

Hacking the Academy: Open in Action

OA Week @ University of Washington

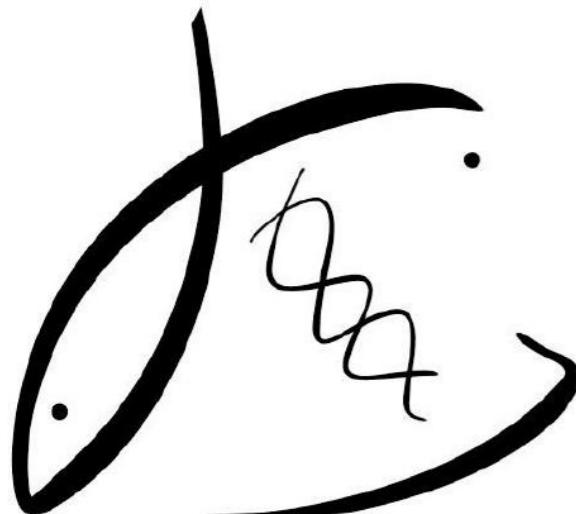
Steven Roberts

Kenneth K. Chew Endowed Professor
School of Aquatic and Fishery Sciences

University of Washington

robertslab.info

@sr320



Open Access Week

- You are free to Share!

These slides plus links etc @
github.com/sr320/talk-UW-OA-2016

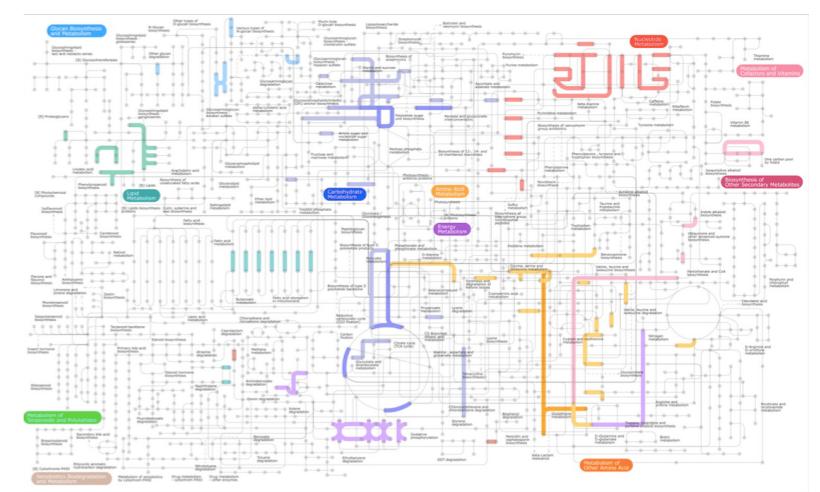
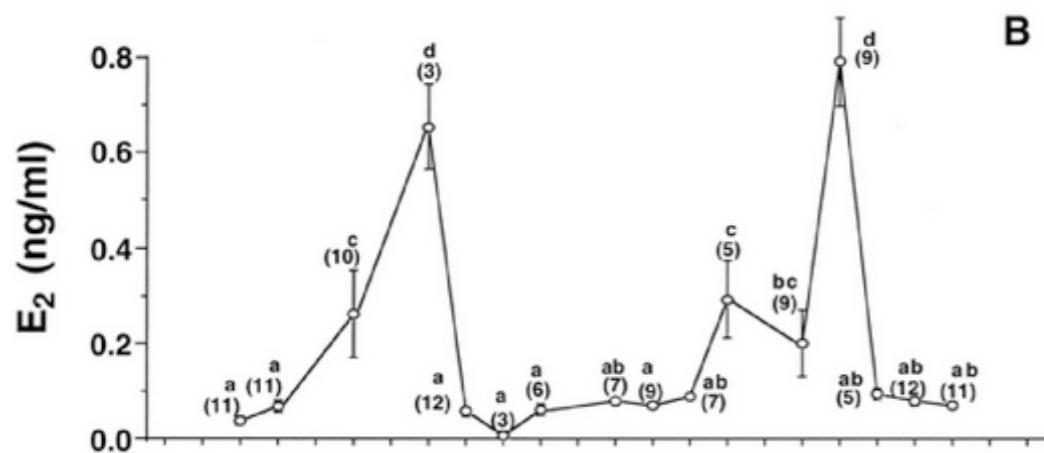
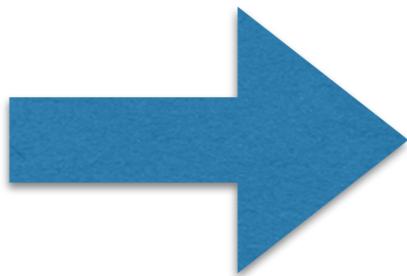
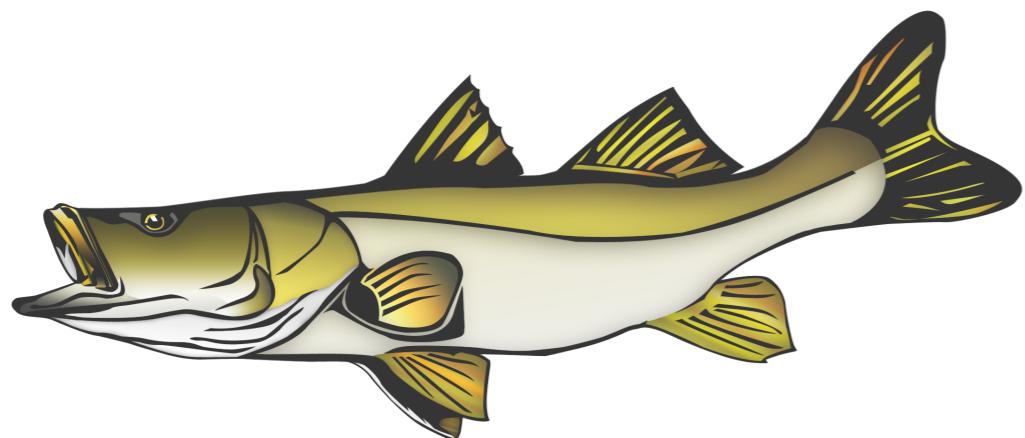
Outline

