

Open Access Opportunities for Credit, Tenure, and Promotion

OA Week @ Claremont

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Associate Professor
School of Aquatic and Fishery Sciences
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Things I think about.

Open Access Week

- You are free to Share!

These slides plus links etc @
github.com/sr320/talk-CC-OA-2015

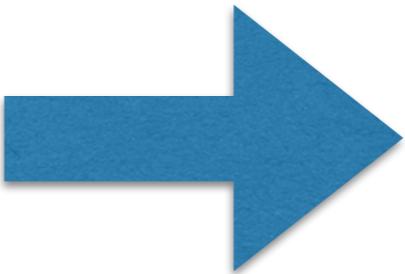
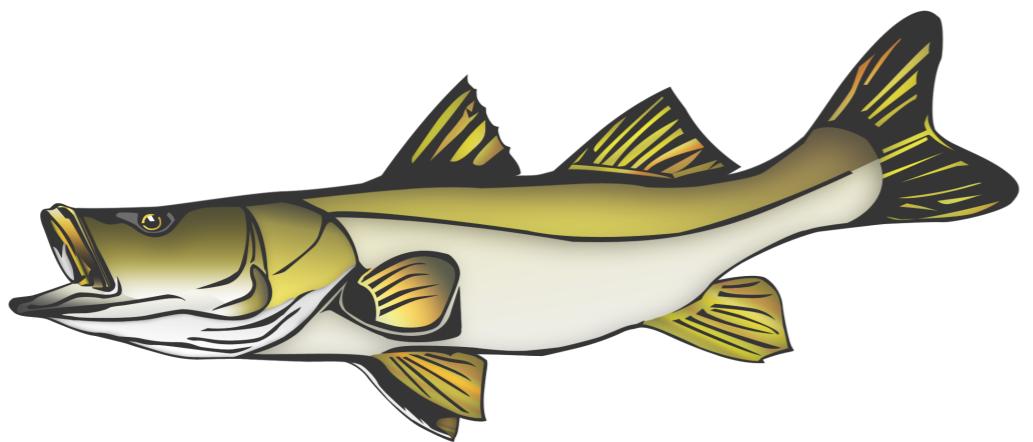
Outline

- Context
- **What** is Open and Online
- **Why** Open and Online
- Credit

Context

Physiology

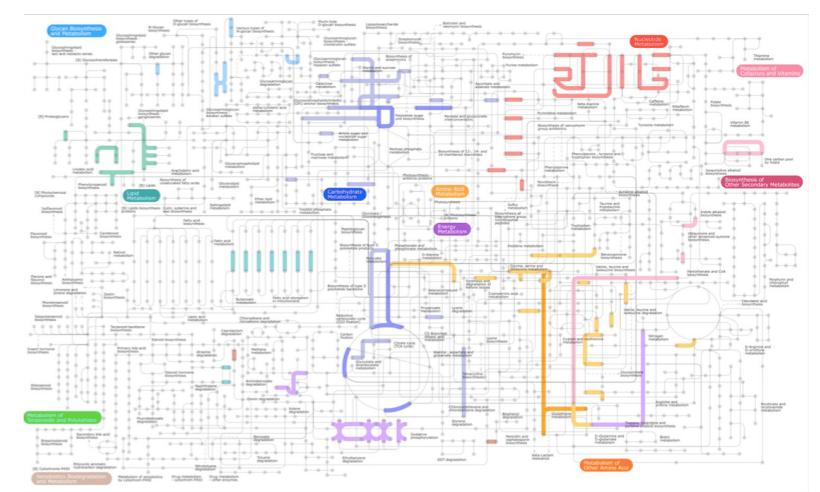
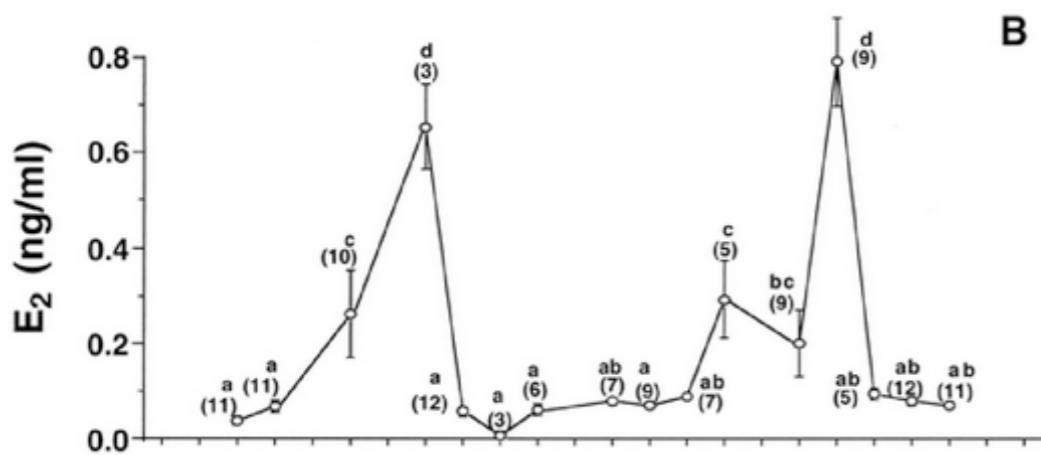
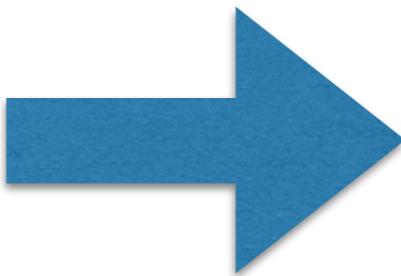
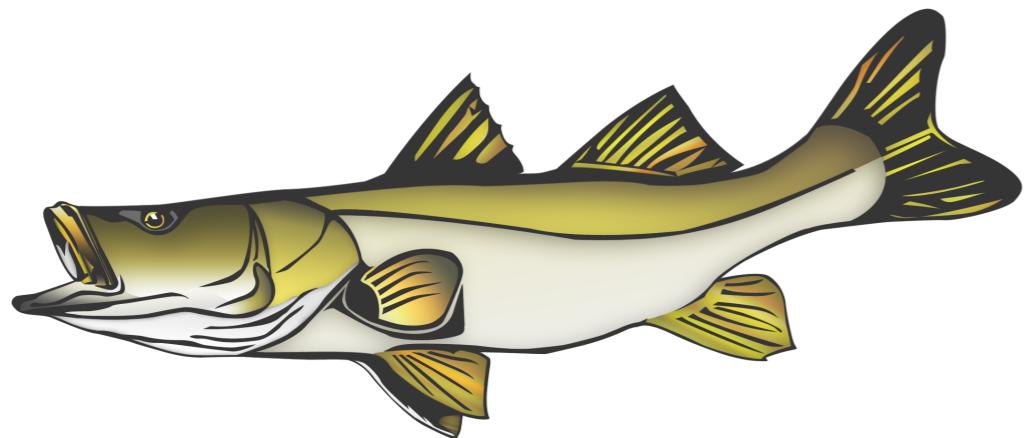
How fundamental processes work in aquatic species



