

Science Communication & Impact

What I think about

Steven B. Roberts
School of Aquatic and Fishery Sciences
University of Washington

robertslab.info
@sr320

Personal Learning Environments

PLE in ‘*Conventional*’ scientific cycle

What we do...

altmetrics

Backstory

me



4

Evolution

Genomic Approaches in Fisheries and Aquatic Sciences
A mini-course focusing on bioinformatic and gene expression analysis techniques

Updated 01/07/07

Lecture 1 - Biology Basics and ESTs [AUDIO](#)
(NRC 310 Tuesday, June 13, 5:00pm)
The first class will go over some basics on what bioinformatics and gene expression analysis means. In addition we will discuss a relevant paper (click link below). The powerpoint will also be available.
A handout for the lecture (.pdf; six slides / page) can be [downloaded](#).
The full size slides are available in PDF format. Email me for a password then [click here](#).
Paper to discuss: <http://www.ncbi.nlm.nih.gov/310/Genes2003.pdf>
Molecular characterization and expression of the gene encoding aspartate aminotransferase from the Pacific oyster *Crassostrea gigas* exposed to environmental stressors

Lecture 2 - Making sense of the ABCs [AUDIO](#)
(NRC 310 Tuesday, June 20, 4:00pm)

Useful Links
NCBI
TGAR
EASOIR
MARINE GENOMICS PROJECT
BiosciLab
FISH546
Brief review of what was covered in previous lecture with focus on some of the topics that were brought up in discussion. For example:
What is sense and antisense?
Fundamentals of RNA vs DNA with all the A,C,G,T, and U's
PCR: from the basics to sequencing (including future technologies)
DNA and RNA

New material will cover using real-time PCR for detection of organisms, targeting genomic DNA.
A handout for the lecture (.pdf; six slides / page) can be [downloaded](#). The full

5

Evolution

Applied Bioinformatics for Aquatic and Fishery Sciences

This course will explore the rapidly evolving genetic resources available from aquatic organisms and the bioinformatic approaches that can be used to explore, mine, and characterize these resources. The intended audience ranges from field ecologists to bench scientists.

Home Lecture Syllabus Software Genome Projects Assignments Favorite Gene

- tumblr blog
- calendar
- media (image/video)
- message board
- anonymous email
- favorite page

Meeting Times and Locations
Tuesday 2:30-3:50 PM 203
Thursday 10:30-12:20 PM 136

Instructor: Steven Roberts [mailto:stevenr@tulane.edu](#)
Assistant Professor

6

Evolution

FISH510

Page Discussion History Notify Me

Innovations in Molecular Techniques

Fall 2008
Instructor: Steven Roberts [mailto:stevenr@tulane.edu](#)
Mondays: 12:45-2:30 PM 109

Schedule of Topics

Week 1 - Intro
Week 2 - Gene Discovery (Amanda & Kristy)
Week 3 - Bioinformatics (Lisa & Mac)
Week 4 - Epidemiology (Jennifer & Amanda)
Week 5 - Next Generation Sequencing Technology (Bethany & Lisa)
Week 6 - Molecular Diagnostics (Lisa & Cat)
Community Ecology (Lisa & Jennifer)
Week 7 - qRT-PCR (Angela & Cat)
Week 8 - Microarrays (Mac & Bethany)
Week 9 - Proteomics (John & Kristy)
Week 10 - Metabonomics (John & Angela)

This course will provide students (both field and lab-centric) a forum to discuss innovations in molecular techniques in basic scientific research and natural resource management decisions.

Format: Each week we will discuss an application of molecular technology in the aquatic sciences. This discussion will be based on responses for testing the discussion and responding for the respective week. A separate page (see above) will be generated for each week. While the designated presenter will be primarily responsible for content throughout this wiki just as in class, the class is open to anyone.

Expectations: Students will contribute to the educational atmosphere by completing reading assignments, contributing ideas, and discussion but this also includes contributions to the site.