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

Context

Physiology

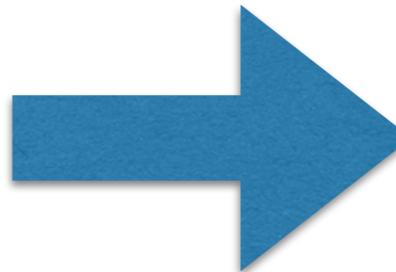
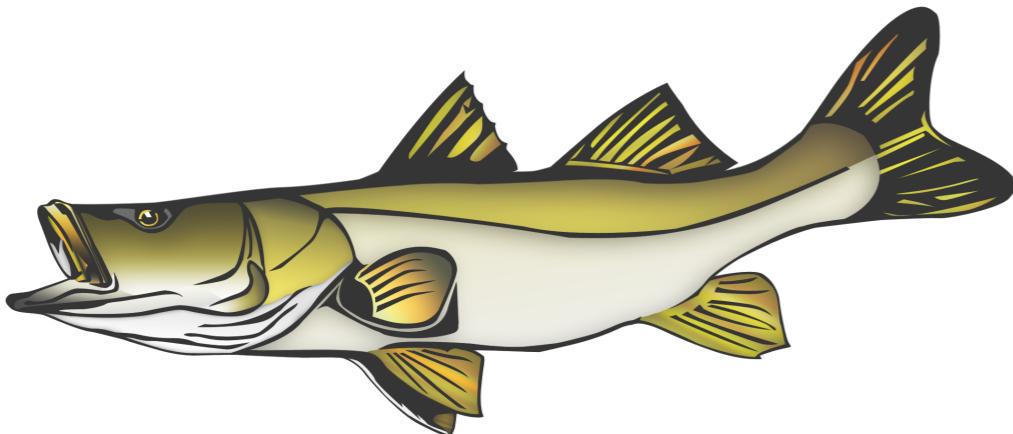
How fundamental processes work in aquatic species



