

THE GRACKLE PROJECT



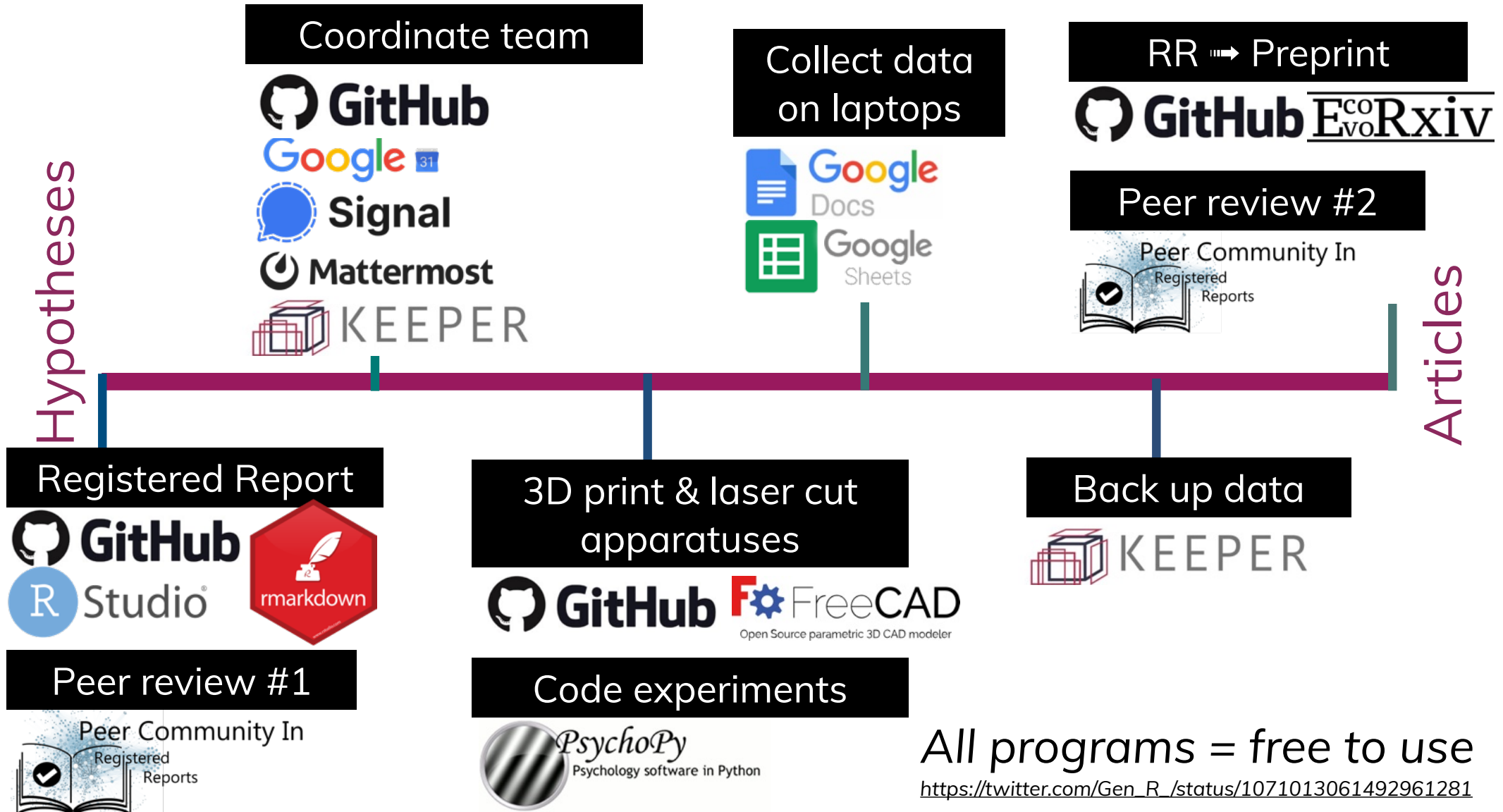
Corina Logan
www.CorinaLogan.com
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The making of a
transparent lab...



