

Research careers in a rapidly changing academic environment

We won't be...



**BULLIED INTO
BAD SCIENCE**

www.BulliedIntoBadScience.org

Slides CC-BY-SA 4.0 at osf.io/8hdk6/

Dr. Corina Logan



**Comparative
Behavioral
Ecology**

Max Planck Institute
for Evolutionary Anthropology
corina_logan@eva.mpg.de | [@LoganCorina](https://twitter.com/LoganCorina)



We won't be...



Corina Logan & Laurent Gatto



Leading individuals and
institutions in adopting open
practices to improve research rigor

ECRs often feel **pressured** into taking actions
against our **ethics** to pursue an academic career
(e.g., publishing in particular journals)

- ECRs: Sign the **petition** to help us change academic culture
- Non-ECRs: Join the list of **supporters** by valuing open practices, especially when making decisions about hiring, promotion, and grants

www.BulliedIntoBadScience.org

Incentive structure at odds with research rigor

To get jobs and grants, told to publish in **high impact factor journals** that **select articles based on subjective impact**.

These journals select articles that tell **sexy stories...**

...which leads researchers to **manipulate the story** (HARK) **and stats** (P-hack) to make a story sexy (this selects for bad science¹).

Many of these journals **do not support open practices**

What happens when we play this game?

¹Smaldino & McElreath 2016 Roy Soc Open Sci

Exploitative route



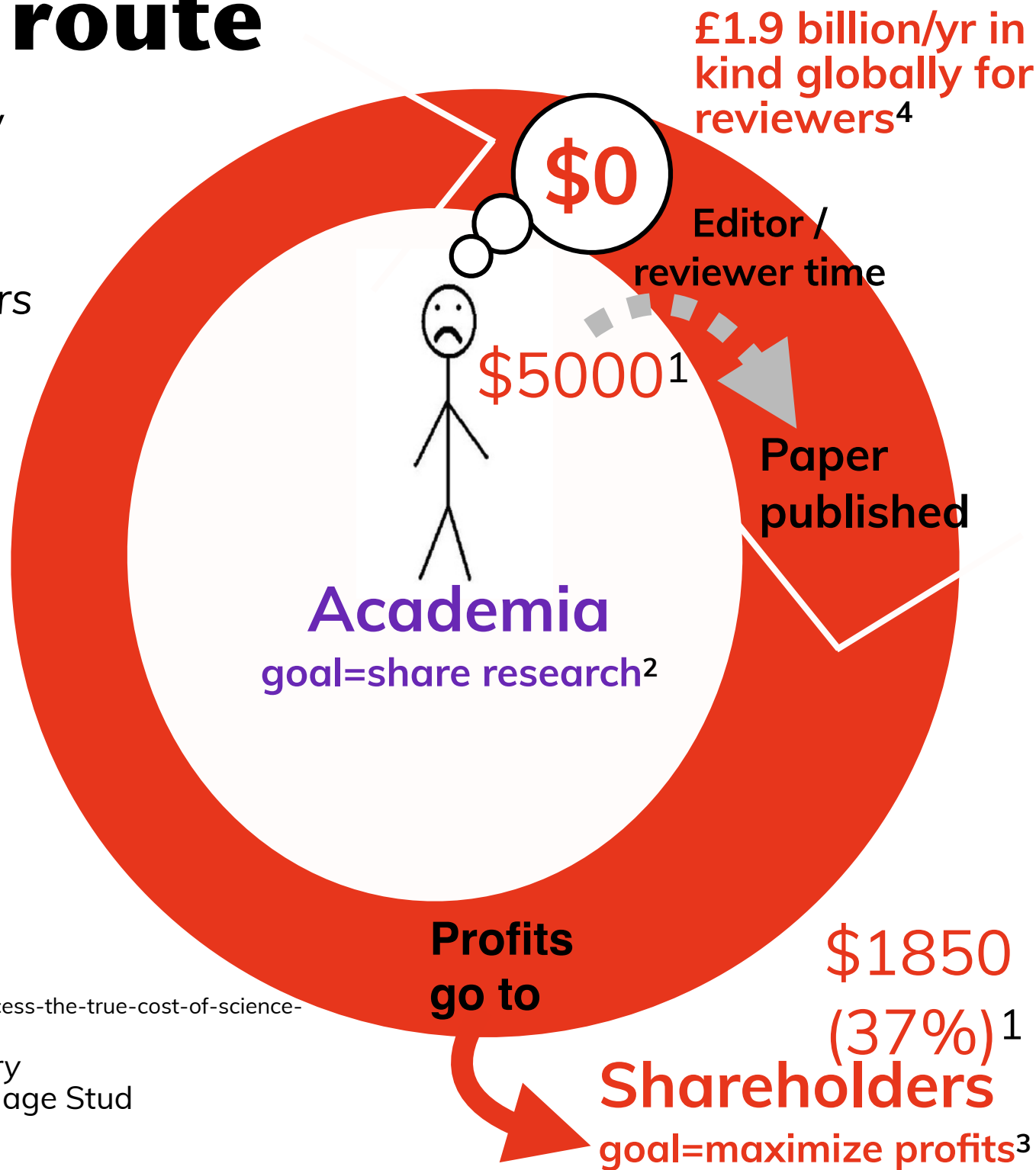
¹Van Noorden 2013 [nature.com/news/open-access-the-true-cost-of-science-publishing-1.12676](https://www.nature.com/news/open-access-the-true-cost-of-science-publishing-1.12676)

²Nosek & Bar-Anan 2012 *J Psych Inquiry*
Logan 2017 F1000Research

Exploitative route

Academics perform quality control at no cost to publishers

What services do publishers actually provide?



¹Van Noorden 2013 nature.com/news/open-access-the-true-cost-of-science-publishing-1.12676

²Nosek & Bar-Anan 2012 *J Psych Inquiry*

³Husted & de Jesus Salazar 2006 *J Manage Stud*

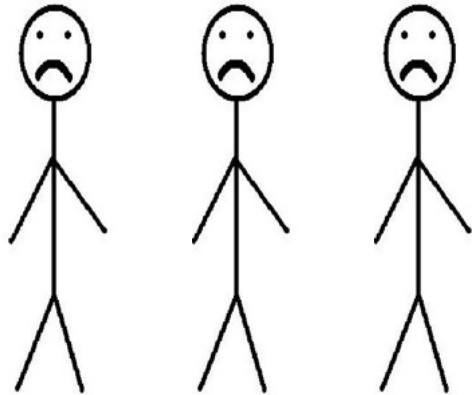
⁴Research Information Network 2008

Logan 2017 F1000Research

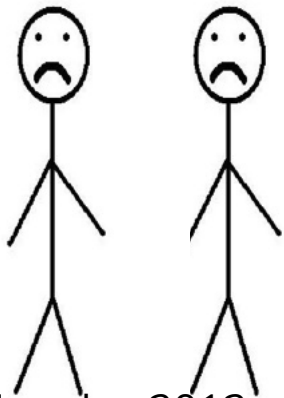
Exploitative route

**Indirect
discrimination**

Patient MD Public



Other
researchers



PAYWALL

Public
funds
research

\$0

£1.9 billion/yr in
kind globally for
reviewers⁴

Editor /
reviewer time

\$5000¹

Paper
published

Academia

goal=share research²

Available
to read by
scholarly
rich



Profits
go to

**\$1850
(37%)¹**

Shareholders
goal=maximize profits³

¹Van Noorden 2013 nature.com/news/open-access-the-true-cost-of-science-publishing-1.12676, ²Nosek & Bar-Anan 2012 *J Psych Inquiry*, ³Husted & de Jesus Salazar 2006 *J Manage Stud*, ⁴Research Information Network 2008, Murray-Rust 2011 blogs.ch.cam.ac.uk/pmr/2011/10/05/the-scholarly-poor-dentists/, Tennant et al. 2016 *F1000Research*, Logan 2017 *F1000Research*

What can we do?

