Meeting minutes from the Biology Postdoc Cohort at Emory

Matthew Malishev[1]* & Molly Gallagher[1]
[1] *Department of Biology, Emory University, 1510 Clifton Road NE, Atlanta, GA, USA, 30322*

Contents

Date: 2019-02-10
R version: 3.5.0
*Corresponding author: matthew.malishev@emory.edu
This document can be found at https://github.com/darwinanddavis/emory_postdocs

Session info

```
R version 3.5.0 (2018-04-23)
Platform: x86_64-apple-darwin15.6.0 (64-bit)
Running under: OS X El Capitan 10.11.6

Matrix products: default
BLAS: /Library/Frameworks/R.framework/Versions/3.5/Resources/lib/libRblas.0.dylib
LAPACK: /Library/Frameworks/R.framework/Versions/3.5/Resources/lib/libRlapack.dylib

locale:
[1] en_US.UTF-8/en_US.UTF-8/en_US.UTF-8/C/en_US.UTF-8/en_US.UTF-8

attached base packages:
[1] stats     graphics  grDevices utils     datasets  methods   base

loaded via a namespace (and not attached):
 [1] compiler_3.5.0  backports_1.1.2 magrittr_1.5    rprojroot_1.3-2 tools_3.5.0     htmltools_0.3.6
 [7] pillar_1.2.3    tibble_1.4.2    yaml_2.2.0      Rcpp_0.12.19    stringi_1.2.3   rmarkdown_1.10
[13] knitr_1.20      stringr_1.3.1   digest_0.6.15   rlang_0.3.0.1   evaluate_0.10.1
```

Overview

This document contains the meeting minutes from the Biology Postdoc Cohort at Emory.

The group hosts regular meetups to learn about what the postdocs in Biology at Emory are doing, harness cool research skills and tools that everyone uses, foster research overlaps, brainstorm and troubleshoot ideas, discuss weird results that nobody knows the answer to, practise upcoming seminars, and simply build a stronger postdoc culture in Biology at Emory.

Questions and suggestions welcome at matthew.malishev@emory.edu.

TO DO list

- Add attending postdocs to OPE Emory list (Beverly)
- Come up with a cooler name for the group
- Other things
- Aim for a collaborative paper

Next meetup: **March 1, 2019**

February 8, 2019

In this meeting we created our own research impact statements to practice distilling our specialised research areas into lay terms.

The general recipe to follow:
- What you did
- Who was helped
- In what way are they better off
(different people have different perspectives on importance of the order of these points)

Molly Gallagher
Our models show that for viral infections, treating patients with defective viral particles that interfere with normal viral replication can reduce the severity of symptoms, and may reduce the chance of transmitting the infection to others.

Matt Malishev
I'm interested in how diseases spread in nature. I investigate how environmental change influences energetics of parasite populations transmitting schistosomiasis. I apply metabolic theory to simulate human infection probability and exposure risk in space and time to inform useful biocontrol strategies.

Rohan Mehta
I develop new theoretical tools to help biologists study how the distribution and movement of populations affects their ability to adapt to environments that vary in space.

Lewis Bartlett
I study how different beekeeping practices affect the ways bee diseases spread and how deadly they become. I use laboratory studies, field tests, computer simulations, and maths to predict and test which actions beekeepers should take to prevent infectious diseases.

Scott Villa
My research focuses on understanding how and why there are so many different species. I am interested in how natural selection influences traits critical for mating. Specifically, I experimentally evolve parasites on new hosts to explore how new species form under varying environmental, genetic, and demographic scenarios.

Laramie Lemon
I use yeast to investigate how genes are activated. I focus on how the physical structure of DNA affects the ways it's read, copied, and translated to produce proteins by different mechanisms.

Some resources on science communication.