These are the programs and processes I use to

1. Make research more scientifically rigorous (via registered reports at PCI Registered Reports)
2. Make research reproducible (within my group and by other groups)
3. Streamline team communication
4. Facilitate complicated conversations about the logistics of running field sites



Making registered reports flexible and providing an ethical publishing pathway



Launched in April 2021 by co-founders: Emily Sena, Chris Chambers, Corina Logan, Zoltan Dienes, Benoit Pujol

100% open access, **free** for readers and authors

Select based on research validity and not subjective impact

Reducing overall reviewer and editor time investment by offering In Principle Acceptance before the study is conducted and 35+ PCI RR-friendly journals

Researcher-run non-profit, therefore we can implement innovations

<https://rr.peercommunityin.org> Mastodon: @pcirr@spore.social
Ethical publishing: <http://corinalogan.com/journals.html>

10 innovations (so far!) for scholarly publishing

Registered report (RR) vs traditional article comparison	Regular non-RR article at a traditional journal	RR at a traditional journal	RR at PCI RR
Offers pre-study peer review	✗	✓	✓
Offers in-principle acceptance before results are known	✗	✓	✓
→ Offers programmatic RRs : one Stage 1 RR leading to multiple Stage 2 manuscripts	✗	✗	✓
→ Offers scheduled review to accelerate the Stage 1 review process	✗	✗	✓
→ Requires handling editor (or recommender) to have proven their knowledge of RRs by passing an entrance test, which serves as useful training of a rarely taught skill	✗	✗	✓
→ Peer review undertaken independently of any journal	✗	✗	✓
Author has the power to decide their destination journal (if any)	✗	Very rare	✓
No need for author to decide on destination journal until after Stage 2 acceptance by PCI RR	✗	Very rare	✓
*Peer reviews for accepted manuscripts published online and free to read	✗	Very rare	✓
Free for authors and readers	Depends on journal	Very rare	✓

**protects reviewers, recommenders, and authors from confidential peer review; holds recommenders and PCI RR accountable for decisions; provides peer review data for meta-research*

→ **Authors can CHOOSE** whether reviewers must sign reviews or if it's optional depending on their goal for final article (some journals only accept signed reviews)

→ Explicitly state & address the **level of bias** in your RR with the TAXONOMY OF BIAS CONTROL

<https://rr.peercommunityin.org> Mastodon: @pcirr@spore.social

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



The screenshot shows the RStudio interface with a registered report document open. The Knit menu is open, showing options like 'Knit to HTML', 'Knit to PDF', 'Knit to Word', 'Knit with Parameters...', and 'Clear Knitr Cache...'. The document content includes a section on data checking and an analysis plan.

g_causal.Rmd x **g_expansion.Rmd** x

186
187 `##` Knit to HTML
188 `##` Knit to PDF
189 `##` Knit to Word
190 `##` Knit with Parameters...
191 `##` Clear Knitr Cache...
192
193 `##` any data. When **missing data** occur, the existing
194 `##` data will be included in the analyses for the tests they
195 `##` conducted in R (current version `getRversion()`;
196 `##` data for females and males separately because each sex
197 `##` has a distinct natural history (@johnson2001great).

190
191 `#### Data checking`
192
193 The data will be visually checked to determine whether they are normally distributed
194 via two methods: 1) normality is indicated when the histograms of actual data match
195 those with simulated data (Figure 2), and 2) normality is indicated when the
196 residuals closely fit the dotted line in the Normal Q-Q plot (Figure 3) [Zuur2009].
197
198 `{r dist_checkHistQQ, eval=FALSE, warning=FALSE, results='asis', echo=TRUE,`
199 `fig.cap="**Figure 2.** Part 1. The distribution of the actual data versus what a`
200 `normal distribution would look like with simulated data. Part 2. Residuals vs fitted:`
201 `checking for homogeneity, which is satisfied if residuals have an even spread across`
202 `the x-axis; Normal Q-Q: residuals are normally distributed if they are on the`
203 `diagonal line; Residuals vs leverage: Cook's distance <1 means no influential`
204 `observations [Zuur2009]."}
205
206 edge <- read.csv ("Users/corina/GTGR/data/data_pop.csv", header=T, sep="," ,
207 stringsAsFactors=F)
208
209 1:1 How and why does behavioral flexibility vary across the range of a rapidly expanding species? R Markdown`

Environment **History** **Git**

Diff Commit Pull Push History More

Your branch is ahead of 'origin/master' by 9 commits.