Context

Physiology

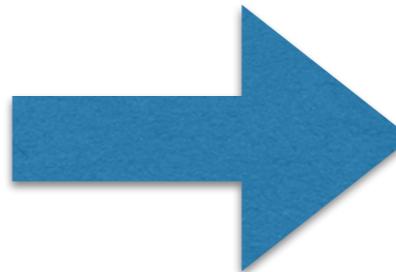
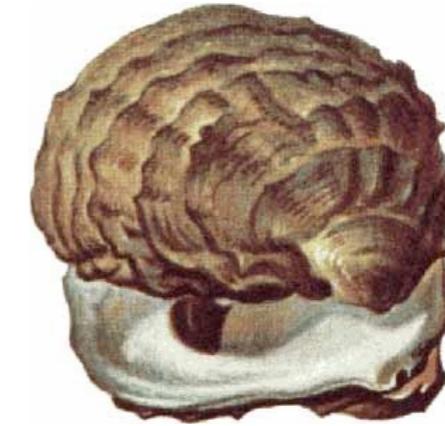
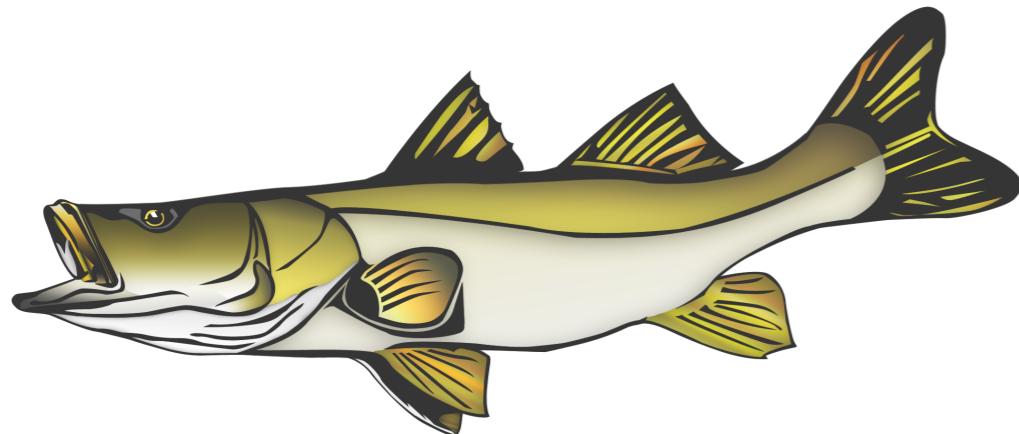
How fundamental processes work in aquatic species