7

Evolution

FISH546: Aquatic-BioInformatics

Workspace Access & Roles [VIEW](#)

Home Add content [+>](#)

Syllabus [Syllabus](#)

LOS Presentations [LOS Presentations](#)

Slides [Slides](#)

Calendar [Calendar](#)

Links [Links](#)

MORE... [MORE...](#)

CLC Instructions [CLC Instructions](#)

Gradebook [Gradebook](#)

+ Add a new view

Primary means for class communication / networking / participation
<http://FISH546.tumblr.com/>

FISH546 Owner Manage grade book

FISH 546: Bioinformatics for Environmental Sciences [bioinformatics environmental science](#)

This is a course developed for biologists and ecologists that will cover computational analysis of molecular sequence data. Computational analysis of these data is a valuable tool to better understand biological processes and facilitate new discoveries. Bioinformatics can be considered a set of computer programs, methods, and theories that are used to analyze and interpret biological data. This course will introduce students to the use of bioinformatics tools for gene resources for non-model organisms and will spend time on design (or mining) primary sequence databases for gene resources. Students will learn how to use bioinformatics tools to analyze and interpret biological data. This course will also introduce students to the use of bioinformatics tools for gene resources for non-model organisms and will spend time on design (or mining) primary sequence databases for gene resources.

8

Evolution

FISH510: Applications of New Sequencing Technologies in Aquatic Sciences

MEETING: Tuesday 2:30, Winter 2011, NSH 109
INFO FOR NEXT TALK:

GENERAL LINKS
NSH and Bioinformatics
Bioinformatics Institute
Bioinformatics

Reader's Mind10
DRAFT stage let us sequence the genome from a single cell.
How to do it
How methods for next generation sequencing benefit morphology,
from [NSH Seminar](#) - Last slide
Using bioinformatics to predict the functional impact of mutations
on Target: Hypothesis-driven
from [Pathogen Genomics](#) - Last slide
Genotype calling and mapping of multiple variants
from [Bioinformatics](#)

View of 2

View the announcement for [bioinformatics](#)

Home [Announcements](#) The Genetic Landscape of the Universe

9

PLE

"**Personal Learning Environments** are systems that help learners take control of and manage their own learning. This includes providing support for learners to

- set their own learning goals
- manage their learning; managing both content and process
- communicate with others in the process of learning

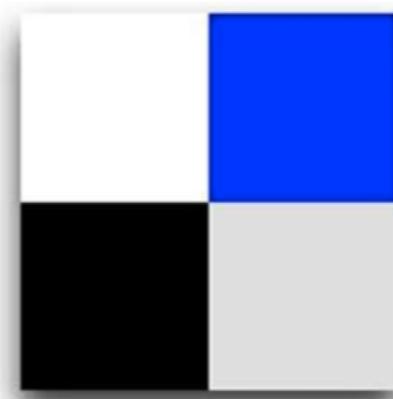
and thereby achieve learning goals.

A PLE may be composed of one or more subsystems: As such it may be a desktop application, or composed of one or more web-based services."^[1]