Staged	Status	Path
		GTGR.Rproj
		coding/

Files **Plots** **Packages** **Help** **Viewer**

Publish

E. ANALYSIS PLAN

We do not plan to **exclude** any data. When **missing data** occur, the existing data for that individual will be included in the analyses for the tests they completed. Analyses will be conducted in R (current version 3.3.3; R Core Team (2017)). We will analyze data for females and males separately because each sex has a distinct natural history (Johnson and Peer (2001)).

Data checking

The data will be visually checked to determine whether they are normally distributed via two methods: 1) normality is indicated when the histograms of actual data match those with simulated data (Figure 2), and 2) normality is indicated when the residuals closely fit the dotted line in the Normal Q-Q plot (Figure 3) (Zuur, Ieno, and Saveliev 2009).

```
edge <- read.csv("/Users/corina/GTGR/data/data_pop.csv", header = T,
  sep = ",", stringsAsFactors = F)

# Separate the sexes
fem <- edge[edge$Sex == "f", ]
mal <- edge[edge$Sex == "m", ]

# Check the dependent variables for normality: Histograms
# females
op <- par(mfrow = c(4, 4), mar = c(4, 4, 2, 0.2))
# This is what the distribution of actual data looks like
hist(fem$TrialsToReverseLast, xlab = "Flexibility: Trials to reverse",
  main = "Actual Data")
hist(fem$FlexRatio, xlab = "Flexibility: Ratio correct", main = "Actual Data")
hist(fem$NumberHumanFoodsEaten, xlab = "% human foods eaten",
  main = "Actual Data")
hist(fem$AvgTarsusLength, xlab = "Condition: Avg tarsus length",
```

Console **R Markdown** x

~/GTGR/

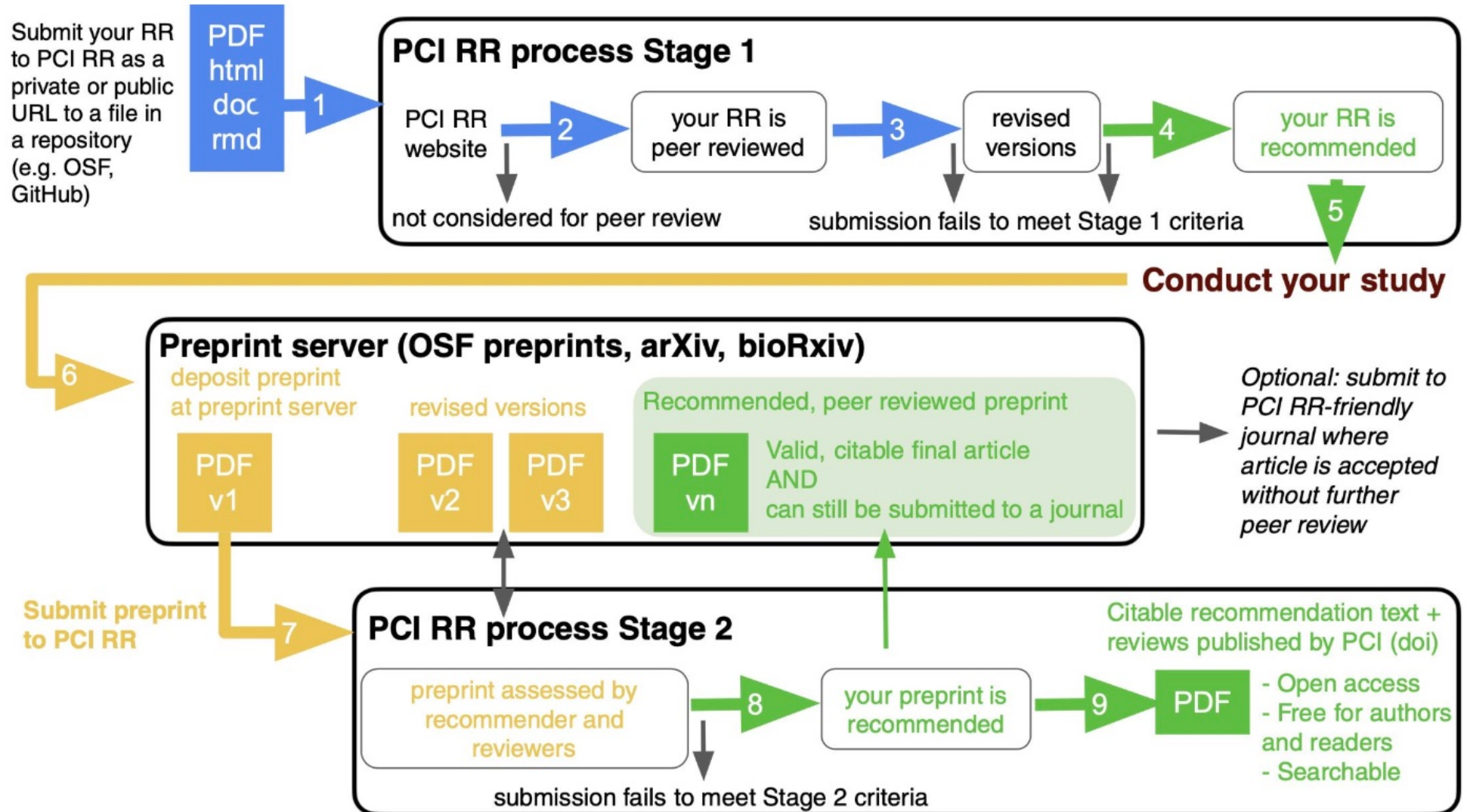
R is a collaborative project with many contributors.
Type 'contributors()' for more information and
'citation()' on how to cite R or R packages in publications.

Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

[Workspace loaded from ~/GTGR/.RData]

> |

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





Coordinate team



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

Grackle Project Admin

Wikis (aka how to do everything on the project)

- [Onboarding](#)
- [Offboarding](#)
- [Ordering and shipping](#)
- [Protocols and data sheets](#)
- [Permits and reports](#)
- [Undergrads](#)
- [Central American field site](#)
- [Scouting Woodland](#)
- [Scouting Archbold](#)
- [List of grackle articles](#) from our lab and from others

To do list (Projects > To do list)

- To add card: Issues > New Issue, then Projects > To do list > Add cards
- To add note: Projects > To do list, choose the column you want to add the note to and click the + in the top right corner of the column

Resources for what to include in lab materials

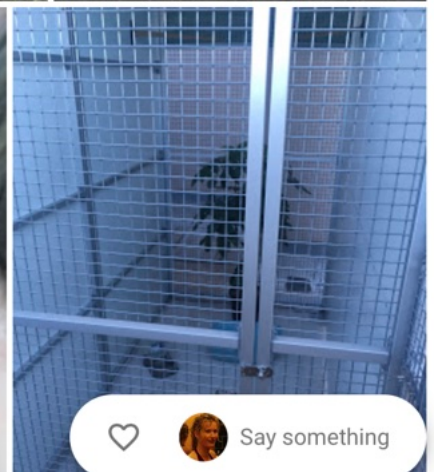
- Read the Openscapes blogs for ideas <https://www.openscapes.org/blog/2019/06/06/case-study-pinsky-lab/>
- And all of the other Champions blogs... <https://www.openscapes.org/blog/2019/06/11/case-study-froehlich-lab/>

ASU Grackles

Jan 5–Jun 19



Share photos for social media & presentations



<https://photos.google.com>

All banding, marking, and sampling is being conducted under a federally authorized Bird Banding Permit issued by the U.S. Geological Survey's BBL