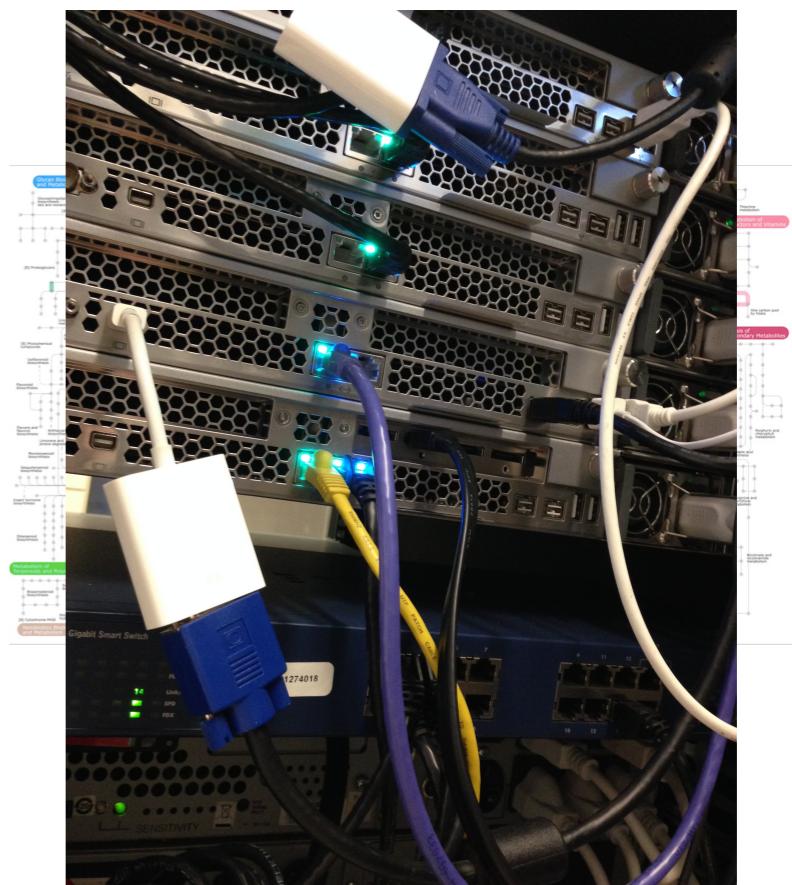
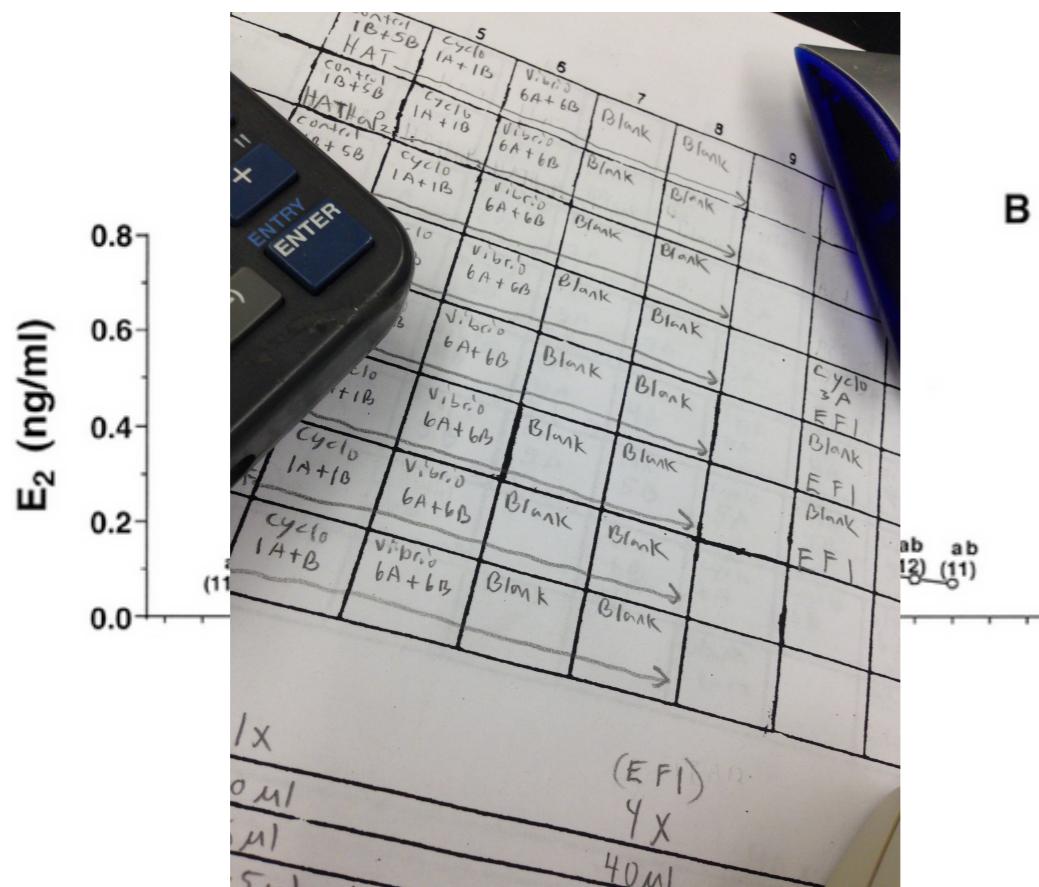
Context