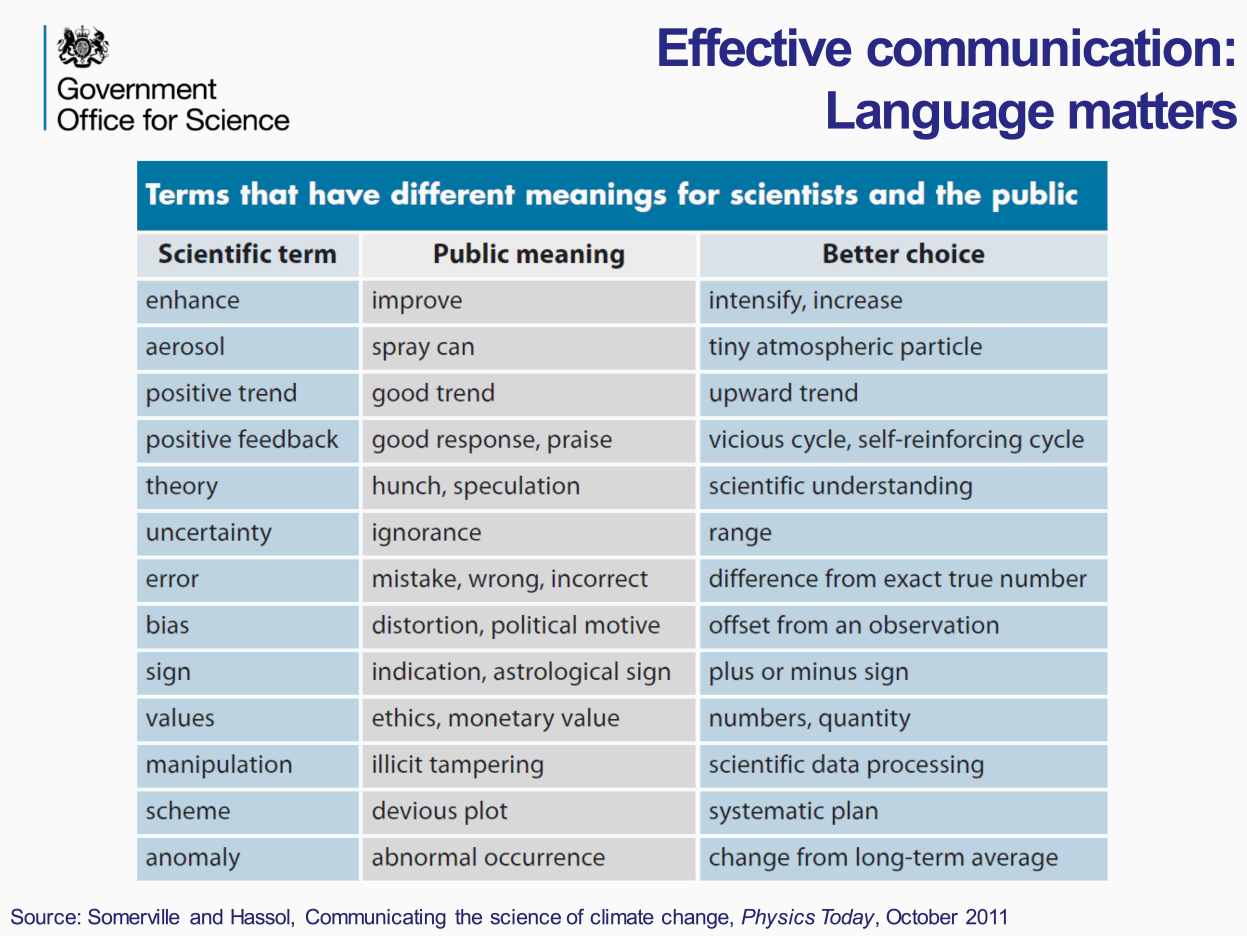

Figure 1: Language matters

January 11, 2019

IMPACT statement workshop
- Come up with a Impact Statment (3 line summary of your research) for next meeting.

XKCD inspired page for communicating your ideas using just the ten hundred most commonly-used words: The Up-Goer Five Text Editor