Researchers:

Connect the costs of publishing with our publishing choices

Change our behavior to stop exploiting ourselves and discriminating against other researchers and the public

...because all of the options we need exist **right now**

The ethical framework

- 1) **Researchers** and **publishers** have a **responsibility to the public** to provide them with **free access to publicly funded products**, which are a common good^{1,2}
- 2) **Publishers** of research products have a **responsibility to researchers** to value the generation and packaging of knowledge³
- 3) **Researchers** have a **responsibility to the public to conduct rigorous research** because it will serve as the foundation for the advancement of discoveries, it provides the best value for money, and earns public trust⁴

¹Stilgoe et al. 2013 *Res Policy*

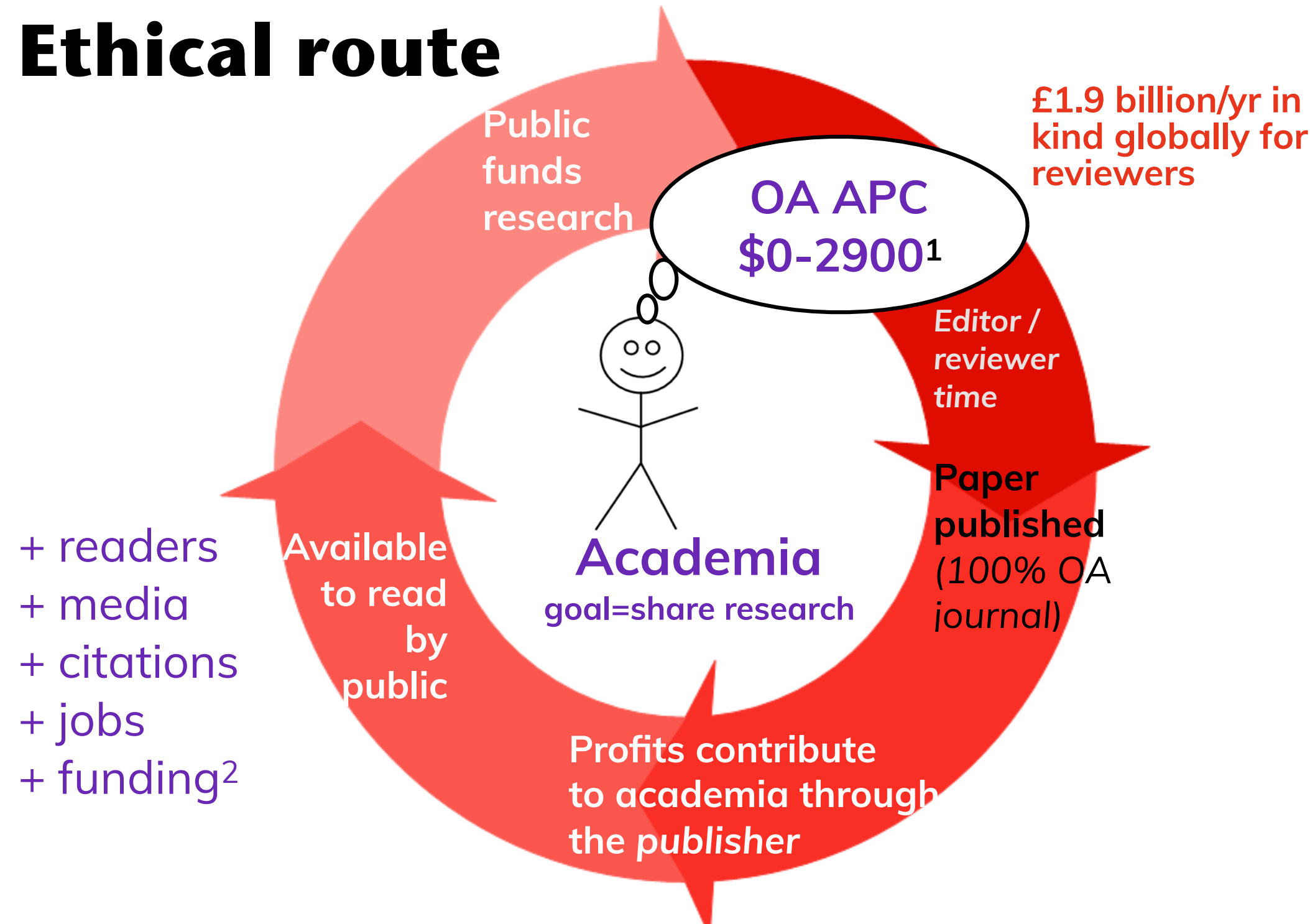
²Woodward 1990 *Library Trends*

³Fuchs & Sandoval 2013 *TripleC: Communication, Capitalism & Critique*

⁴Nosek & Bar-Anan 2012 *J Psych Inquiry*

Logan 2017 F1000Research

Ethical route



¹SPARC <http://sparceurope.org/oaca/>, ²McKiernan et al. 2016 eLife, Tennant et al. 2016 F1000Research, Logan 2017 F1000Research

If I were starting my PhD today

- Vote with my money
- Select a supportive supervisor
- Make my research transparent and open
- Select undergrads fairly
- Select editors who support open practices

Students are in a unique position of power

Paying customers can vote with their money

Tell the university to stop sending your tuition and fees to publishers

Exert selection pressure

Choose a supervisor who shares your values. If there aren't any, tell the university

- Resource: #BulliedIntoBadScience supporter's letter
http://bulliedintobadscience.org/#non-ecrs: support_the_campaign

Where to get support



About OpenCon: conference, satellites & community

OpenCon is more than a conference. It's a platform for the next generation to learn about Open Access, Open Education, and Open Data, develop critical skills, and catalyze action toward a more open system for sharing the world's information—from scholarly and scientific research, to educational materials, to digital research data..

OpenCon conference (October)
<https://www.opencon2018.org>

OpenCon satellite group



University
Harassment office
Human Resources



Declaration on Research Assessment
UIT Tromsø is a signatory
sfdora.org

Massive Open Online Course <https://opensciencemooc.eu>

If I were starting my PhD today

...making my lab transparent and open

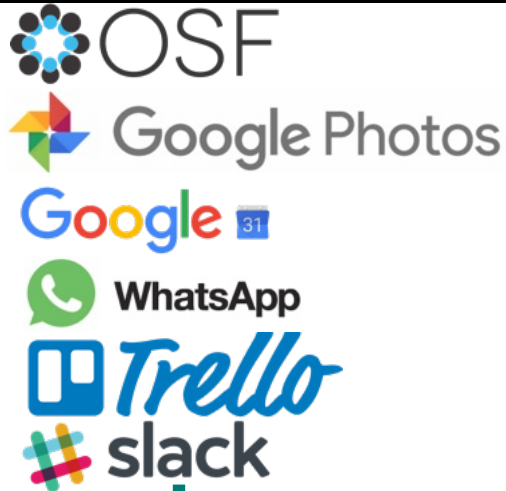
- All studies **preregistered** (GitHub) and **peer reviewed** (PCI Ecology) before data collection begins
- Final results/data/R code published in **100% OA journals at ethical publishers**
- **Select staff**: read their research rather than using metrics (signed sfDORA.org), evidence/willingness to engage in open practices, role model for groups traditionally underrepresented in STEM
- Automating the **workflow**

Being open & transparent saves time & improves research

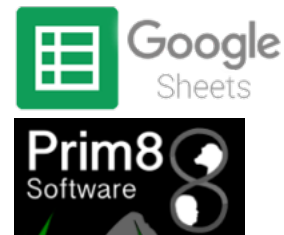
THE
GRACKLE
PROJECT



Coordinate team



Collect data
on laptops



Prereg → Preprint



Peer review #2



Hypotheses

Papers

Preregister



3D print & laser cut
apparatuses



Code experiments



Back up data



Peer review #1



All programs = free to use



Preregister
GitHub

Version tracked
Assign DOI
Living doc
Any format

<https://github.com/corinalogan/grackles>

Table of Contents

Preregistrations

1. Logan CJ, Rowney C, Bergeron L, Seitz B, Blaisdell A, Johnson-Ulrich Z. 2017. [Is behavioral flexibility manipulatable and, if so, does it improve flexibility and problem solving in a new context?](#). GitHub.
2. Logan CJ, Johnson-Ulrich Z, Rowney C, Bergeron L. 2017. [Does manipulating behavioral flexibility affect exploration and neophilia?](#). GitHub.

3. Logan CJ, Johnson-Ulrich Z. 2017. [Behavioral flexibility improves reversal learning in grackles](#). GitHub.

4. Blaisdell A, Johnson-Ulrich Z, Rowney C, Bergeron L. 2017. [More on causal cognition: the removal of shape reversals from H3a and H3b \(to reduce the amount of time each bird spends on the task\)](#). GitHub.

5. Logan CJ, Bergeron L, Johnson-Ulrich Z. 2017. [Number of food types affects reversal learning](#). GitHub.

6. Logan CJ, Johnson-Ulrich Z, Rowney C, Bergeron L. 2017. [The costs and constraints of behavioral flexibility](#). GitHub.

7. Logan CJ, Johnson-Ulrich Z, Rowney C, Bergeron L. 2017. [Why does behavioral flexibility improve reversal learning?](#). GitHub.

###A. STATE OF THE DATA

This preregistration was written prior to collecting data. Pilot data on serial reversal learning in grackles was collected January through April 2018, which informed the revision of 1) the criteria for reversal learning, 2) more accurate language for H1 P1 (they generally get faster rather than getting slower), 3) the removal of shape reversals from H3a and H3b (to reduce the amount of time each bird spends on the task), and 4) the criterion for touch screen serial reversals in H3b.

