Enhancing Scientific Reproducibility through Transparent Reporting - A researcher (early career) perspective

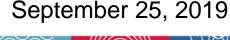
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Effects of transparency in previous reports on the ability of junior investigators to set up a lab

- ✓ Not unique to PIs starting a lab
- Counting on literature to establish models to address your scientific questions
 - What was bad?
 - Inability to replicate previous findings was a setback to establish a research program
 - Guessing experimental conditions and analysis parameters while troubleshooting can take a very long time
 - What was helpful?
 - Detailed methods papers were invaluable and instrumental
 - Papers that included raw values and individual data points

Obstacles faced by junior investigators to establish a lab/institutional culture of reproducibility and transparency

What is bad:

- ✓ Tenure process values quantity and impact factor of papers
- ✓ Rigor, reproducibility and transparency take time and are often not evaluated or rewarded
- ✓ Trainees in your lab will compare themselves with trainees in other labs and will resist rigorous processes if proper rewards are not in place
- ✓ Junior PIs tend to have less resources, admin and technical support and are often the only senior person in the lab establishing a culture of rigorous science and transparency in reporting involves a lot of one-on-one work
- ✓ Publishing process is much longer and involves more interactions with the editorial teams tenure clock is clicking and there is pressure to publish faster

Obstacles faced by junior investigators to establish a lab/institutional culture of reproducibility and transparency

Things that can help:

- Restructure tenure evaluation to equally value efforts in reproducibility and transparency for the community (i.e. methods papers, negative data, ect)
- Are the studies conducted by the tenure track rigorous? Is the community replicating the findings and following up on the studies independent of the impact?
- Create awards to recognize PIs and trainees that have exceptional reproducibility and transparency practices







Our Lab Practices

Things that have been easier to establish:

- > Keep track of experimental procedure details and include in methods section
- > All experiments are performed blind to experimental conditions
- Keep detailed records of the materials used (vendor, lot number, etc)

Things that have been challenging to establish:

- Keep all raw data labeled, easily accessible and organized
- It is ok to report data that doesn't fit perfectly with your model
- > Analyze and write methods as you collect data to avoid forgetting details

What we are not doing in my field: pre-registration



Thank you!