PLE

Personal Learning Environments



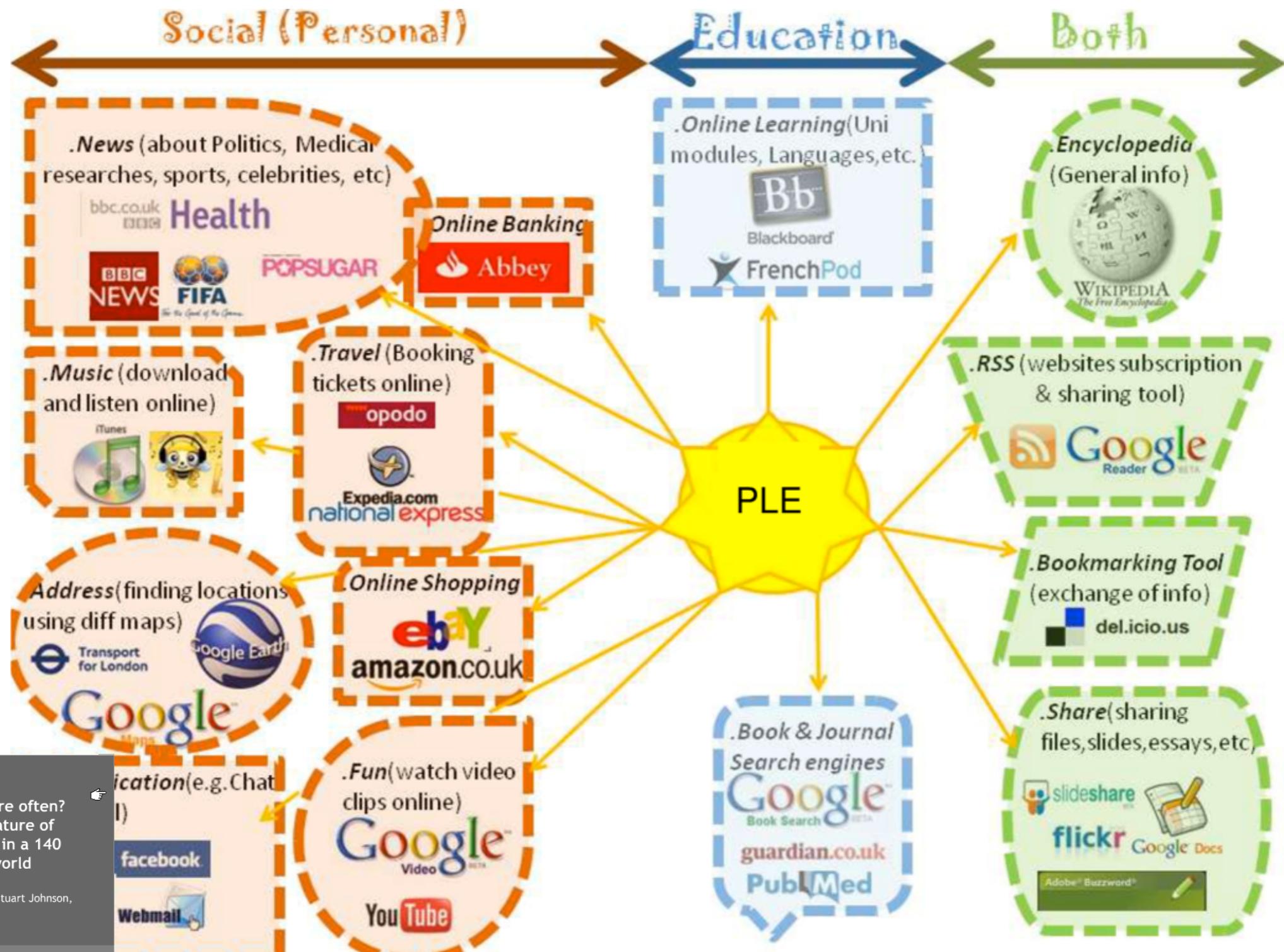
Do you come here often?
The fleeting nature of
communication in a 140
character world