###B. PARTITIONING THE RESULTS

We may present the different hypotheses in separate papers.

###C. HYPOTHESES

H1: Behavioral flexibility, as measured by reversal learning using colored tubes, is manipulated.

Prediction 1: Individuals improve their flexibility on a serial reversal learning task using colored tubes. They will require fewer trials to reverse a preference as the number of reversals increases (manipulation condition). The control condition will have been manipulated relative to control birds who do not undergo serial reversal learning. The control condition will be matched to manipulated birds for experience (they will experience the same number of trials). There will be no possibility of a functional tube preference because both tubes will be the same color, therefore either choice will be correct.

P1 alternative 1: If the number of trials to reverse a preference does not correlate with or



All text & code in ONE doc!

The screenshot displays the RStudio environment with the following components:

- Top Panel:** Shows the menu bar (File, Edit, Code, View, Plots, Session, Build, Debug, Profile, Tools, Window, Help) and the toolbar. The status bar indicates the current file is `~/GTGR - master - RStudio`.
- Left Panel:** Contains the file explorer showing `g_causal.Rmd` and `g_expansion.Rmd`. A context menu is open over `g_expansion.Rmd` with options: Knit to HTML, Knit to PDF, Knit to Word, Knit with Parameters..., and Clear Knitr Cache... The editor shows R code for data checking, including a histogram and a Q-Q plot.
- Right Panel:** Contains the Environment, History, and Git panels. The Environment panel shows the current branch is ahead of 'origin/master' by 9 commits. The History panel shows a list of commits. The Git panel shows the current branch is 'master'.
- Bottom Panel:** Contains the Console and R Markdown panels. The Console shows the output of the R code, including the message "R is a collaborative project with many contributors." The R Markdown panel shows the text of the document, which is titled "E. ANALYSIS PLAN".

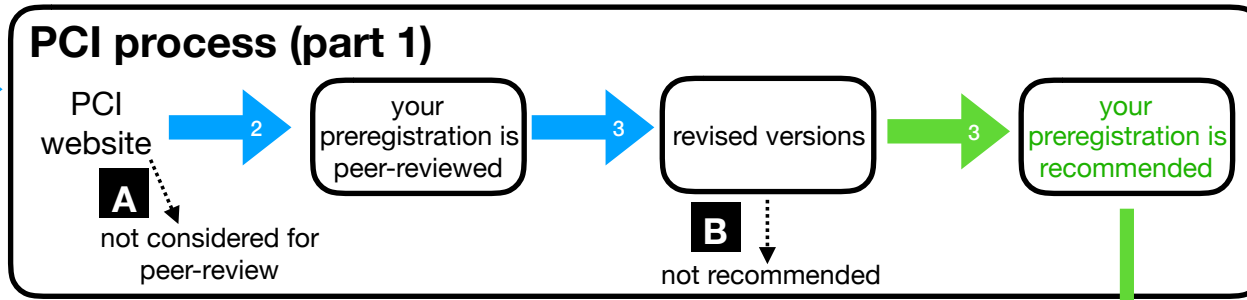
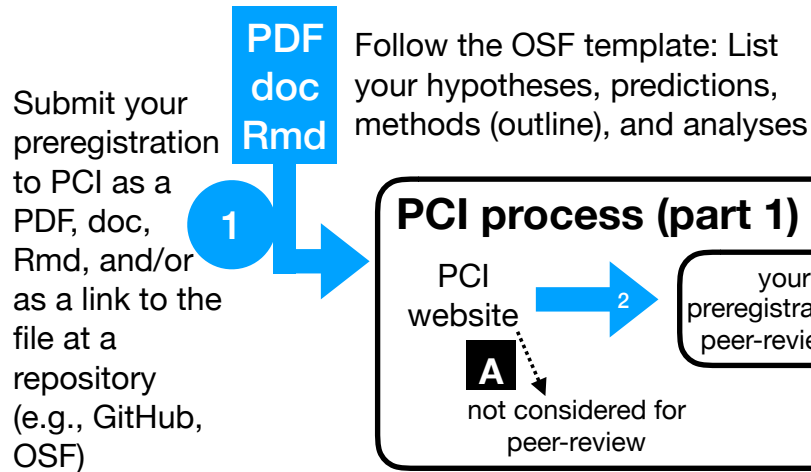
The R code in the editor is as follows:

```
186
187 ##
188
189 We do not plan to exclude any data. When missing data occur, the existing
190 data for that individual will be included in the analyses for the tests they
191 completed. Analyses will be conducted in R (current version `r getRversion()`;
192 Core Team (2017)). We will analyze data for females and males separately because each sex
193 has a distinct natural history (Johnson and Peer (2001)).
194
195 The data will be visually checked to determine whether they are normally distributed
196 via two methods: 1) normality is indicated when the histograms of actual data match
197 those with simulated data (Figure 2), and 2) normality is indicated when the
198 residuals closely fit the dotted line in the Normal Q-Q plot (Figure 3) [Zuur, Ieno,
199 and Saveliev 2009].
200
201 ```{r dist_checkHistQQ, eval=FALSE, warning=FALSE, results='asis', echo=TRUE,
202 fig.cap="**Figure 2.** Part 1. The distribution of the actual data versus what a
203 normal distribution would look like with simulated data. Part 2. Residuals vs fitted:
204 checking for homogeneity, which is satisfied if residuals have an even spread across
205 the x-axis; Normal Q-Q: residuals are normally distributed if they are on the
206 diagonal line; Residuals vs leverage: Cook's distance <1 means no influential
207 observations [Zuur2009]."}
208 edge <- read.csv("~/Users/corina/GTGR/data/data_pop.csv", header=T, sep=",",
209 stringsAsFactors=F)
210
211 # Separate the sexes
212 fem <- edge[edge$Sex == "f", ]
213 mal <- edge[edge$Sex == "m", ]
214
215 # Check the dependent variables for normality: Histograms
216 # females
217 op <- par(mfrow = c(4, 4), mar = c(4, 4, 2, 0.2))
218 # This is what the distribution of actual data looks like
219 hist(fem$TrialsToReverseLast, xlab = "Flexibility: Trials to reverse",
220 main = "Actual Data")
221 hist(fem$FlexRatio, xlab = "Flexibility: Ratio correct", main = "Actual Data")
222 hist(fem$NumberHumanFoodsEaten, xlab = "% human foods eaten",
223 main = "Actual Data")
224 hist(fem$AvgTarsusLength, xlab = "Condition: Avg tarsus length",
```

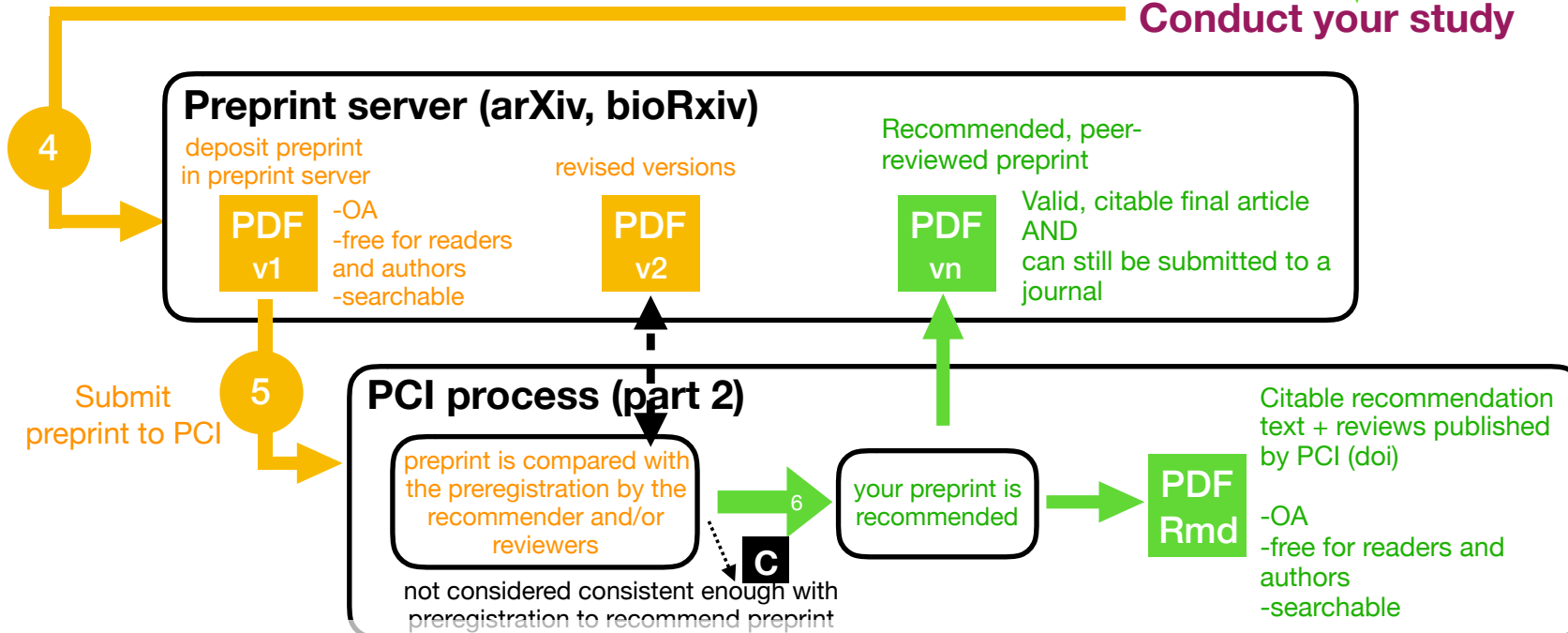
Pre-study peer review prevents wasting resources, improves research rigor

BEFORE conducting your study...