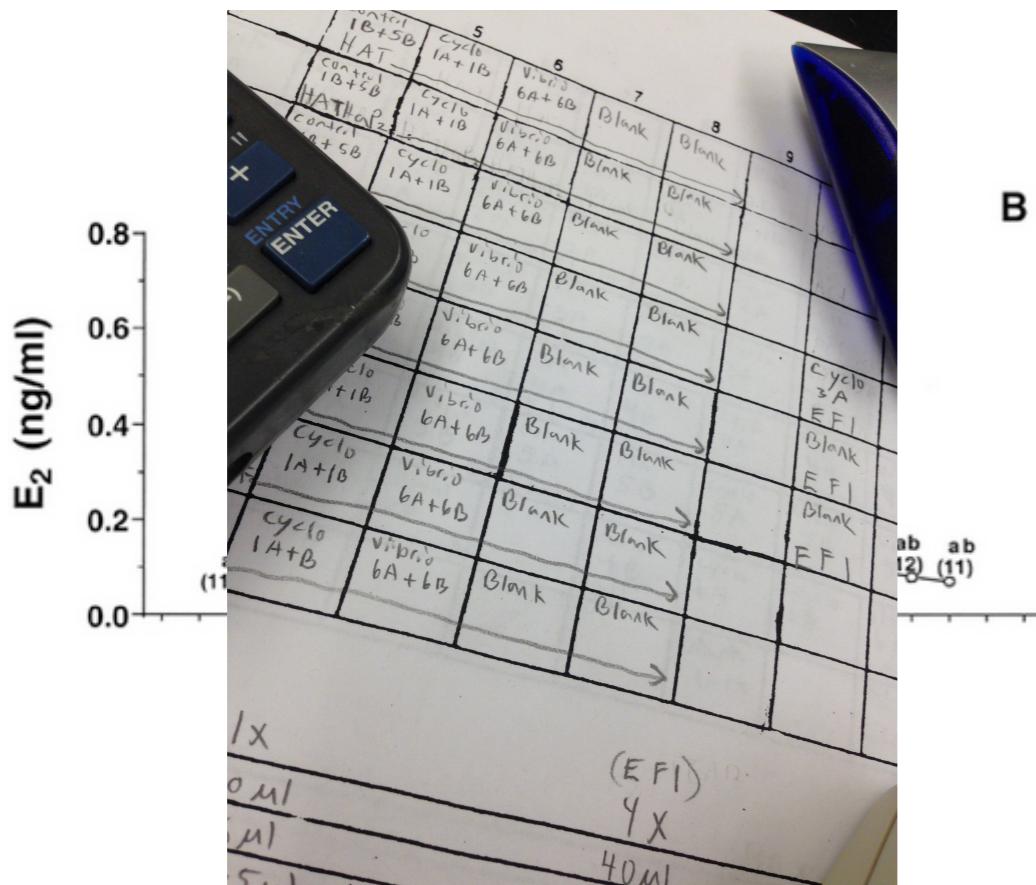
Context

Physiology

How fundamental processes work in aquatic species



B



Data Rich

*Data is
Open &
Online*

*Data is
Open &
Online*

So is everything else

Biology

Environment

Molecular

Data Analysis

eScience

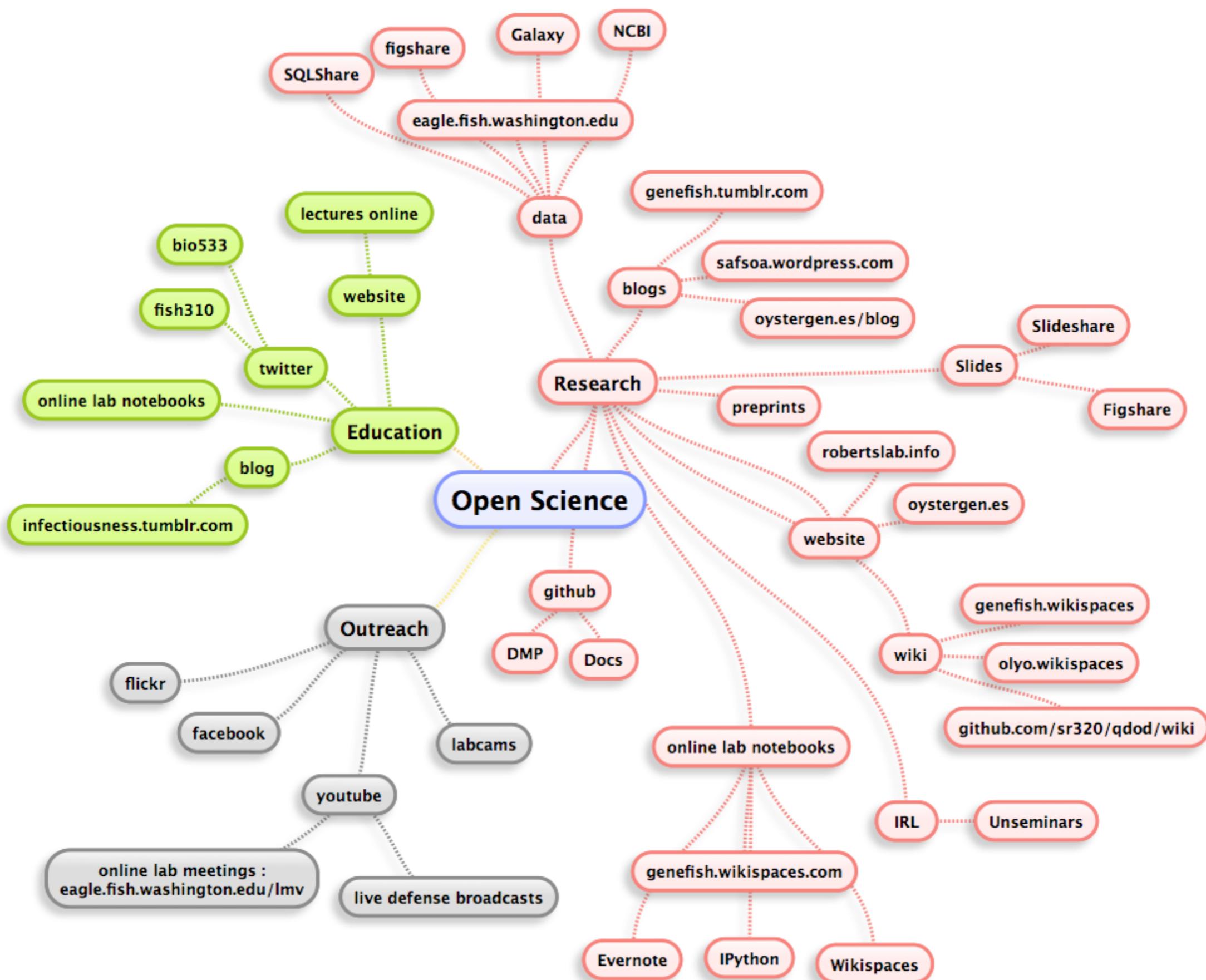
iPlant Galaxy

