

# Publication & Reporting

*From Avoidance to Transparency in  
Research*

GCC Rigor & Reproducibility Workshop  
January 18, 2017

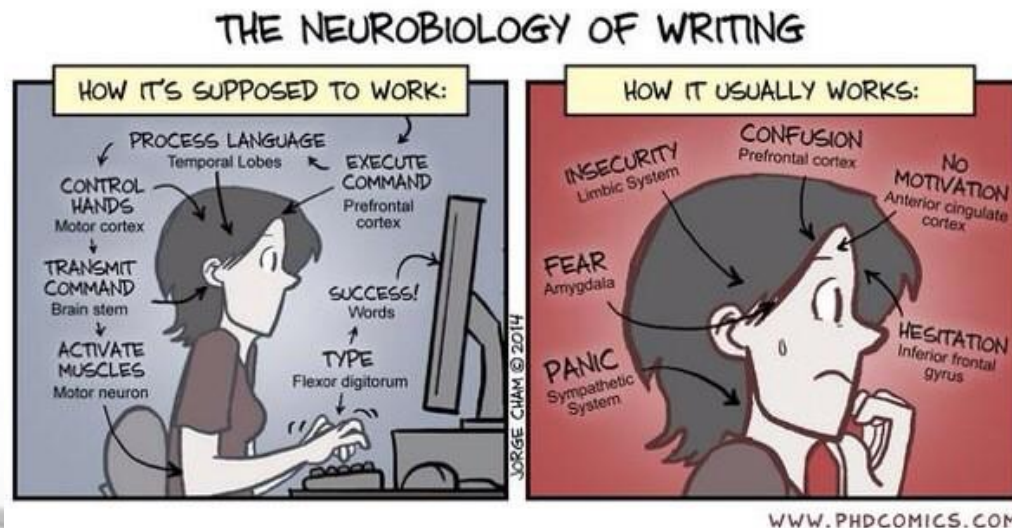
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# Why do we loathe Publication & Reporting?

- **List 2-3 examples in which you personally have exhibited avoidance behaviors (eg. procrastination) with respect to publication &/or reporting in any of your current or past research projects**
  - *Why?*

# What is Avoidance-Motivated Behavior/Coping?

- Our behavior when we distract ourselves from doing a task that is associated with an unpleasant emotion, typically fear
  - *Worry, Anxiety, Panic*
- We do something else instead to bring momentary relief
  - *Procrastination*



 **Shit Academics Say** @AcademicsSay · Nov 26  
"I love deadlines. I love the whooshing noise they make as they go by." - Douglas Adams

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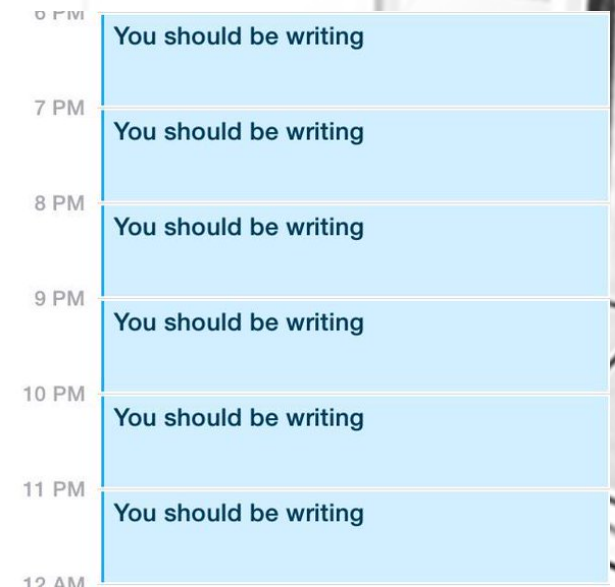
# Why do we exhibit avoidance behaviors in P&R?

- **Time Management**

- Administration & writing can take a significant amount of time away from productivity
- P&R deadlines can create time conflicts with other commitments (family, teaching, service, travel, ...)

- **“Lack of Progress”**

- Often, we feel like we have not been productive enough... which can be paralyzing
- Progress can feel like a moving target



# Avoidance Impacts P&R

- **Missed Deadlines**
- **Delayed Publications**
- **Late Reports to Regulatory & Funding Entities**
- **May Impact Promotion & Tenure, Career Advancement**

# Publication & Products of Research

- **Most commonly sought products of research**
  - Peer-review publications in top-tier journals
    - **May require open access agreements for data produced**
  - Conference papers / podium presentations
  - Abstracts / conference posters
  - Technology Development &/or Techniques
  - Inventions: Patents, patent applications (NPA, PPA), licensing agreements
  - “Other”
    - **Databases**, physical collections, A/V products, software, instrumentation, interventions, educational aids



# Publication & Products of Research

- **Who does the work?**
  - PI / Co-Is are typically senior authors
  - Post-docs, Research Assistants
  - Graduate Students, possibly Undergrad students
  - Lab Techs
- **Typically, these are team efforts which the PI supervises**
  - PI can ideally spend time to other projects and commitments
  - Majority of work likely done by junior scientists / trainees\*\*\*



# Research Reporting

- **Common types of reporting in research**
  - Department/Center/University Annual Reports
  - IRB / Human Subjects Protection
  - IACUC / Animal Research Oversight
  - Federal Regulatory Bodies (eg. FDA)
  - **Funding / Grants**
    - Federal (NIH, NSF, etc)
    - State (CPRIT)
    - Local (Dunn Foundation)
    - Private Foundations (AHA, ADA, etc)





# Research Performance Progress Reports (RPPRs)

- **Federally mandated format required by NIH**
  - Similar formats & information required by other funding bodies
  - Typically done on an annual basis
- **Only the PI or a noted delegate can initiate**
  - This can require a major time & resource commitment by the PI
  - **Majority of work likely done by PI**
    - *May have to formally submit the document to the funding body & institution*

# RPPR Required Components

- **Accomplishments**

- What were the major goals and objectives of the project?
- What was accomplished under these goals?
- What opportunities for training and professional development did the project provide?
- How were the results disseminated to communities of interest?
- What do you plan to do during the next reporting period to accomplish the goals and objectives?