Jo Badge, Alex Moseley, Stuart Johnson,
Alan Cann

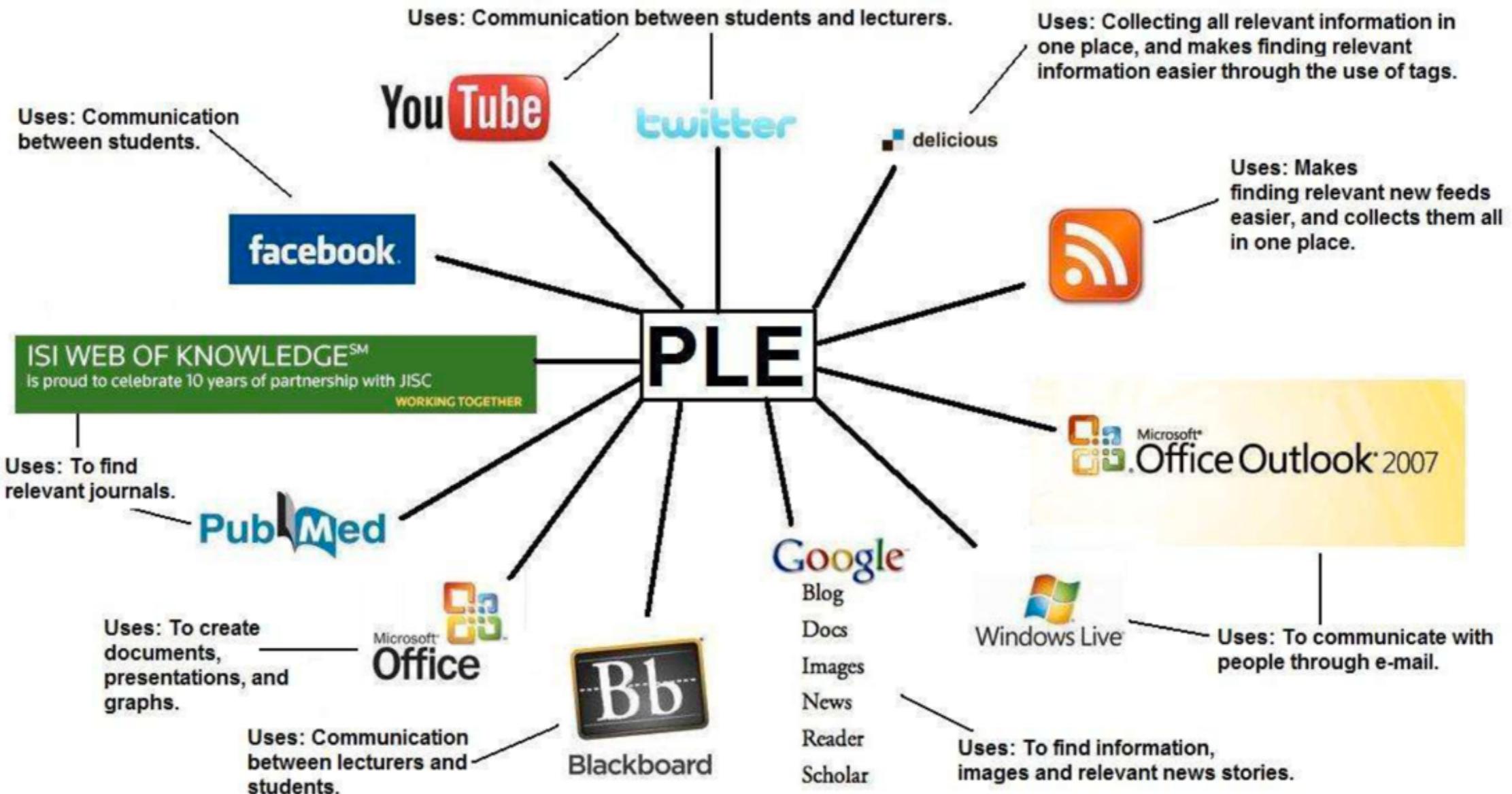
www.le.ac.uk

twitter.com/jobadge

PLE



PLE



C L E

PLATFORM?



sr320's Network

[Bookmarks](#) | [Network](#) | [Tags](#) | [Subscriptions](#) | [Inbox](#)Also see more bookmarks in [Popular](#) or [Recent](#).[sr320](#) > [Network](#) Type a tag

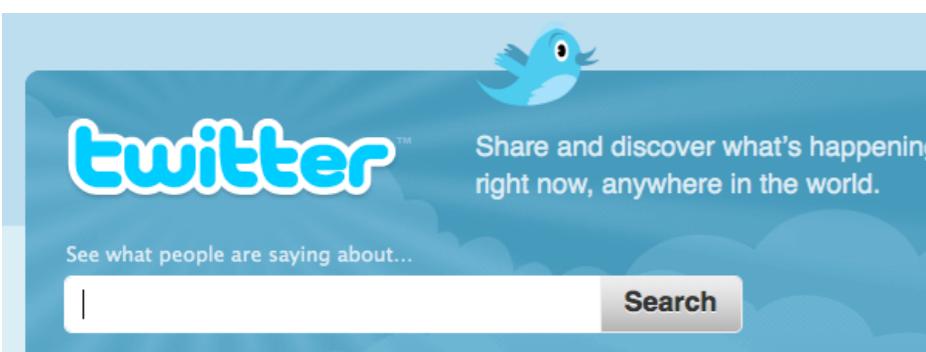
16 DEC 09 [DNA Methylation and Structural and Functional \(8\): 1602 – Molecular Biology and Evolution](#) SA

