https://health.ucdavis.edu/ctsc/area/biostatistics/financialConsiderations.html

Another useful website from Vanderbilt:
http://biostat.mc.vanderbilt.edu/wiki/Main/GrantPolicies

1. Large or complex projects: Total biostatistics FTE 50–100+%, such as 20% or more of Ph.D. biostatistician plus 30–100% of an MS biostatistician

   High level of involvement in the development and implementation of the research project and communication of study results, which may take many forms, including:
   1. Development and/or implementation of complex study designs
   2. Assembly of datasets from large, complex or poorly documented administrative or survey databases
   3. Development and/or implementation of interim data analyses during data collection phase of prospective studies
   4. Coordination of analyses for multi-site projects.
   5. Development of and/or use and interpretation of novel or complex statistical methods
   6. Active participation in publications, with opportunity for first authored papers
2. Regular Projects: Total biostatistics FTE 30–65%, such as 10–15% Ph.D. biostatistician plus 20–50% of an MS biostatistician.

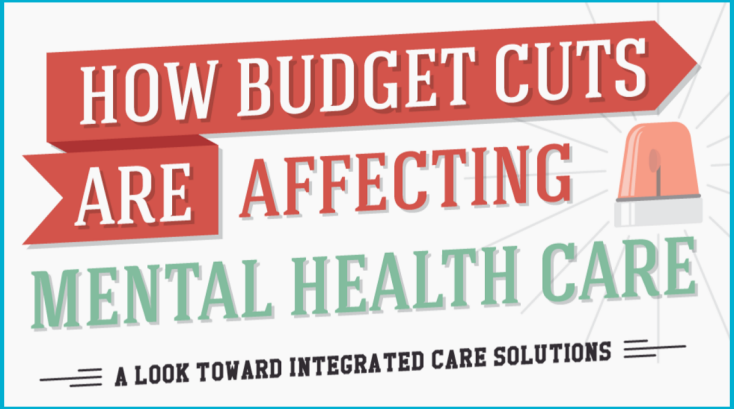
   This effort profile is suitable for straightforward projects with uncomplicated analyses.
   1. Active participation in publications, with opportunity for first authored papers
   2. Routine study design and analysis, e.g., analyses carried out using off-the-shelf procedures available in statistical software packages
   3. Involvement in study design, implementation and data collection
3. Limited Scope Projects: Total biostatistics FTE 20–35%, such as 10–15% of PhD Biostatistician plus 10-20% of an MS biostatistician.
   1. Ongoing occasional consultations with PI about choice of statistical methods to use. This FTE level is typically too low for a Ph.D.-level biostatistician to carry out analyses
   2. This FTE level may be too low to support attendance at weekly or biweekly project meetings by the Ph.D. biostatistician.
   3. This level of effort commitment and support for the Ph.D. biostatistician is generally not compatible with smooth workflows and readily available consultation support, unless an *experienced and capable* M.S. biostatistician is supported on the project as well.

Receiving Collaborator Feedback

1. You may get feedback from collaborators you do not agree with.
2. It's ok to not incorporate feedback but don't ignore.
3. If you don't incorporate, explain why to collaborators. There may be opportunities from both ends to understand more clearly.
4. As a collaborator, if I see you didn't incorporate feedback and I don't hear back why, I feel like a waste of time and I may not engage in the future.

Budget Cuts

1. With federal scientific grants, funding can get cut.
2. Engage the entire team (or at least leadership) in cutting decisions.
3. If you make budget decisions alone, it may disproportionately affect some team members and collaborators… it may hurt the science!!!



Communication is key

1. Often, collaborations break down when there isn't enough communication
2. Chunk out big projects into small activities and set timelines for each activity
3. Even if you don't finish something, email and communicate.
4. Or often, email collaborators questions to keep them engaged and let then know that you are working/thinking about the collaborative work.

Addressing Bad Collaborations

1. If collaboration isn't working, be direct and honest. Identify places where it isn't working and work through some potential solutions.
2. If leaving collaboration is the only avenue, consider a warm handoff (if possible)
    a. Identify a replacement who may be better suited and make the connection between them.
3. If warm handoff is not possible, its ok to leave.

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Find the collaborators that suit your style.

2 You can build it!

You have the power to build and develop good collaborations. There are practical things you can do to start off on the right track or improve collaborations.