Physiology

How fundamental processes work in aquatic species



B



Data Rich

*Data is
Open &
Online*

*Data is
Open &
Online*

So is everything else

Biology

Environment

Molecular

Data Analysis

eScience

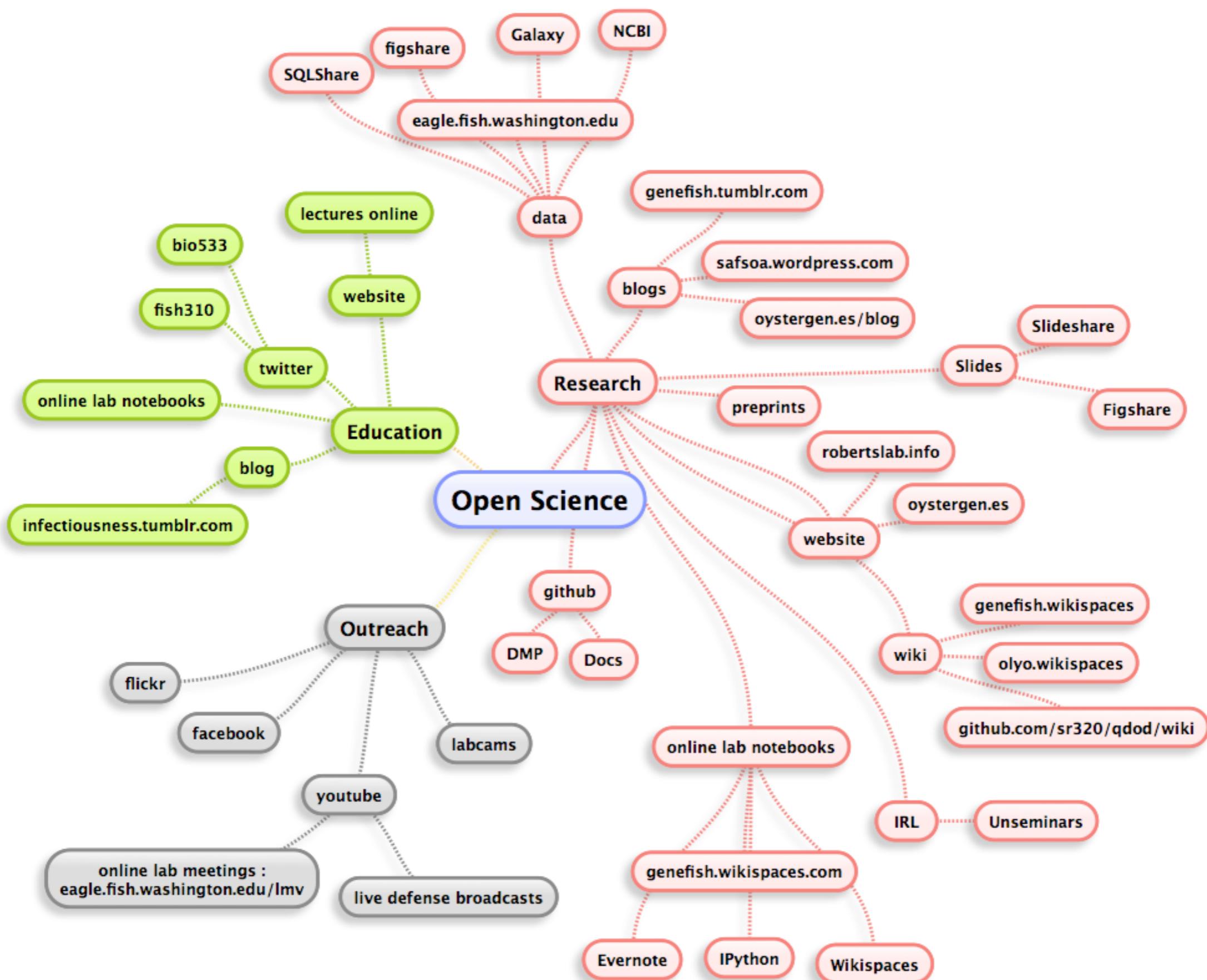
iPlant Galaxy

Notebooks

Rationale

Platforms

Open Science



Approach



Data Lake

Data Acquisition and Analysis

“But are you not worried that someone is going to ‘scoop’ your data?”

Data Rich

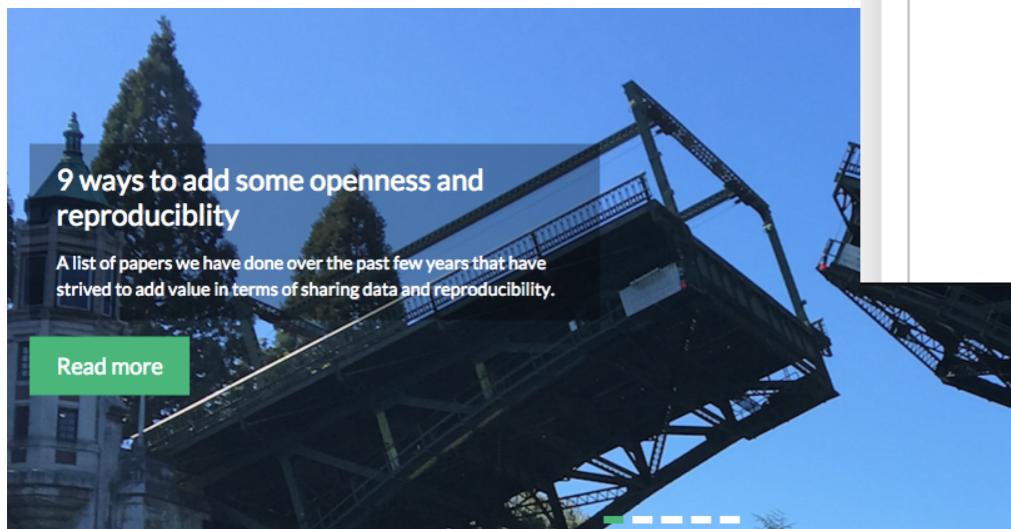
Everyone has backlogs of data that is not yet analyzed, no one is sitting around with nothing else to do

Data Acquisition and Analysis

Open
Notebook
Science

Data Acquisition and Analysis

Open Notebook Science



jupyter Welcome3 (autosaved)

File Edit View Insert Cell Kernel Help Python 3

Cell Toolbar: None

Welcome

Welcome to Pineapple, the next generation scientific notebook.