mgavery

friendfeed

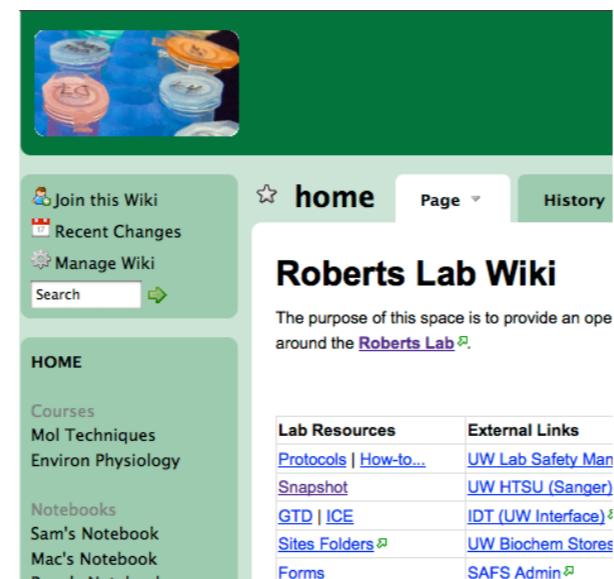
FriendFeed is the easiest way to share online

[Why FriendFeed?](#) [What can you use it for?](#) [Testimonials](#)



twitter™ Share and discover what's happening right now, anywhere in the world.

See what people are saying about... Search



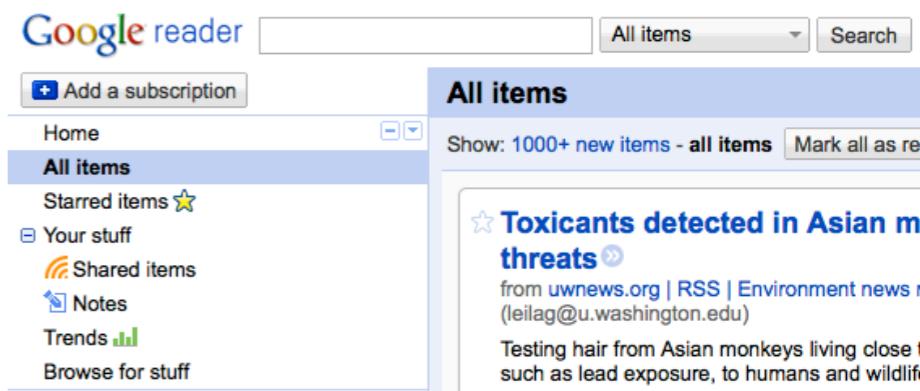
Join this Wiki
Recent Changes
Manage Wiki
Search

home Page History

Roberts Lab Wiki

The purpose of this space is to provide an open forum around the [Roberts Lab](#).

Lab Resources	External Links
Protocols How-to...	UW Lab Safety Manual
Snapshot	UW HTSU (Sanger)
GTD ICE	IDT (UW Interface)
Sites Folders	UW Biochem Stores
Forms	SAFS Admin