Plan research around student hours, weather, meetings, trips

TODAY < > March 2018



Month



Mon 26	Tue 27	Wed 28	Thu Mar 1	Fri 2	Sat 3
Luisa off 6pm Aelin 10am-12pm 6pm MU trap habituation-- 7pm Sofija 9pm Chompies trap habitu	6pm MU trap habituation-- 8pm Chompies trapping--l	5pm (9a MT / 4p GMT) Gr 6pm MU trap habituation-- 7pm Sofija 8pm Chompies trapping--l	6pm MU trap habituation-- 6:30pm Sofija 7pm E Athletic field trap h 8pm Chompies trapping--l	6pm MU trap habituation-- 7pm E Athletic field trap h 9pm Chompies trap habitu	Zoe Testing 10am-4pm
5	6	7	8	9	10
Zoe Off 9pm Carol away - March 5-10 8pm Sofija 9pm Chompies trap habitu	Zoe Meet with Maria for Blc 6pm Sofija 6pm MU trap habituation-- 9pm Chompies trap habitu	5pm (9a MT / 4p GMT) Gr 6pm Aelin 10am-12pm 6pm MU trap habituation-- 2 more	6pm MU trap habituation-- 9pm Chompies trap habitu	6pm MU trap habituation-- 7pm E Athletic field trap h 9pm Chompies trap habitu	Luisa Testing 10am-4pm
12	13	14	15	16	17
AAALAC Site Visit 1:45-3:30 Luisa Off 7pm Sofija 9pm Chompies trap habitu	6:30pm E Athletic Field tra 8:30pm Chompies trap ha	5pm (9a MT / 4p GMT) Gr 6pm E Athletic Field trapp 6pm Aelin 10am-12pm 7pm Sofija 8:30pm Chompies trap ha	6pm E Athletic Field trap h 7pm Sofija 8pm Chompies trapping--l	6:30pm E Athletic field tra 8pm Sofija 8:30pm Chompies trap ha	Zoe Testing
19	20	21	22	23	24
Zoe Off 7pm Sofija 7pm E Athletic field trap h 9pm Chompies trap habitu	6pm E Athletic Field trap h 7pm MU trap habituation-- 8pm Chompies trapping--l	5pm (9a MT / 4p GMT) Gr 6pm E Athletic field trap h 7pm Sofija 8pm Chompies trapping--l	6pm Aelin 10am-12pm 6pm Aviary testing--Aelin 7pm E Athletic field trap h 9pm Chompies trap habitu	IACUC Aviary Inspection (1 6pm Sofija 6pm MU trap habituation-- 7pm E Athletic field trap h 9pm Chompies trap habitu	Carol Testing