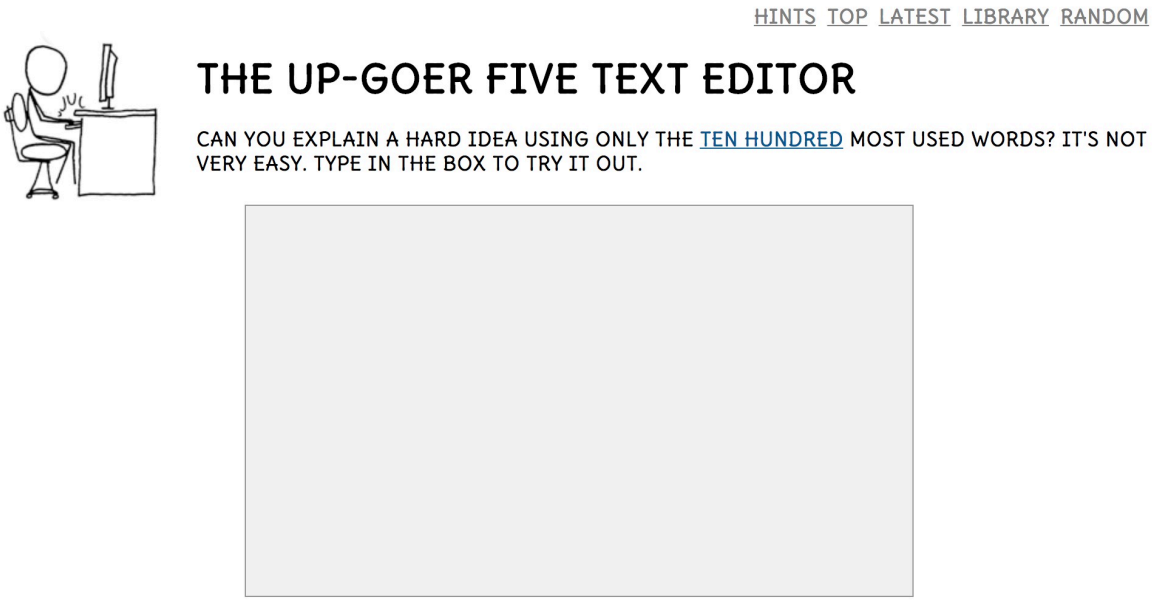

Figure 2: Check out this page for a practical way of communicating your super complex research: The Up-Goer Five Text Editor

Some writing guides from the masses

The Elements of Style by Strunk and White

Revising Prose by Richard Lanham

Idead into Words by Elise Hancock **Matt's personal favourite**

December 14, 2018

Biosketch of postdocs

Matt Malishev
Civitello lab
Bioenergetics and individual-based modelling of host-parasite dynamics of human schistosome populations; spatial simulation modelling; metabolic theory

Molly Gallagher
Koelle lab
Disease ecology; differential equation models; current work focuses on modeling defective interfering particles in influenza

Aileen Berasategui Lopez
Gerardo lab
The genomic and chemical basis of host-fidelity

Caitlin Conn
Gerardo lab
Host range and its genetic basis in a mycoparasite

Jeremy Harris
Koelle lab
Current IAV modeling: Passage study modeling, estimating bottleneck sizes

Mary Bushman
Rustom lab
Linking within- and between-host dynamics of infectious diseases (modeling)

David Nicholson
Prinz lab
"Lifelong Learning Machines" – continual machine learning algorithms

Julien Catanese
Jaeger lab

Derrick Morton
Corbett lab
Studying how defects in RNA processing lead to neurodegenerative disesase

Scott Villa
Gerardo lab
Role of endysymbionts in driving host reproductive isolation and adaptive radiation

Rohan Mehta
Weissman Lab
Evolution in spatially-structured populations

Workshop ideas

IMPACT workshop
- Impact of science + advancement in research
Contact: Derrick

November 30, 2018

Outcomes for postdoc group

Meetings every second and fourth week

Talk therapy among working class postdocs

Intro talks from postdocs to group

- Lightning, 2-min talk for group
- New postdocs give a brief intro talk for their first meeting

Postdoc mentorship group for assisting grad students during qualifying exams

- Online directory of postdocs showcasing background and expertise. Include non-science background stuff, such as applying for international universities.
  The journal peer review system and open access science
- Using *bioarXiv* and pre-prints
- Open access science
- Writing a paper on the science peer review system from postdoc perspective

November 1, 2018

Ideas for things people want

Collaborate on overlapping research
Brainstorm ideas
Present new results
Practise conference talks
Writing retreats
Regular coding/math club

Bigger ideas

Combine other labs/departments
- other biology floor levels
- math/env sciences

Links and ideas