Add a subscription

All items

Show: 1000+ new items - all items

Starred items

Your stuff

Shared items

Notes

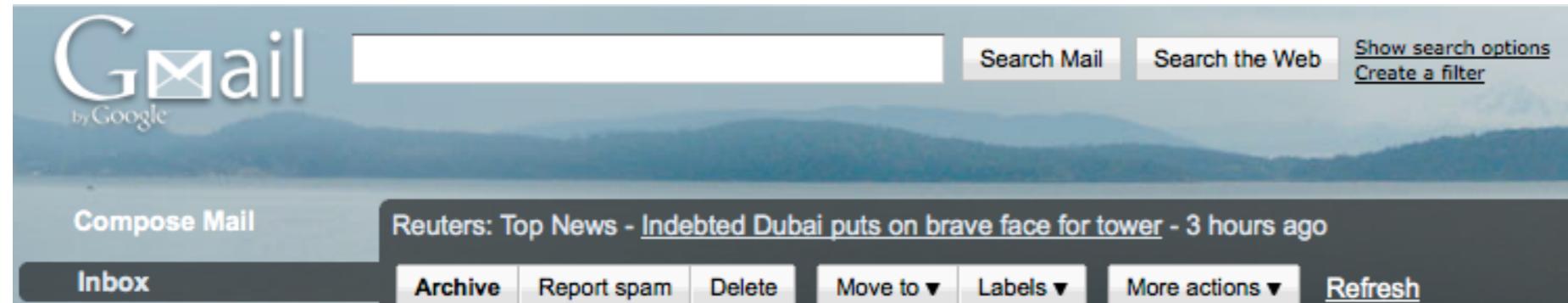
Trends

Browse for stuff

Toxicants detected in Asian monkeys pose threats

from [uwnews.org](#) | [RSS](#) | Environment news reader (leilag@u.washington.edu)

Testing hair from Asian monkeys living close to such as lead exposure, to humans and wildlife



Gmail by Google

Compose Mail

Search Mail Search the Web Show search options Create a filter

Reuters: Top News - [Indebted Dubai puts on brave face for tower](#) - 3 hours ago

Inbox Archive Report spam Delete Move to ▾ Labels ▾ More actions ▾ Refresh

aging algae alignment amazon ambient amplification analysis
anemone animation **annotable annotation** annotations anoxia
apple aquaculture ArcVIEW art assay assays assembly audio aws
backup bacteria barnacles batch bibliographic bibliography
bioavailability biochemistry biodiversity biofilm
bioinformatics biology biomarker biopsy bird
birds bivalve blast book bookmarks bots bpi brainstorming buoy buttons
cadmium calendar camouflage canal capture carbon casein cdna
cellphone cephalopod **cetacean** chart charts chat chatroom
checker chip chum clam clc climate cloud cluster cnidarian cod
coho coli **collaboration** computing conference conferencing
conservation contract cooking copyright **coral** core corticotropin **cortisol**
cox cpg crab **crassostrea** CRF CRH crockpot crustacean
crustaceans cyanobacteria cyp1a1 cytometry danio **data**
database databases datamining datasets delicious
desktop diagrams digital directory **disease** distributed docs documents
dollar dolphin download dualscreen e-science earth ebi ec2 echinoderm
ecoli ecolihub ecology **education** eicosanoid ejournals email
embed embrace **emma** endocrine enotebook ensembl
environment environmental **epigenetic** epigenetics
epigenomics esri **est** estrogen ESTs **evolution** exce excel export
expression eye FAO fasta fellowships file filesharing firefox **fish**
fish310 **fish441** FISH507 **FISH510**
FISH546 fisheries flash flv follistatin format **free** freeware fun
funding fundulus gadgets galaxy gastropod gbrowse **gene** genecards
genes genetics genome genomics geocode geocoding
geolocation GH **gis** gis_data glucocorticoid **go** gominer gonad **google**
googledocs googleearth googlemaps googletalk graduate grants
graphics grid gtalk haliotis **hemocyte** hemolymph herbicide herring
histology homing hood hormone horseshoe **howto** hrn hsp html
hypoxia icon icons ig IGF **illumina** im image **images**
delicious insect integration interaction interleukin
Home es journal journals keynote kml krill lab literature

Bioinformatics

Find info on your favorite gene(s)/pathway(s)

See some [great example of some that already have](#).

Resources:

- [NCBI](#)

 [Video Tutorial](#). How to quickly use BLAST to find out more about an EST
[Blast tips](#) [via NCBI]

- [genomic_it](#) ([download](#))

 Video Tutorial. How to use genomic_it [[Hi-Res](#)]

- [iHOP](#)
- [Panther](#)
- [The Reactome Book](#): a textbook of biological pathways
- [Gene Ontology](#)

 [Video Tutorial](#). How to generate GO Pie Charts [[Hi-Res](#)]

- [cGRASP](#) (Salmonids only)
- [KEGG](#)

Identify Intron Location

- [Spidey](#)

 [Video Tutorial](#). How to find Intron location in genes [[Hi-Res](#)]

- [Splign](#)