3 You are also a scientist

Find collaborators who see you more than just a statistician or programmer.

Move from Statistician to Scientist

Researcher: Can you just write analysis plan and power calculations?

Me: Sure, send me the paper/grant.

Me: Here are my edits. BTW, I also reviewed the entire document and I have some suggestions on how to improve the aims or places where the discussion is lacking.

1. Provide feedback on everything. It takes time but when they see me more than just a power generator, they want to collaborate and they respect you more.
2. This may mean doing subject content reading.

Learn Their Language

The NEW ENGLAND JOURNAL of MEDICINE

SPECIALTIES TOPICS MULTIMEDIA CURRENT ISSUE LEARI

Seven-Level Ordinal Scale: Missing 1 and 2 3 4 5 6 7

Hydroxychloroquine plus Azithromycin

ANNALS OF FAMILY MEDICINE

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Home Content Info for About Engage Contact Careers COVID-19

Ranked 1

The *Annals of Family Medicine* is your top-ranked primary care journal according to 2020 Journal Citation Reports.

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Connect with Collaborators on a Human Level

-Know their history (e.g. school they went to, their career trajectory)

-Know their family

-Support them outside of work (e.g. social media, hobbies, etc.)

-Get coffee, share a meal.

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Look for other sources

Simply Statistics

A statistics blog by Rafa Irizarry, Roger Peng, and Jeff Leek

On Hard and Soft Money

Admin 2011/12/19

"Researchers often have trouble getting their grants funded if they don't have a statistician on board. So there's often plenty of funding to go around for statisticians."

"What job candidates should really be worried about is whether the department will support them in their career."

Here are some things to look out for in any department:

- Is there administrative support staff to help with writing grants i.e. for drafting budgets, assembling biosketches, and other paperwork?
- Are their senior faculty around who have successfully written grants and would be willing to read your grants and give you feedback?
- Is the environment there sufficient for you to do the things you want to do? For example, are their excellent collaborators for you to work with? Powerful computing support? All these things will help you get an edge over people who don't have easy access to these resources.

Diversity is important

"our findings may positively contribute to the societal conversation and reinforce the conviction that good things happen when people of different backgrounds, cultures, and ethnicities come together to work towards shared goals and the common good."

nature COMMUNICATIONS

Article | OPEN | Published: 04 December 2018

The preeminence of ethnic diversity in scientific collaboration

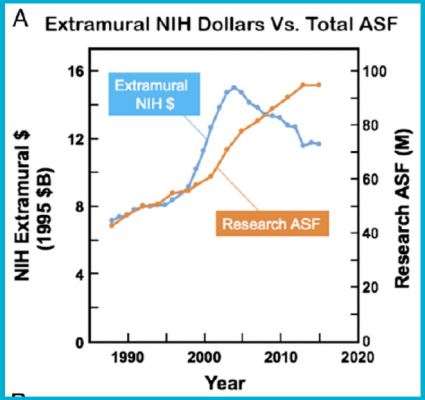
Bedoor K. AlShebli, Talal Rahwan & Wei Lee Woon

Nature Communications **9**, Article number: 5163 (2018) | Download Citation

Abstract

Inspired by the social and economic benefits of diversity, we analyze over 9 million papers and 6 million scientists to study the relationship between research impact and five classes of diversity: ethnicity, discipline, gender, affiliation, and academic age. Using randomized baseline models, we establish the presence of homophily in ethnicity, gender and affiliation. We then study the effect of diversity on scientific impact, as reflected in citations. Remarkably, of the classes considered, ethnic diversity had the strongest correlation with scientific impact. To further isolate the effects of ethnic diversity, we used randomized baseline models and again found a clear link between diversity and impact. To further support these findings, we use coarsened exact matching to compare the scientific impact of ethnically diverse papers

Discussion Questions



1. What resonated with you during this presentation?
2. What hasn't been covered that we could address as a group?
3. How may the COVID-19 pandemic impact the soft money environment? What can we do to navigate this wave of change?

Colleges Consider Layoffs as COVID-19 Wreaks Financial Havoc

The shift to hybrid and online learning has left universities struggling to close budget gaps in any way they can.

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Universities will never be the same after the coronavirus crisis

How virtual classrooms and dire finances could alter academia: part 1 in a series on science after the pandemic.

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