Notebooks

Rationale

Platforms

Open Science



Data

Approach



Data Lake

Data Acquisition and Analysis

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

Data Rich

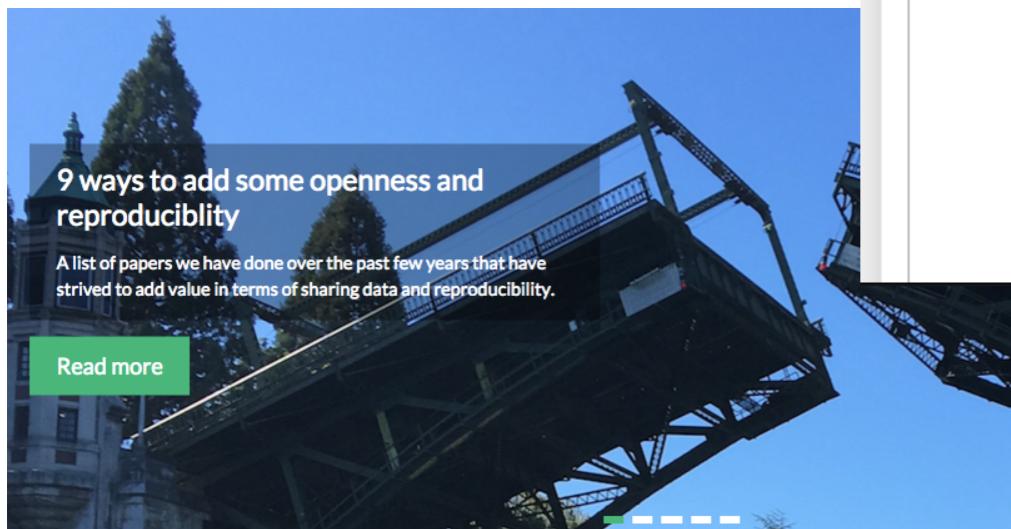
Everyone has backlogs of data that is not yet analyzed, no one is sitting around with nothing else to do