Run Python code

```
In [1]: 2 ** 64
```

```
Out[1]: 18446744073709551616
```

You can make plots right in the notebook

```
In [2]: %matplotlib inline
import matplotlib.pyplot as plt
import numpy as np
x = np.linspace(0, 10)
plt.plot(x, np.sin(x));
```

jldimond / Coral-CpG

Unwatch 2

Repository associated with article "Germline DNA methylation in reef corals: patterns and potential roles in response to environmental change"

22 commits 1 branch 0 releases 2 contributors

Branch: master +

Update READMEs

jldimond authored 5 days ago latest commit d94c7b5aec

analyses Update READMEs 5 days ago

data typo 7 days ago

ipynb Update READMEs 5 days ago

README.md typo 7 days ago

README.md

Analyses and data associated with manuscript:
Germline DNA methylation in six species of reef corals: patterns and potential roles in response to environmental change

Biology

Environment

Molecular

Data Analysis

eScience

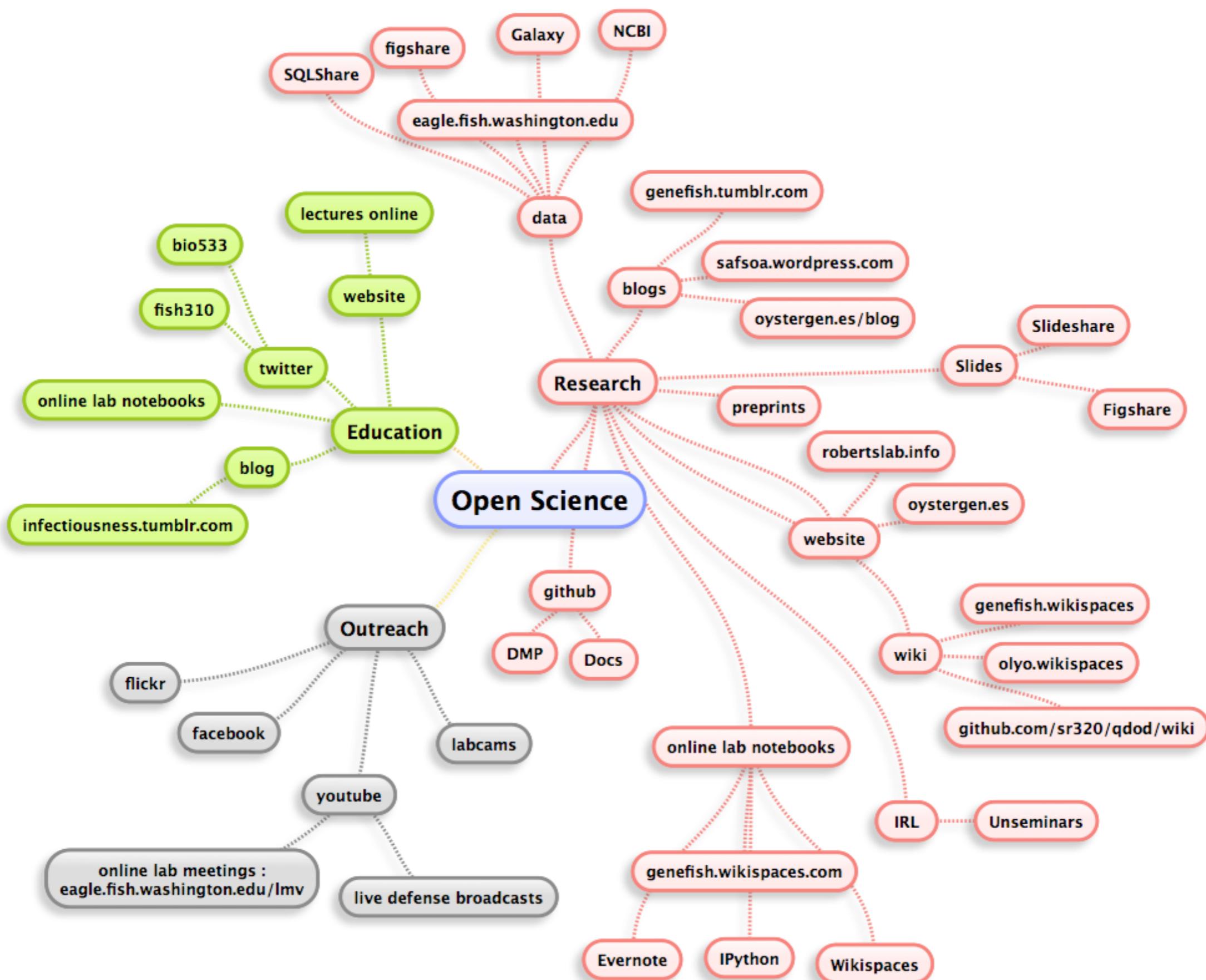
iPlant Galaxy

Notebooks

Rationale

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Why?