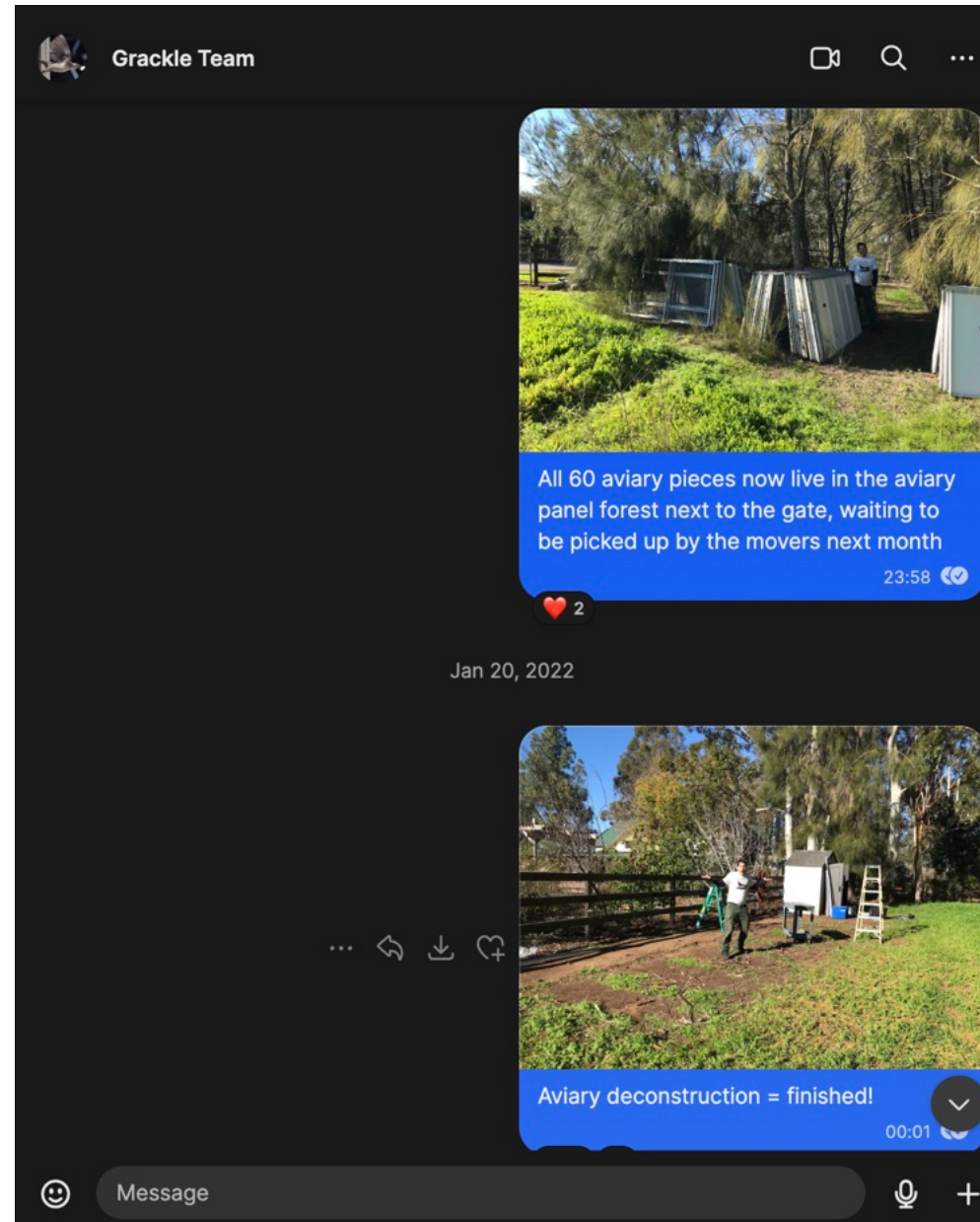


Field coordination



Signal

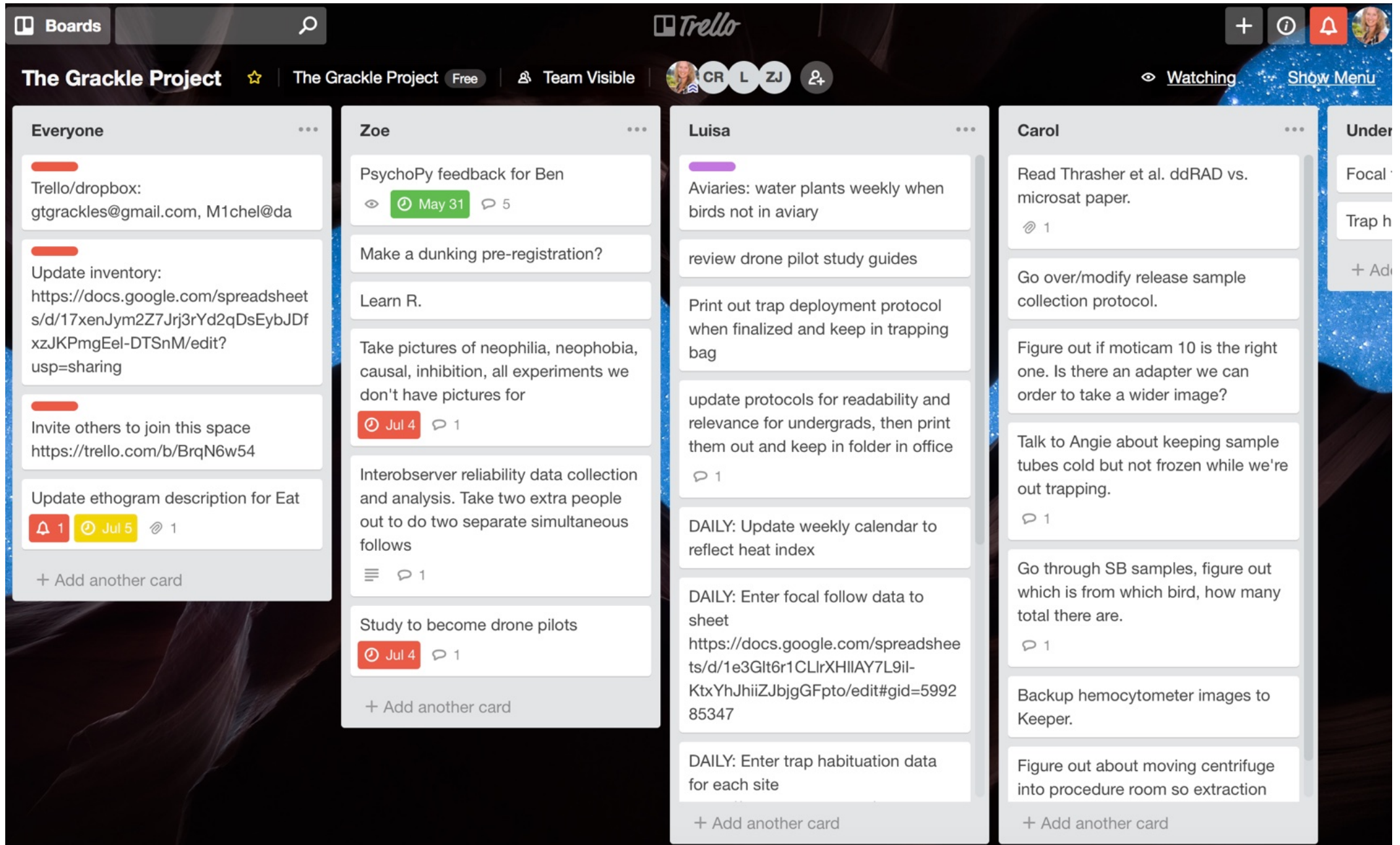
Where should I meet you right now? Share potential new sites (map), photos, live location