Submit your preregistration to *PCI Ecology* for peer review



Conduct your study



Hypotheses

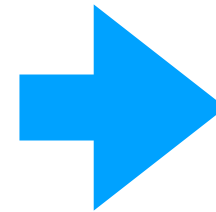
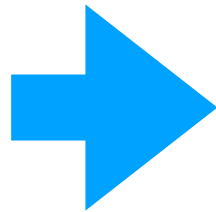
Peer review #2
 Peer Community In Ecology
Free and transparent preprint and postprint recommendations in ecology

Papers

Preregister
 **GitHub**

Every change & its reason is noted in prereg & at GitHub (in commit title)

Peer review #1
 Peer Community In Ecology
Free and transparent preprint and postprint recommendations in ecology



Got pilot data
Revised criterion
Added co-authors

Touch screen code
tweaked for grackles

Sample size smaller
than expected



Files, protocols, instructions in ONE place,
everyone can revise the latest version

 OSFHOME ▾

My Quick FilesMy ProjectsSearchSupportDonateCorina Logan ▾

↑Data collection protocolsFilesWikiAnalyticsRegistrationsContributorsAdd-onsSettings

PrivateMake Public0...

The Grackle Project /

Data collection protocols

Contributors: [Corina Logan](#), [Aaron Blackwell](#), [Ben Trumble](#), [Aaron Blaisdell](#), [Anne Kandler](#), [Dieter Lukas](#), [Claudia Wascher](#), [Maria Pacheco](#), [Ananias Escalante](#), [Zoe Johnson-Ulrich](#), [Richard McElreath](#), [Luisa Bergeron](#), [Aelin Mayer](#), [Carolyn Rowney](#), [Angela Bond](#), [Elysia Mamola](#), [Aldora Messinger](#)

Date created: 2017-06-16 05:48 PM | Last Updated: 2018-06-14 10:04 PM

Category:  Methods and Measures

Description: Add a brief description to your component

License: Add a license

Wiki

Protocol for [staying safe in the heat](#) - our #1 priority!

Protocol timeline

1 March = find nest sites

7 March = start nest checks

1 Sept (or when juveniles are independently feeding) = bring birds into aviaries for testing (through March)

Year-round = focal follows and banding

Protocols: Behavior

[Read More](#)

Files

Click on a storage provider or drag and drop to upload

Citation

osf.io/p4auy ▾

Components

Add ComponentLink Projects

 **Cell counts**

[Logan, Escalante, Blackwell & 14 more](#)

...

Tags

Add a tag to enhance discoverability

Recent Activity

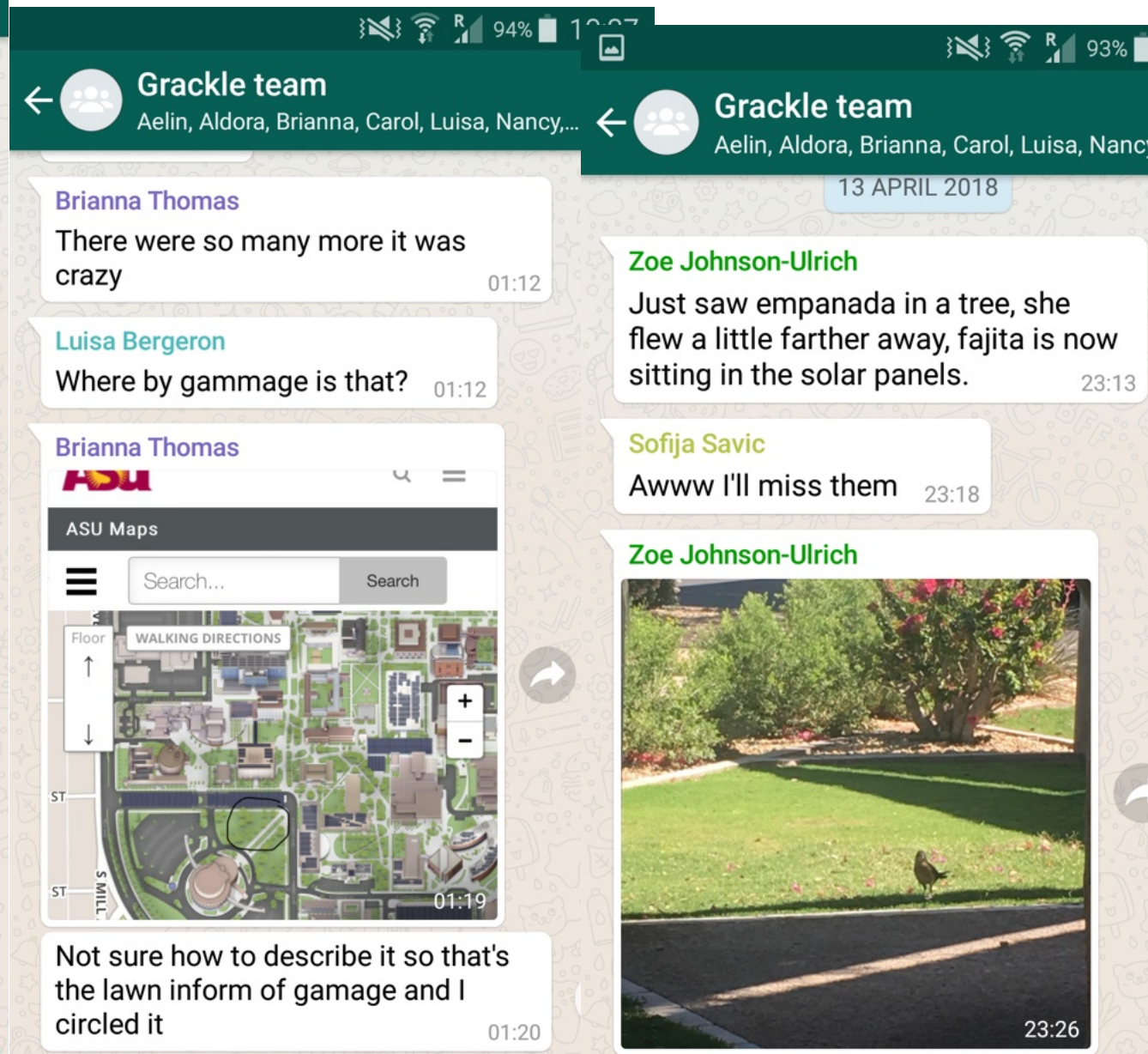
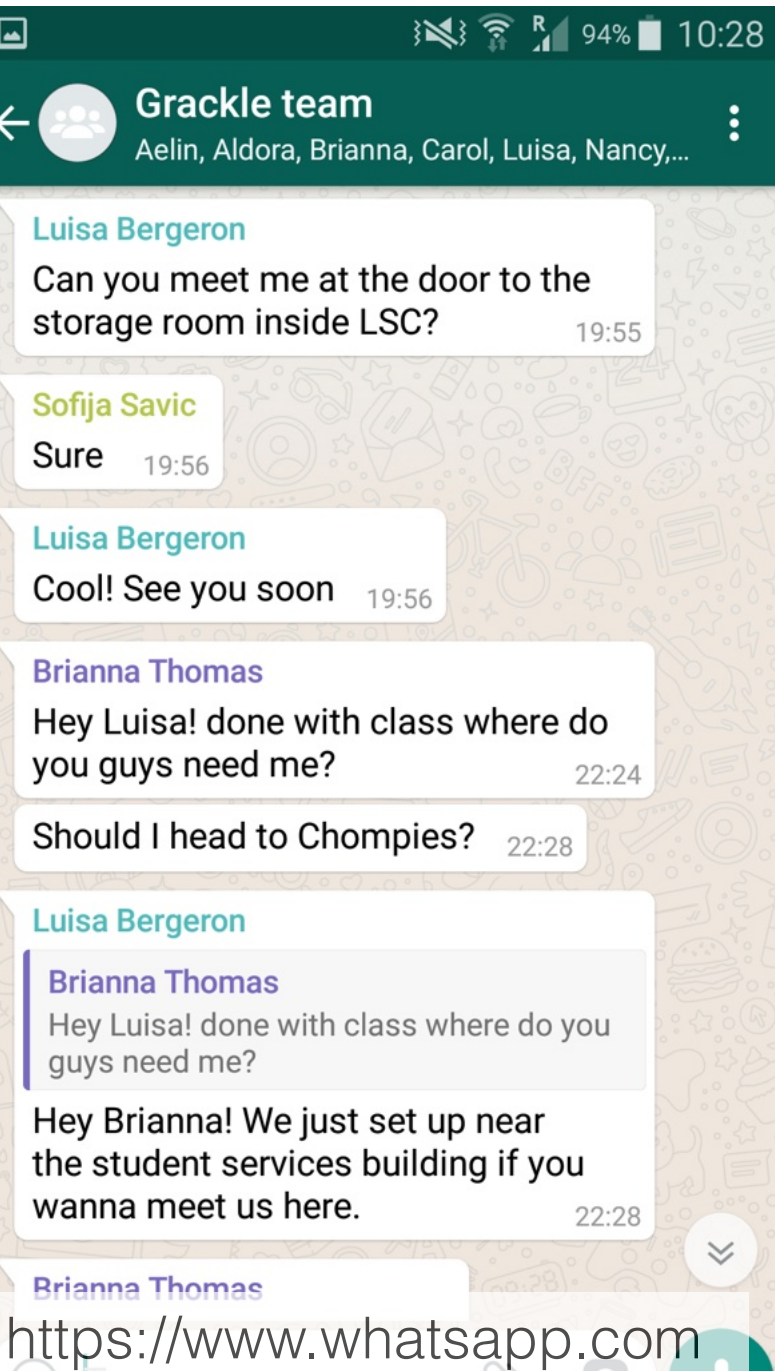
<https://osf.io>