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

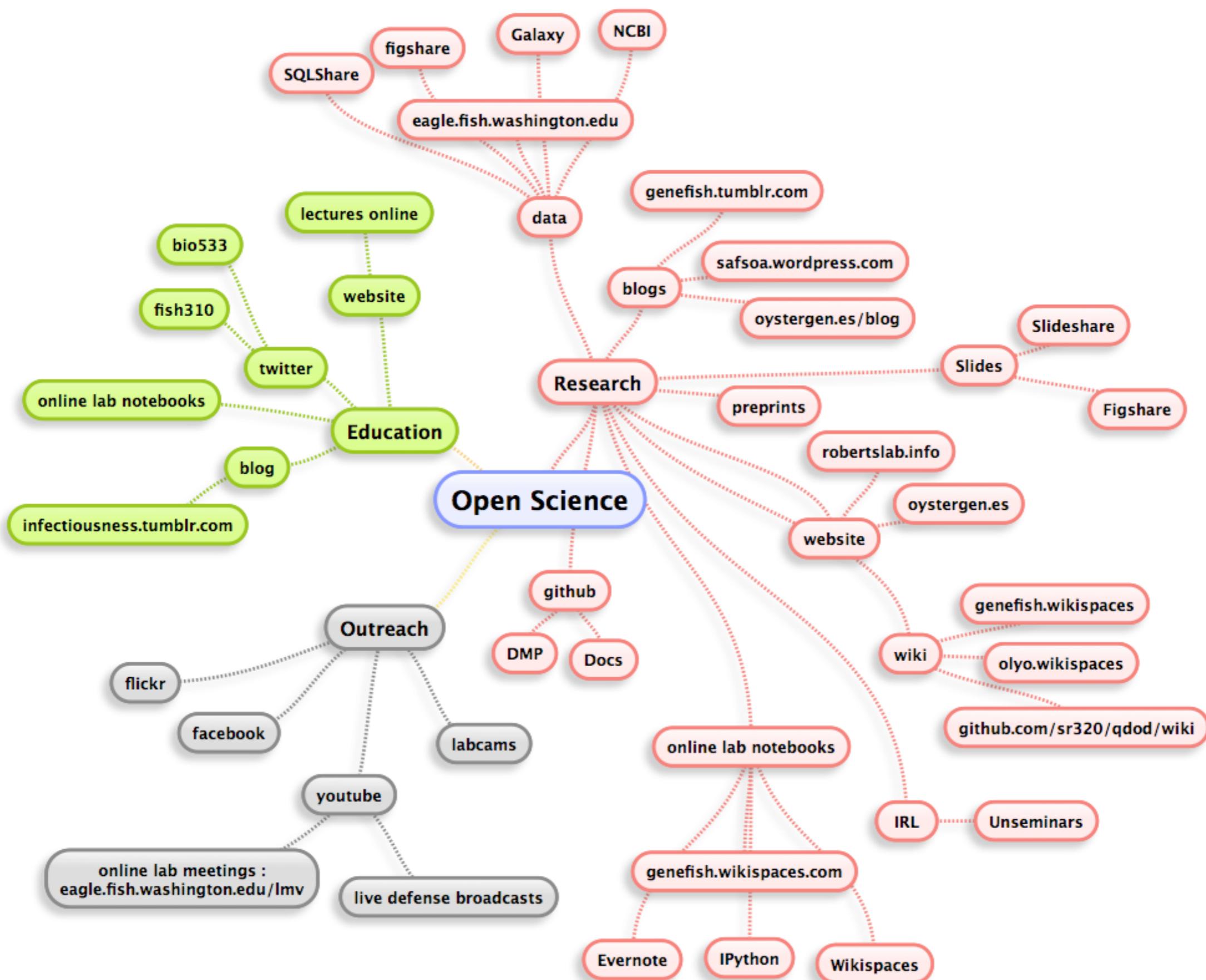
iPlant Galaxy

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

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Tenure

THE CHRONICLE OF HIGHER EDUCATION

February 17, 2015

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Technology

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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

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

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Simple tips to start...

When publishing paper, publish data.



GitHub.

Jupyter.



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