“Why would you do this? It has to take so much time and I don’t have that kind of time.”

Why?

It is easier for *me* to find stuff.

Approach



Data Lake

Why?

UW TODAY

October 7, 2015

Student collaboration leads to first results describing sick sea star immune response

Michelle Ma

News and Information

"I learned so much about open science and the idea of having open lab notebooks, where everything is available. That has had the biggest impact on how I do my science," said co-author [Sarah Gignoux-Wolfsohn](#), a doctoral student at Northeastern University. "Open science was really integral to us being able to work on this paper together."

Students.

Things will change, and there will be no open science.

Why?

other benefits

Outline

- Context
- **What** is Open and Online
- **Why** Open and Online
- Credit

Tenure

THE CHRONICLE OF HIGHER EDUCATION

February 17, 2015

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Technology

| [Comments \(31\)](#)

June 3, 2013

Rise of 'Altmetrics' Revives Questions About How to Measure Impact of Research



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University World News
June 10, 2013 ·

Steven B. Roberts's 103-page tenure package features the usual long-as-your-arm list of peer-reviewed publications. But Roberts, an assistant professor at the University of Washington who studies the effects of environmental change on shellfish, chose to add something less typical to his dossier — evidence of his research's impact online, reports Jennifer Howard, in The Chronicle of Higher Education.



Rise of 'altmetrics' and measuring impact of research - University World News

UNIVERSITYWORLDNEWS.COM

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Tenure

Tenure Package [SB Roberts]

Posted in Outreach, Publication

If anyone is interested in what a tenure package looks like (I know I could have benefited from a few more examples) I am making mine [available here](#).

Below is one of the tables I included, an attempt to quantify online science outreach.

PROMOTION PACKAGE

For promotion from the rank of Assistant to Associate Professor

Steven Beyer Roberts

Assistant Professor
School of Aquatic and Fishery Sciences
University of Washington

<http://faculty.washington.edu/sr320>

Platform	Purpose	URL	Metrics
Website	Primary Lab Website	faculty.washington.edu/sr320	2 months - 216 unique visitors
Wiki	Share online lab notebooks and protocols, lab communication	genefish.wikispaces.com	2012 - 20k views
Blog	Lab Tumblr	genefish.tumblr.com	12 months - 6137 visits
Facebook	Shares Lab Tumblr posts	goo.gl/pOitK	47 likes; 11k Friends of Fans
Blog	Blog specifically documenting our Ocean Acidification Research	safsoa.wordpress.com	2012 - 1645 views
Twitter	Automatic lab feed - notebook entries, posts, events	twitter.com/genefish	17,330 tweets
Twitter	Personal twitter account	twitter.com/sr320	1491 tweets
Flickr	Sharing research images	goo.gl/yzwE7	2726 photos
Youtube	Primarily host instructional videos	youtube.com/user/srlab	7351 views
Scribd	Share documents, primarily undergrad student papers	scribd.com/sr320	9908 reads
Figshare	Sharing datasets and documents	goo.gl/umGFg	4947 views
Slideshare	Sharing presentations	slideshare.net/sr320	49 slideshares

Tenure

PROMOTION PACKAGE

For promotion from the rank of Assistant to Associate Professor

Steven Beyer Roberts

Assistant Professor

School of Aquatic and Fishery Sciences
University of Washington

<http://faculty.washington.edu/sr320>

2012

Roberts SB, Hauser L, Seeb LW, Seeb JE (2012) Development of genomic resources for Pacific herring through targeted transcriptome pyrosequencing. PLoS ONE 7(2): e30908. doi:10.1371/journal.pone.0030908 [I F E A W]

Pages: 10

Article Views: 1075

Supplemental Data Views: 3792 (*most viewed on Figshare*)

Roberts SB and Gavery MR (2012) Is there a relationship between DNA methylation and phenotypic plasticity in invertebrates? Frontiers in Physiology. 2:116. doi:0.3389/fphys.2011.00116 [I F E A W]

Pages: 5

Article Views: 651

Gavery MR* and Roberts SB. (2012) Characterizing short read sequencing for gene discovery and RNA-Seq analysis in *Crassostrea gigas*. Comparative Biochemistry and Physiology Part D: Genomics and Proteomics, Available online 29 December 2011. doi: 10.1016/j.cbd.2011.12.003 [I F E A W]

Pages: 6

Statistic: #1 *most downloaded article in journal January – March 2012*

metrics

What do they really mean?

metrics

FigShare

Steven Roberts @sr320 · May 8

Stein: "#reproducibility is just a synonym for actually right" #uwrepro modular.math.washington.edu



Twitter

Steven Roberts @sr320 · May 8

Stark: "key to reproducibility is in the training" #uwrepro



Steven Roberts @sr320 · May 8

Freire: noWorkflow -supporting infrastructure to run scientific experiments w/o workflow management system
github.com/gems-uff/nowor... #uwrepro



[View summary](#)

Post	Total Reach?
Roberts Lab shared a link.	--
#TBT #wayback	--
Who is doing Science today?	17
Who is doing Science today?	16
Roberts Lab shared a link.	38