# RPPR Required Components

- **Publications & Products**
- **Patient (or Animal) Recruitment and Safety Reports**
- **Collaborative Efforts**
  - Collaborating Institution Reports
  - Multi-site projects?
- **Impact**
  - Are you producing a sustained powerful influence in your research area with your progress?

# RPPR Required Components

- **Project Changes, Challenges, & Problems**
  - Changes in approach and reasons for change
  - Actual or anticipated problems or delays and actions or plans to resolve them
  - Changes that have a significant impact on expenditures
  - Significant changes in use or care of human subjects, vertebrate animals, biohazards, and/or select agents
- **Financial / Budgetary Reports**
- **Future Plans?**

# Hurdles to P&R?

- **Project Changes, Challenges, & Problems**
  - Difficulties in starting &/or running a project
    - *Instrumentation, Participants, Lab Staff, Time, Funding, ...*
    - *Lack of progress due to such difficulties*
- **Difficulty organizing required information by stated deadlines**
  - Time conflicts, communication challenges, ...
- **Little to no institutional support**
  - Some PIs need to fill out the report and submit it in its entirety
  - A lot of time can be devoted to understanding what info is required, especially without administrative support

# If P&R is so tough, why bother?

- **Negative Consequences**

- Withdrawal of funding
- Inability to support current & future projects
- Inability to achieve promotion, tenure, career advancement, ...

- **Lack of P&R means that biases can be introduced into the evidence base**

- **Reporting Bias**

- Selective revealing (or suppression) of information/outcome of a study
- Reporting some results, but not all results
- “Spinning” of unexpected or undesirable results
  - *Attributed to sampling or measurement errors*



# Reporting Biases associated with P&R

## Publication Bias

- Essentially this is non-publication of results
- Typically due to failure of an intervention
  - Lack of “positive” or “significant” results

## Time Lag Bias

- Rapid publication of exciting, but not full results
- Delay in publication of negative or non-significant findings
- Delayed publication can also occur if a PI is trying to boost “productivity” under a specific grant

# Reporting Biases associated with P&R

## Duplicate Publication Bias

- Publication of the same results in multiple journals or journal supplements
- Typically higher incidence for “positive” or “significant” results
- Incidence may be decreasing due to widely searchable electronic databases (eg. Pubmed)

## Location Bias

- Refers to journal of publication & impact factors
- Studies with “positive” and “significant” results tend to be
  - Published in journals with higher impact factors
  - Published in journals with better access (eg. indexed)

# Reporting Biases associated with P&R

## Citation Bias

- Tendency to cite positive findings more frequently
- May lead to perception that an intervention is more effective than it truly is, due to differential in number of citations
- Over-representation of positive findings

## Language Bias

- Publication of positive findings in a specific language
  - *eg. English*
- Non-significant results may be published in non-English language journals
- May impact meta-reviews and systematic review results

# Reporting Biases associated with P&R

## Knowledge Reporting Bias

- The frequency with which actions, outcomes, or properties are reported is not necessarily a reflection of actual incidence
  - Location of study, SES, or other factors may significantly impact results

## Outcome Reporting Bias

- Selective reporting of results
- Modification of hypotheses to fit findings
- Less likely to report adverse outcomes
  - Suppression
  - Highly problematic for drug & device trials

# Reporting Biases associated with P&R

## Funding Bias

- Tendency of a scientific study to support the interests of the study's financial sponsor
- Predetermined conclusions may bias researchers into an expectation bias
- Some sponsors require PIs to waive the right to publish findings that do not support the sponsor's interests
  - *Associated with publication bias & outcome reporting bias*
- Study design may be flawed from the start

# Strategies in Addressing Bias in Publishing

- Build a case in which negative results can provide a positive impact on the evidence base
- Don't suppress results, particularly negative results or “non-significant” results
- Don't rush or delay publication
- Avoid publishing the same results in more than one manuscript unless there is a very good reason to do so (new analyses, etc)
- Carefully consider the impact factor, scope, and audience of the journals you submit to
  - *International? Clinical?*
- Try to balance the story you tell with respect to citations



# Strategies in Addressing Bias in Reporting

- **Know the strengths & weaknesses of your team**
- **Familiarize yourself with expectations of editors, review boards, funders, & your institution**
- **Know your deadlines**
- **Know what components are needed for reporting**
- **Know your resources**
  - Do you have administrative support? How much? What type?

# A New Year's Resolution...

**What can you (&/or your lab) do this year to improve your relationship with publication, reporting, & bias?**

- Come up with 2 - 3 resolutions with implementation strategies to share & discuss with your breakout group.