Field coordination



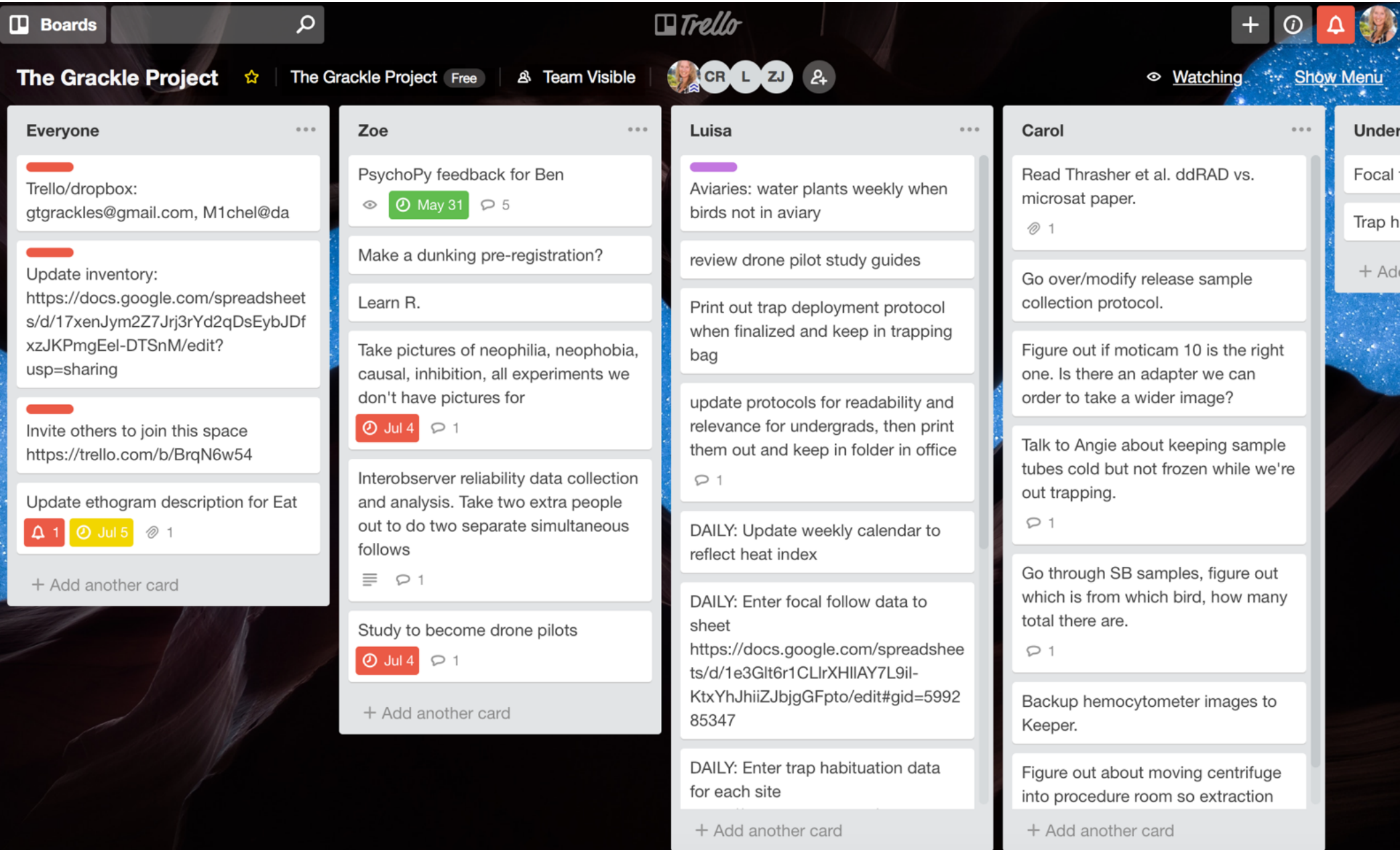
Where should I meet you right now? Share potential new sites (map), photos, live location





To do list


Set deadlines, assign docs to tasks, converse within a task



The Grackle Project ☆ | The Grackle Project Free | Team Visible | CR L ZJ +

Everyone

- Trello/dropbox:
gtgrackles@gmail.com, M1chel@da
- Update inventory:
<https://docs.google.com/spreadsheets/d/17xenJym2Z7Jrj3rYd2qDsEyBJDfXzJKPmgEel-DTSnM/edit?usp=sharing>
- Invite others to join this space
<https://trello.com/b/BrqN6w54>
- Update ethogram description for Eat
1 Jul 5 1

+ Add another card

Zoe

- PsychoPy feedback for Ben
May 31 5
- Make a dunking pre-registration?
- Learn R.
- Take pictures of neophilia, neophobia, causal, inhibition, all experiments we don't have pictures for
Jul 4 1
- Interobserver reliability data collection and analysis. Take two extra people out to do two separate simultaneous follows
1
- Study to become drone pilots
Jul 4 1

+ Add another card

Luisa

- Aviaries: water plants weekly when birds not in aviary
- review drone pilot study guides
- Print out trap deployment protocol when finalized and keep in trapping bag
- update protocols for readability and relevance for undergrads, then print them out and keep in folder in office
1
- DAILY: Update weekly calendar to reflect heat index
- DAILY: Enter focal follow data to sheet
<https://docs.google.com/spreadsheets/d/1e3Glt6r1CLlrXHIIAY7L9il-KtxYhJhiiZJbjgGFpto/edit#gid=599285347>
- DAILY: Enter trap habituation data for each site

+ Add another card

Carol

- Read Thrasher et al. ddRAD vs. microsat paper.
1
- Go over/modify release sample collection protocol.
- Figure out if moticam 10 is the right one. Is there an adapter we can order to take a wider image?
- Talk to Angie about keeping sample tubes cold but not frozen while we're out trapping.
1
- Go through SB samples, figure out which is from which bird, how many total there are.
1
- Backup hemocytometer images to Keeper.
- Figure out about moving centrifuge into procedure room so extraction

+ Add another card

<https://trello.com>

interfaces with  slack



Coordinate team Organize conversations, de-clutter email, send a To Do card to Trello



grackles ▾

- Corina 🦜
- # aviary
- # blood
- # focalfollows
- # general
- # interobserverrel
- # lab_stuff
- # nestchecks
- # preregistrations
- # purchasing
- # random
- # scouting
- # students
- # trapping
- # website

Direct Messages +

- ♥ slackbot
- Corina (you) 🦜
- ⚡ Aaron
- ⚡ carolyn rowney
- o Dieter Lukas
- ⚡ Luisa
- ⚡ Zoe

+ Invite People

Apps +

- GitHub
- Google Drive
- trello

#general

☆ | 7 | 0 | Unternehmensweite Ankündigungen und alle Angelegenheiten, di

📞 ⓘ ⚙️ 🔍 Search @ ☆ ⋮

general

You created this channel on May 11th. This is the very beginning of the **#general** channel. Purpose: Das ist der Channel für Kommunikation und Ankündigungen im gesamten Workspace. Alle Mitglieder sind in diesem Channel. ([edit](#))

+ [Add an app](#) [Invite others to this channel](#)

Friday, May 11th



Corina 🦜 9:48 AM
joined #general.