Facebook

Subject areas

Aquaculture, Fisheries and Fish Science

Marine Biology

Molecular Biology

66

Visitors

111

Views

24

Downloads

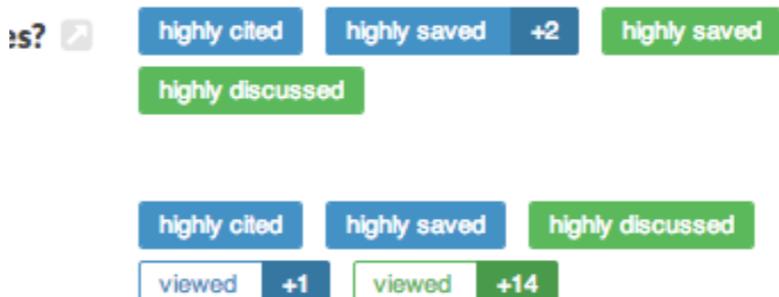
[View all metrics + mentions on the Web](#)

Open Access

Bronze level award

Steven has made 33% of 61 listed articles free for anyone to read.

ImpactStory

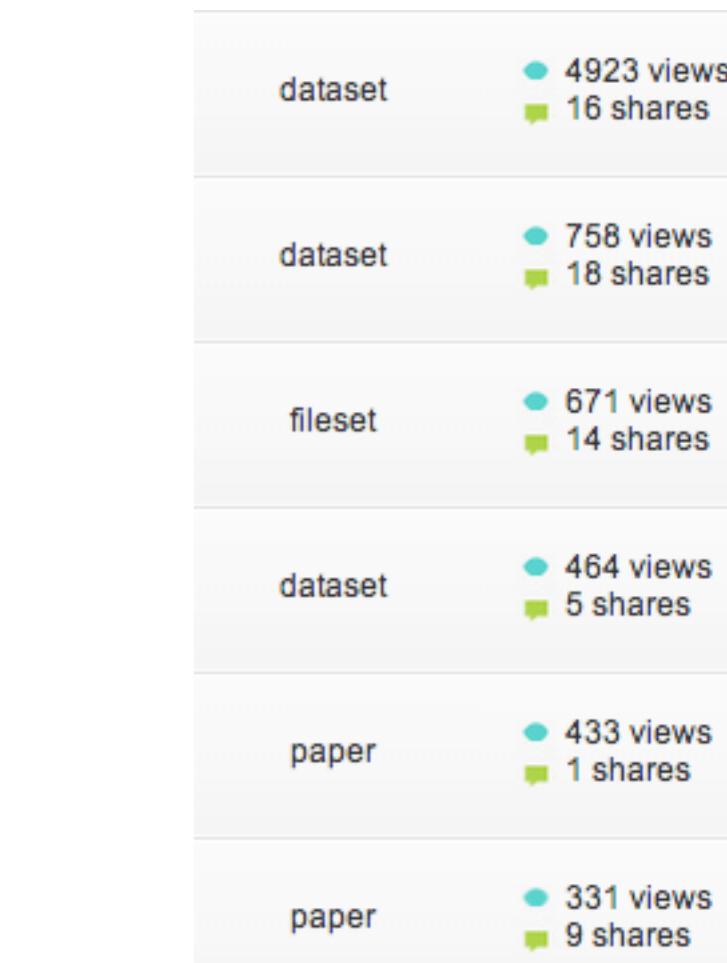


PeerJ altmetrics

Top referrals unique visitors

<news-oceanacidification-icc.org>

18



Web Analytics



metrics

FigShare

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Stein: "#reproducibility is just a synonym for actually right" #uwrepro modular.math.washington.edu



Twitter

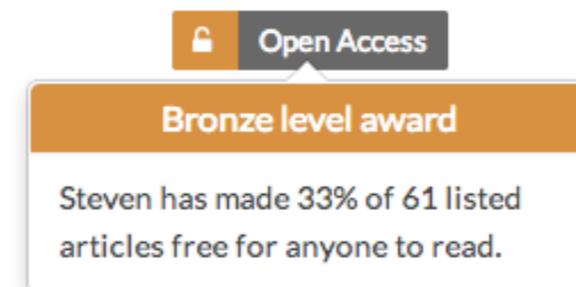
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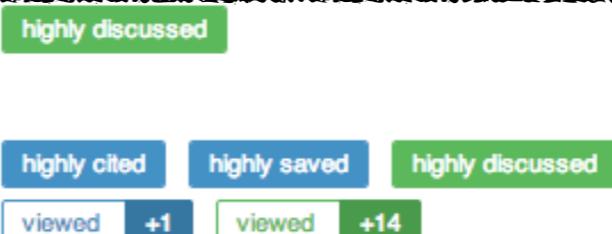
Freire: noWorkflow -supporting infrastructure to run scientific experiments w/o workflow management system
github.com/gems-uff/nowor... #uwrepro



ImpactStory

changes behavior, for the better.

Post	
	Roberts Lab shared
	#TBT #wayback
	Who is doing Science today?
	Who is doing Science today?
	Roberts Lab shared a link.