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

Under

- Focal
- Trap h
- + Add

<https://trello.com>

interfaces with  slack



Coordinate team
Mattermost

Organize conversations, de-clutter email

The screenshot displays the Mattermost web interface. On the left sidebar, under the 'GrackleProject' header, there are sections for 'FAVORITES' (including 'FieldSchedule&CheckIn') and 'CHANNELS' (including 'CornellTrip', 'Off-Topic', 'Town Square', and 'VideoCoding'). The main channel view is for 'CornellTrip', which has 3 members and 3 stars. A pinned message from Corina at 09:49 is visible, detailing a project involving ddRADseq and grackles. The message includes a list of tasks for Day 3 and Day 4, and a paragraph about student travel and lab work.

Channels

GrackleProject ▾

Find channel

Threads

FAVORITES

FieldSchedule&CheckIn

CHANNELS

CornellTrip

Off-Topic

Town Square

VideoCoding

Add Channels

Search

CornellTrip ▾ 3 3 Channel has guests

Start call

- Day3: PCR, cleanup and submit samples to core facility for QC

Wait: Again we wait for QC results from core facility.

- Day4: pool samples and submit library for sequencing

The students could come to Ithaca for 2-3 days and then head back to Rochester to wait for the size selection step to be completed and then come down to Ithaca again for 2 days to do days 3 and 4. Day 4 is VERY short and I could even do that so that for them if we weren't able to get QC results quickly. *Edited*

★ Pinned

Corina 09:49

The project: learn ddRADseq with Bronwyn Butcher in Irby Lovette's lab at the Lab of Ornithology at Cornell this summer. A collaborator at Washington State University (Aaron Blackwell) has the samples and will extract the DNA and send them to Cornell where the students will work with Bronwyn to learn how to do the lab work.

- Great-tailed grackles* - We have blood samples from 72 great-tailed grackles from AZ and CA, and we are writing an article on dispersal differences across populations (see [Q2 in this registered report](#)). We will follow the exact protocol as we did for the grackle samples from the AZ population in 2021 (see [Methods](#)). For the 2021 project, it was a senior thesis for Gus Sevchik, which was supervised by



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>

1. 5s: peck to start 2a. 30s: peck a color 3. 2s: intertrial interval





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

Date													
	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	criterion: successfully obtain the f	
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/>



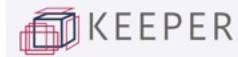
Collect observational data on
cell phones using a voice
recorder app

Transcribe into Google Sheet





Back up data KEEPER



Search files in this library



Files

My Libraries

- Shared with me
- Shared with groups

Tools

- Favorites
- Activities
- Linked Devices

Share Admin

- Libraries
- Folders
- Links

My Libraries / My Library / Grackle data / Nest checks / 14-June-2018

Upload

New

Share



☐	Name ▲	Size	Last Update
☐ ☆ 	AN022_007.png	2.0 MB	4 days ago
☐ ☆ 	GOPR0062 AN016_002.MP4	150.8 MB	4 days ago
☐ ☆ 	GOPR0063 AN021_002.MP4	212.5 MB	4 days ago
☐ ☆ 	GOPR0064 AN021_003 AN022_001.MP4	75.2 MB	4 days ago
☐ ☆ 	GOPR0065 AN021_004.MP4	92.5 MB	4 days ago
☐ ☆ 	GOPR0066 AN021_005.MP4	61.6 MB	4 days ago
☐ ☆ 	GOPR0067 AN021_006 AN022_002.MP4	119.2 MB	4 days ago
☐ ☆ 	GOPR0068 AN022_003.MP4	201.4 MB	4 days ago
☐ ☆ 	GOPR0069 AN023_002.MP4	75.0 MB	4 days ago

Off-site back up, secure, access it from anywhere,
team members can upload data as it is generated

<https://keeper.mpdl.mpg.de> (if not at Max Planck: OSF or Dropbox)