Corina 🦜 9:51 AM
renamed the channel from "allgemein" to "general"



Corina 🦜 4:20 PM
One thing that came up in my conversation with Carol today is that we need to start **booking a room for our team meetings**. Carol will look into who to ask about the room on your floor. **Zoe**, will you please take charge of booking a room every week?



4 replies Last reply 2 months ago



Zoe 5:52 PM
joined #general.

Saturday, May 12th



Zoe 12:17 AM
Heat Safety So there is an OSHA app that will calculate the Heat Index AND the risk level (lower, moderate, high, etc.) for us that might be good to check and keep track of while outside just in case the forecast is wrong. It's the "OSHA-NIOSH Heat Safety Tool".

https://www.osha.gov/SLTC/heatillness/heat_index/heat_app.html (edited)



4 replies Last reply 2 months ago

Monday, May 14th



Luisa 5:12 PM

+ Message #general

interfaces with



<https://slack.com>



3D print & laser cut apparatuses



Use open source freeware to make apparatuses, share on GitHub so study is replicable

Design files for the grackle multi-access box

For the laser cutter:

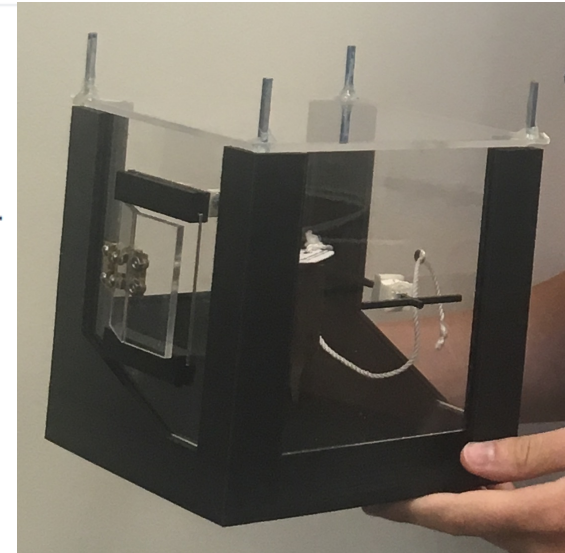
- Lasercutter.pdf - this is the file that the laser cutter will work from
- Lasercutter.pptx - this is the file you can edit and then print to PDF for the laser cutter

For the 3D printer:

- The .stl files are the ones the printer will work from (non-editable)
- The .FCStd files are editable in [FreeCad](https://www.freecadweb.org)

License [CC-BY-SA 4.0](https://creativecommons.org/licenses/by-sa/4.0/): share alike and attribute the original source using this citation:

Logan CJ, Johnson-Ulrich Z. 2018. The Grackle Project multi-access box. GitHub <https://github.com/corinalogan/grackles>





Collect data on laptops



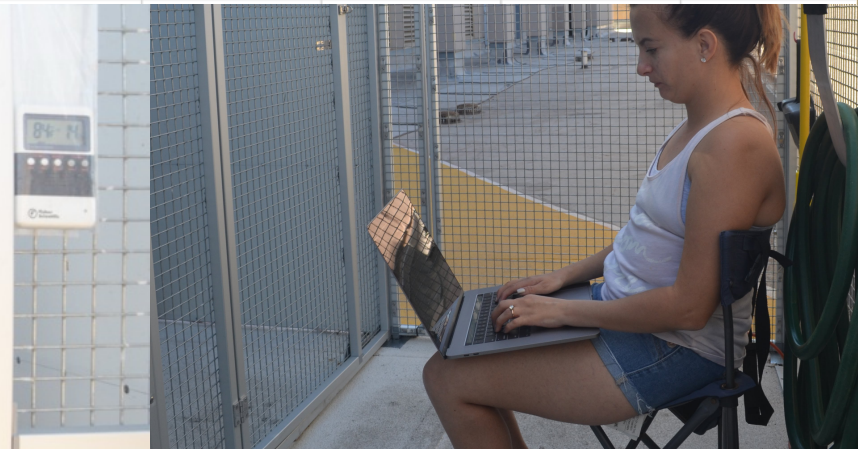
ONE data sheet, version tracked, 2+ people can enter data at same time

data_reverseraw ☆

File Edit View Insert Format Data Tools Add-ons Help Last edit was 8 days ago

100% \$ % .0 .00 123 Calibri 12 B I S A

	A	B	C	D	E	F	G	H	I	J	K	L	M
1	Date	Experimenter	Batch	ID	Experiment	Reversal	Session	Trial	StartTime	OptionOnLeft	CorrectChoice	Criteria	Preference?
2	29-Jan-18	ZJU		1	Empanada	Color Reversal	training	1	1	10:28 AM	one yellow tube f	0	<i>criterion: successfully obtain the f</i>
3	29-Jan-18	ZJU		1	Empanada	Color Reversal	training	1	2	~11:30 am	put food containe	0	
4	29-Jan-18	ZJU		1	Empanada	Color Reversal	training	1	3	1:12 PM	one yellow tube f	0	
5	29-Jan-18	ZJU		1	Empanada	Color Reversal	training	1	4	2:27 PM	one yellow tube f	0	
6	30-Jan-18	ZJU		1	Empanada	Color Reversal	training	2	5	10:56 AM	one yellow tube f	0	
7	30-Jan-18	ZJU		1	Empanada	Color Reversal	training	2	6	12:30 PM	one yellow tube f	0	
8	30-Jan-18	ZJU		1	Empanada	Color Reversal	training	2	7	12:45 PM	one yellow tube f	0	
9	31-Jan-18	ZJU		1	Empanada	Color Reversal	training	3	8	10:42 AM	one yellow tube f	0	
10	31-Jan-18	ZJU		1	Empanada	Color Reversal	training	3	9	12:18 PM	one yellow tube f	0	
11	31-Jan-18	ZJU		1	Empanada	Color Reversal	training	3	10	12:27 PM	one yellow tube f	0	
12	1-Feb-18	ZJU		1	Empanada	Color Reversal	training	4	11	10:21 AM	one yellow tube f	0	
13	1-Feb-18	ZJU		1	Empanada	Color Reversal	training	4	12	10:30 AM	one yellow tube f	0	



<https://www.google.com/sheets/about/>

If I were starting my PhD today

Selecting undergrads fairly

Set a recruitment goal based on local demographics

Our **goal is to recruit a diverse team of undergrads** (note: ASU undergrads in STEM=65% white, 36% female, 2016 data. Compare with [university-wide stats](#)), which is consistent with ASU's [goal](#). Therefore, it is very important that we target Underrepresented Minorities (URM) in STEM when advertising research opportunities to ensure we have a diverse pool to choose from.

If we get many applications at one time, we won't interview until at least [35% of the applicants are URM](#)s.

Currently, we don't get many applications and they come in one at a time. Our strategy is to take on students (unless there is something in their application that suggests they wouldn't be a good fit for the project) until the lab is full, and then put subsequent applicants on a waiting list that we can interview when an opening arises.

Make a recruitment strategy that targets URM groups

- Remember: URM's may not have had the privilege of learning how to play the game so REACH OUT



*Advancing Chicanos/Hispanics
& Native Americans in Science*

If I were starting my PhD today

Selecting undergrads fairly

Apply

Students can **apply** via Corina's [website](#).

Note: the language on my website (and in the Email Announcement below) is [feminine-coded](#), which means that women are more likely to apply to this type of ad and men are not deterred from applying. I avoided [buzzwords](#), listed [skills that are needed](#) and not the ones I can train, and stated that I [want URM](#)s to apply.



Mika McKinnon ✓

@mikamckinnon

Following



Dr. Katherine Crocker

@cricketcrocker

Follow

Replying to @mikamckinnon @LoganCorina @DrAngelaT

For best practices:

1. Actively target & recruit ("I want you to apply!") into pool.
2. Explicitly say that you want applications from URM
s.

11:29 AM - 28 Sep 2017

Replying to @mikamckinnon @LoganCorina @DrAngelaT

Dissuaded by buzzwordy recruitment language that makes it sound like I will be a Broader Impacts token.