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PeerJ altmetrics

Top referrals unique visitors

news-oceanacidification-icc.org

18



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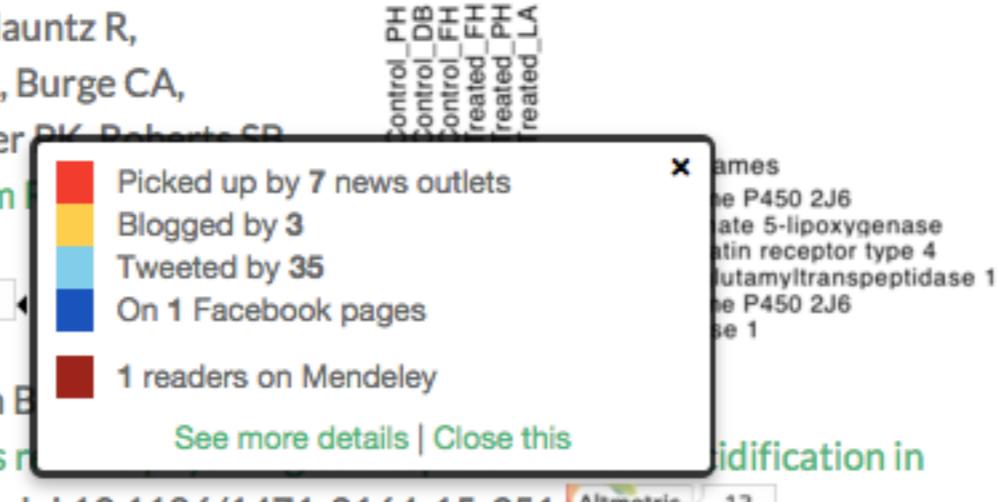
Peer-Reviewed Publications

see also [preprints](#)

Froehlich HE, Roberts SB, Essington TE (2015) Evaluating hypoxia-inducible factor-1a mRNA expression in a pelagic fish, Pacific herring *Clupea pallasii*, as a biomarker for hypoxia exposure Comparative Biochemistry and Physiology – Part A: Molecular and Integrative Physiology doi:10.1016/j.cbpa.2015.07.016



Fuess LE, Eisenlord ME, Closek CJ, Tracy AM, Mauntz R, Gignoux-Wolfsohn S, Moritsch MM, Yoshioka R, Burge CA, Harvell CD, Friedman CS, Hewson I, Hershberger PK, Roberts SB (2015) Up in Arms: Immune and Nervous System Response to Sea Star Wasting Disease PLoS ONE doi:10.1371/journal.pone.0133053



Timmins-Schiffman E, Coffey WD, Hua W, Nunn B, GH and Roberts SB. (2014). Shotgun proteomics reveals differential protein expression in the hemolymph of healthy and diseased *Crassostrea gigas* BMC Genomics 2014, 15:951 doi:10.1186/1471-2164-15-951



Olson CE and Roberts SB. (2014). Genome-wide profiling of DNA methylation and gene expression in *Crassostrea gigas* male gametes Frontiers in Physiology. 5:224. doi: 10.3389/fphys.2014.0022



Gavery MR and Roberts SB. (2014) A context specific role for DNA methylation in bivalves Briefings in Functional Genomics. doi:10.1093/bfgp/elt054 (pdf)



Altmetric

Hey, I want a badge!

— Reproducible Research & Open Science Badge Criteria —

CRITERION	SCORE
Category One - Reproducibility	
Primary software tools for research are open source	1 pt
Submit your code for review	2 pts each
Perform code review for someone else	2 pts each
Code repositories have detailed, plain-English README files describing the computational environment and dependencies (including version numbers) to facilitate independent reproduction	1 pt each
Perform a reproducibility review for someone else	2 pts each
Publication has complementing code & data repositories that can be used to reproduce results	4 pts each
Computational environment captured (ie. in a virtual machine image/ dockerfile / vagrantfile , etc.) in one or more research compendia	1 pt
Have the substantive results of your publication reproduced by someone else using your code and data	2 pts each

CRITERION	SCORE
Category Two - Open Data and Code	
An account at one or more web-based code-hosting service (eg. GitHub / BitBucket / GitLab or similar)	1 pt
One or more sets of raw data are in open formats (eg. CSV, txt, etc.)	1 pt
One or more datasets in an institutional repository (not personal webpage)	1 pt
One or more datasets in Figshare / Zenodo or domain specific open data repository that issues persistent URLs	1 pt
Code is developed in one or more GitHub / BitBucket / GitLab or similar version-controlled open code repository	1 pt
One or more code repository has a persistent URL (eg. DOI) to a specific release	1 pt
One or more code repository has an open license (eg. MIT / BSD / GPLv2 etc.)	1 pt
Code has one or more tests	1 pt
One or more sets of raw data are published as soon as generated	5 pts
One or more Online Lab Notebooks	2 pts

CRITERION	SCORE
Category Three - Open Access Products	
An ORCID ID	1 pt
Preprint in arXiv , biorXiv , PeerJ Preprint	1 pt each
One or more grant proposals & data management plans online & Open Access	1 pt
Green Open Access copies of publications in a discipline or institutional repository	1 pt each
Publons and/or PubPeer account	1 pt
>50% of papers in last two years are Open Access	2 pts
>75% of papers in last two years are Open Access	5 pts

“This all sounds fun, but a little overwhelming.”

“This all sounds fun, but a little overwhelming.”

When publishing paper, publish data.

GitHub.

Jupyter.

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These slides plus links etc @
github.com/sr320/talk-CC-OA-2015