11:37 AM - 28 Sep 2017



Mika McKinnon ✓

@mikamckinnon

Following

Replying to @mikamckinnon @LoganCorina @DrAngelaT

10. Write job posting with skills actually needed vs ones you can train. (URMs typically only apply when they meet 100% of criteria)

<http://corinalogan.com/students.html>, <http://gender-decoder.katmatfield.com>, <https://twitter.com/mikamckinnon/status/913470650521600000>, <https://twitter.com/mikamckinnon/status/913474567032651776>

If I were starting my PhD today

Make students feel included

- Tips from **Collaborating with Men**
<https://www.murrayedwards.cam.ac.uk/about/Collaborating-with-Men>
- Give **fun talks** - makes people feel more included¹
- Without **inclusion**, diversity initiatives might not be enough

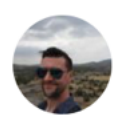


Corin@ Logan
@LoganCorina

#PivotPoint Sucheta Nadkarni: power talks alienate audiences while tentative talks build trust. Use humor. Be open. @GraduateUnion

12:38 AM - 27 Jun 2017

#Prestige=subjectively defined by the privileged. No wonder only privileged have it. Prestige=bad 4 science & bad 4 non-privileged scientists



Jon Tennant ✓
@Protohedgehog



WhoseKnowledge? @WhoseKnowledge

Latin America has most #openaccess journals. >1000 journals in @RedeSciELO network. Have to prove credibility daily #OpenGlobalSouth

"Too few students from disadvantaged backgrounds make it into science." Read this, via @NatureNews [nature.com/news/is-science...](https://www.nature.com/news/is-science...) #socialmobility



Is science only for the rich?

Around the world, poverty and social background remain huge barriers in scientific careers.

[nature.com](https://www.nature.com)

¹Charitty et al. 2017 Science
diversityinacademia.strikingly.com

twitter.com/LoganCorina/status/879604731123027969
twitter.com/LoganCorina/status/868491581145444352
science.sciencemag.org/content/357/6356/1101
twitter.com/Protohedgehog/status/869312773540335617

If I were starting my PhD today

Writing unbiased reference letters



Claudia Wascher

@WascherClaudia

Following



Very pleased to see the instructions:
"We would request that you do not use the candidate's name, but instead refer to them as "the candidate". In addition, please remove any pronouns that indicate the candidate's gender. Instead, please use "they" instead of "he" or "she"." 1/2

4:23 AM - 21 Apr 2018

Make sure it is masculine-coded because this is perceived as more impressive

Select editors who value OA

Editors4BetterResearch with Chris Chambers & Brad Wyble

Together with [@LoganCorina](#) and [@bradpwyble](#) we are soon launching a new initiative called Editors4BetterResearch to help identify journal editors who support reproducible open practices.



Editors4BetterResearch initiative

Editors4BetterResearch initiative 1. Purpose: The aim of this initiative is to create a public database of journal editors who commit to valuing and upholding open a...

docs.google.com

If I were starting my PhD today

- Vote with my money
- Select a supportive supervisor
- Make my research transparent and open
- Select undergrads fairly
- Select editors who support open practices

Any questions / comments so far?

Next up...

- Four discussion topics based on things that actually happened to me



What would you do if...

1. Clarivate Analytics just bought Publons where you have all of your reviewer data?
2. You reviewed a factually incorrect paper and it was published without changes?
3. A co-author wants to add a co-author who doesn't deserve authorship?
4. Asked to renew your society membership, but their journal is at Elsevier and doesn't support open practices?



Clarivate bought Publons in 2017

Clarivate Analytics owns

- Impact factor
- Web of Science
- ScholarOne
- EndNote



Dieter Lukas

@DieterLukas

Following

First, unclear whether I as individual should contribute publicly funded time and information for third party Publons to make money (4/8)

10:43 AM - 7 Jun 2017

“The acquisition ... might mean that Clarivate and Publons will sell science funders and publishers ‘new ways of locating peer reviewers, finding, screening and contacting them’”¹

- Jessica Turner, Clarivate global head of scientific and academic research

¹[nature.com/news/web-of-science-owner-buys-up-booming-peer-review-platform-1.22094](https://www.nature.com/news/web-of-science-owner-buys-up-booming-peer-review-platform-1.22094)
clarivate.com/essays/impact-factor/, twitter.com/DieterLukas/status/872509447997972480

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My closed peer review horror story

- I reviewed a paper, raised many issues, some insurmountable
- Decision = **Major Revision**
- Not cc'ed on further decisions, **no re-review**
- Asked to publish a response to accepted article. **Accepted version didn't address comments**; many factual errors
- Executive editor + handling editor + president of society **refused to acknowledge they accepted the paper without proper revision and didn't seem to care it was low quality / incorrect**
- I am mentioned in Acknowledgements

I control where I donate my reviewer/editor time

Reviewing Ethics

If I am invited to review a paper for a journal and/or publisher that is not aligned with my commitment to conducting rigorous science, I accept the review, write the below text in the Comments to the Authors section, and submit the review. I got this idea from the [Peer Reviewers' Openness Initiative](#) and modified it to suit my particular ethics.

- - -

My goal is to ethically conduct and promote rigorous science. I avoid exploiting myself as a scientist, I facilitate equality and diversity by ensuring that no one is discriminated against when reading scientific literature I contribute to, and I keep funds in academia (see my [presentation](#) for background). I use the mechanism of transparency to achieve my goal so anyone can evaluate my contributions at every step of the process.

Therefore, I am only willing to review papers that:

- 1) are going to be published gold open access under a CC-BY license,
- 2) will publish the review history alongside the paper (when it is an option),
- 3) are submitted to a journal where 100% of the articles are open access, and
- 4) are submitted to a journal that is published by an academic non-profit organization, or a for-profit corporation that a) has low or no article processing charges, and/or b) heavily invests profits in academia.

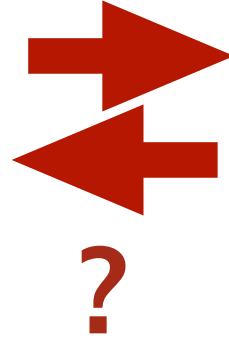
I am not willing to review this paper at this journal because criteria 1 and 3 are not met.

Sincerely,
Corina Logan

<http://www.corinalogan.com/ethics.html>

Post-study peer review: a confound

Poor quality **peer review**
& **editorial** decisions

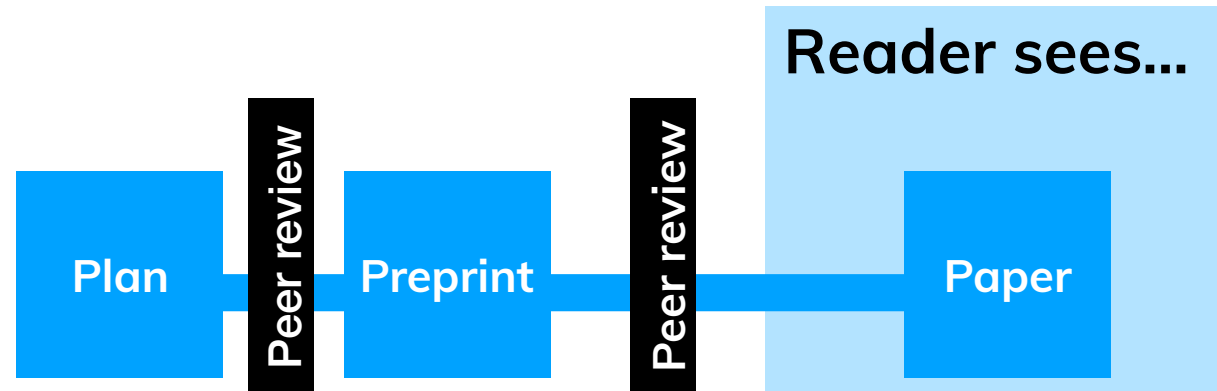


Poor quality of
(published) **research**

- Post-study reviewers/editors can't control study quality
- High quality peer reviews can't retrospectively fix a broken study

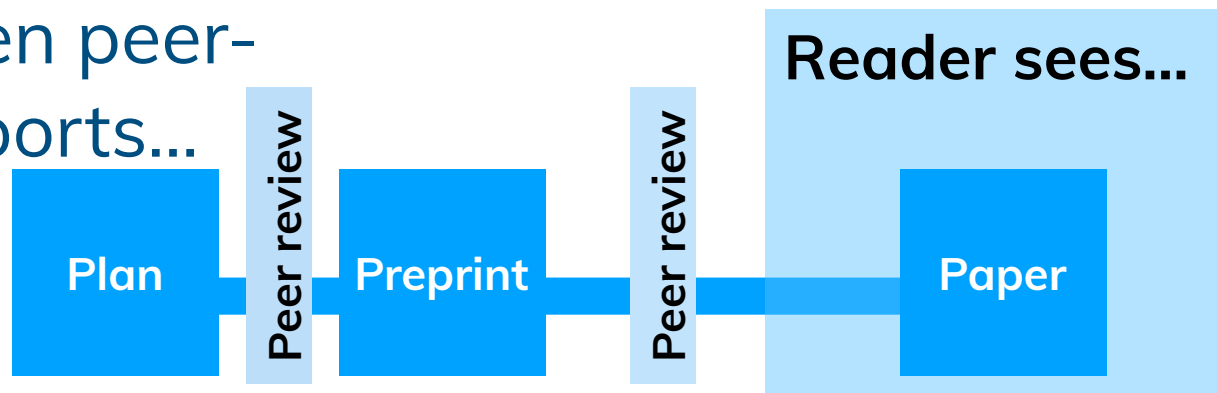
➔ Pre-data collection review

Closed peer-reviewed
Registered Reports...

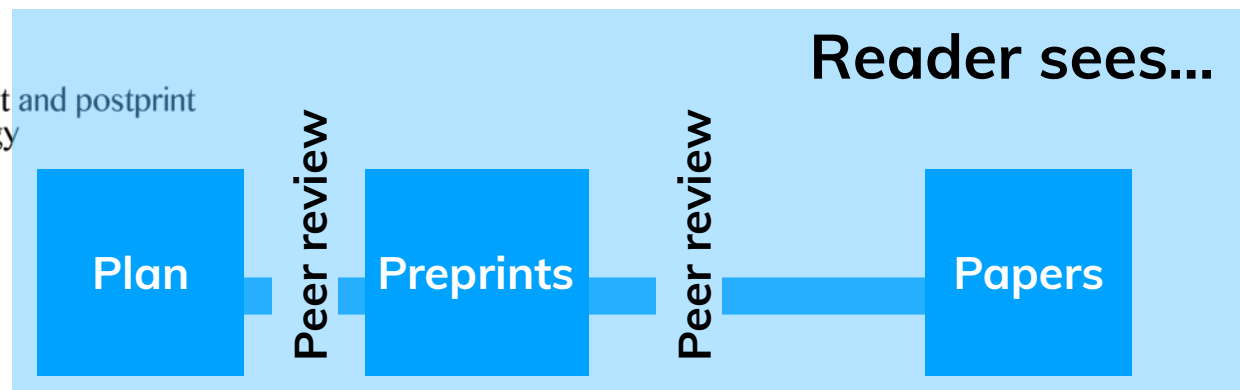


Eventually optionally open peer-
reviewed Registered Reports...

ROYAL SOCIETY
OPEN SCIENCE



Openly peer-reviewed preregistrations...



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4. Asked to renew your society membership, but their journal is at Elsevier and doesn't support open practices?



Earning co-authorship

2. *Who Is an Author?*

The ICMJE recommends that authorship be based on the following 4 criteria:

- Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND
- Drafting the work or revising it critically for important intellectual content; AND
- Final approval of the version to be published; AND
- Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Standards set by the International Committee of Medical Journal Editors

<http://www.icmje.org/recommendations/browse/roles-and-responsibilities/defining-the-role-of-authors-and-contributors.html#two>

Earning co-authorship

H. AUTHOR CONTRIBUTIONS

Logan: Hypothesis development, data collection, data analysis and interpretation, write up, revising/editing, materials/funding.

Rowney: Data collection, data interpretation, revising/editing.

Bergeron: Data collection, data interpretation, revising/editing.

Seitz: Prediction revision, programmed the reversal learning touch screen experiment, data interpretation, revising/editing.

Blaisdell: Prediction revision, assisted with programming the reversal learning touch screen experiment, data interpretation, revising/editing.

Johnson-Ulrich: Prediction revision, programming, data collection, data interpretation, revising/editing.

McCune: Data collection, data interpretation, revising/editing.

https://github.com/corinalogan/grackles/blob/master/EasyToReadFiles/g_flexmanip.md

What would you do if...

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Society membership

Don't see your favorite society journal on this list?

Ask them to switch their journal to 100% open access and an ethical publisher. Below is a draft of an email I sent in May 2017 to the Cambridge Philosophical Society, which owns the journal *Biological Reviews*. Feel free to use it as a template to write to your societies.

- - -

Dear [fill in the blank],

I am writing because you are the Editor in Chief [or Council Member] of the [insert society name], which publishes [insert journal name]. I have been a member of the [insert society name] since 2008 and I want [insert journal name] to change from their current exploitative publisher ([insert publisher name]) to an ethical publishing business model, which will stop exploiting the researchers that give away their products for free (Logan 2017 <https://f1000research.com/articles/6-518/v2>).

The publishing landscape is changing rapidly and there are many options for scientific societies to consider when changing their journal to ethical publishing practices. The cheapest way to run a 100% open access journal is to use free, open source software such as Open Journal Systems (<https://pkp.sfu.ca/ojs/>) or eLife Continuum (<https://elifesciences.org/elife-news/materials-publishers-elife-continuum>) that overlays a preprint server such as <http://www.biorxiv.org>. An author would submit a preprint to bioRxiv and then submit this preprint to the journal, which would use the free software to engage in the editorial and peer review process. If the paper passes peer review, it would be published by having the authors upload the revised version to bioRxiv and the journal would update their website to link to the revised version. Using this process, it costs \$0 to publish a 100% open access paper.

Here are two case studies of journals that overlay arXiv using Scholastica (they charge \$10/article, <https://scholasticahq.com>) software:

- 1) Discrete Analysis (born digital, based out of the University of Cambridge) <https://gowers.wordpress.com/2015/09/10/discrete-analysis-an-arxiv-overlay-journal/>
- 2) Internet Mathematics (changed from a big publisher) <http://blog.scholasticahq.com/post/internet-mathematics-publishing-solo-using-scholastica/>

Additionally, The ReScience Journal (<https://rescience.github.io>) is hosted at GitHub. The editorial process is managed manually and they only accept reproducible manuscripts, which can be exported to a number of formats, including LaTeX, which gives the final PDF an elegant look with no additional copyediting effort.

If these methods do not appeal, one can use an ethical open access publisher such as Copernicus Publications (<http://publications.copernicus.org>) or Ubiquity Press (<http://www.ubiquitypress.com>) who charge a per page flat fee that covers their processing costs. Article processing charges are incurred in this route, but grants can be obtained to offset costs rather than charging authors.

I realise that many scientific societies rely on income from the publishers of their subscription-based journals; however, this business model is not sustainable in the long-term because universities and researchers are tired of paying outrageous fees to read their own research products. I have been talking with senior people at a variety of scientific societies and have learned that some are in the process of changing their business models to make money off of ventures that are not related to the publication of articles. For example, the [Association of Field Ornithologists](#) makes much more money off of the [company](#) they recently purchased (that sells bird banding materials) than their *Journal of Field Ornithology* (published by Wiley).

If you would like to discuss any of this, please feel free to contact me.

All my best,
Corina

<http://corinalogan.com/journals.html>

Incentive structure at odds with research rigor?

No, it's not The Incentives—it's you

There's a narrative I find kind of troubling, but that unfortunately seems to be growing more common in science. The core idea is that the mere existence of perverse incentives is a valid and sufficient reason to knowingly behave in an antisocial way, just as long as one first acknowledges the existence of those perverse incentives. The way this dynamic usually unfolds is that someone points out some fairly serious problem with the way many scientists behave—say, our collective propensity to p-hack as if it's going out of style, or the fact that we insist on submitting our manuscripts to publishers that are actively trying to undermine our interests—and then someone else will say, “I know, right—but what are you going to do, those are the *incentives*.”



Tal Yarkoni

I have benefitted and made changes...

1. I got my dream job!
2. CCBR and Phil Biol changed to CC-BY 4.0
3. Cambridge is now signing DORA
4. Got a director to ask the MPI President to sign DORA
5. Implemented peer review of preregistrations at PCI Ecology
6. Launched Editors4BetterResearch
7. Lots of press - people want to learn!
8. This is not a “side project” - it makes my science better!

We won't be...



Corina Logan & Laurent Gatto



Leading individuals and
institutions in adopting open
practices to improve research rigor

ECRs often feel **pressured** into taking actions
against our **ethics** to pursue an academic career
(e.g., publishing in particular journals)

ECRs:

Sign the **petition** to help us change academic culture

http://bulliedintobadscience.org/#ecrs:_sign_the_letter

Twitter: #BulliedIntoBadScience | Slides CC-BY-SA 4.0 at osf.io/8hdk6/