Design Primers

Tools available include

- [NCBI primer Blast](#)
- [Geneious](#)
- IDT
- [BiBiServ GF2](#) (I have not tested) -  [sr320](#) Sep 14, 2008 9:47 am

See also: [post on approach for gene discovery in Vt](#)

Align Sequences

- [Geneious](#)
- [Blast](#)
- NCBI BLINK

 [Video Tutorial](#): Sequence Alignments using BLINK and

TODAY

Idea Generation
Data Acquisition
and Analysis
Publication

Idea Generation

Publication

Data Acquisition and Analysis

Publication

Publication

Publication

Idea Generation

Data Acquisition and Analysis

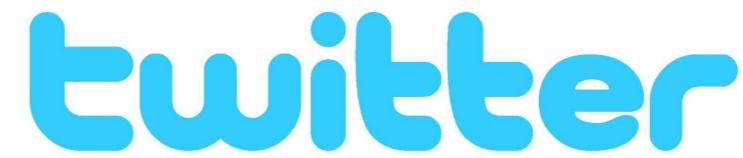
PLE
continually
evolving

Publication

Publication

Publication

Publication



Google+

Search

Communities ▾

Roberts Lab

social bookmarking

Delicious

The Diigo logo, featuring the word "diigo" in a blue, lowercase, sans-serif font with a yellow swoosh underneath.

Pinboard



Idea Generation

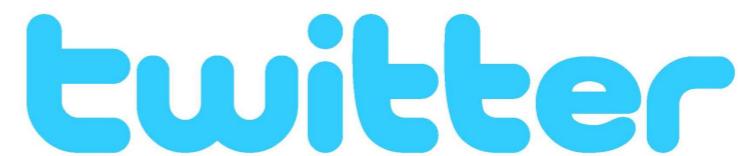
Publication

Data Acquisition and Analysis

Publication

Publication

Publication



Google+

Search

Communities ▾

Roberts Lab

social bookmarking

Delicious

Pinboard

Evernote Premium

BR@GMAIL.COM ▾ + New Note in fu ▾ Search notes

fu ifttt Share ▾

A proof of concept for a research compen...
3/14/15 JOIN US Sign In About Blog Training Com...

GitHub · Build software better, tog...
3/14/15 schwilklab / protocols Explore Sign in This repository Code Issues Pull Requests Pulse lab-org/data-management.md Loading latest commit... Data Management author...

RRBS

What is RRBS?
Solely, RRBS libraries are generated by digesting genomic DNA with the restriction endonuclease MspI. This is followed by end repair, 5'-capping, adapter ligation and library double-stranded synthesis. Often, the library is also size selected for fragments between 40 and 100 bp. RRBS is a cost effective way to study epigenetic changes in the genome. It provides information on the exact location of CpG islands within the human or mouse genome. Fig 1 shows that quite a few longer DNA fragments generated in silico for the mouse genome are too short to be detected by RRBS. The exact number of fragments depends on the size of the genome. After a certain number of fragments become MspI can end up in the RRBS library.

Created: Mar 16, 2015 Updated: Mar 16, 2015

Favorite tweet by @moorejh March 16, 2015 at 07:54AM

#bioinformatics #genomics RT @Rbloggers: DAVID functional analysis with clusterProfiler <http://t.co/JLmu8QPqgf> #rstats

— Jason H. Moore, Ph.D (@moorejh) [March 16, 2015](#)

via Twitter <http://ift.tt/1gN5ncR>

March 16, 2015

Idea Generation

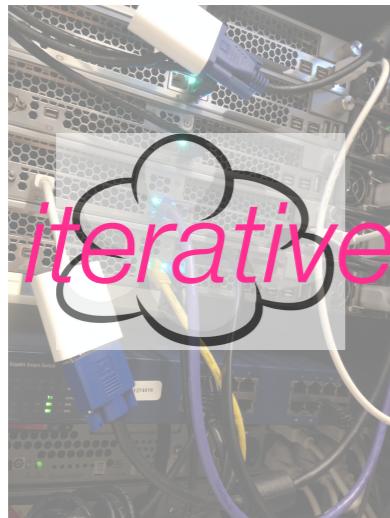
Publication

Data Acquisition and Analysis

Publication

Publication

Publication

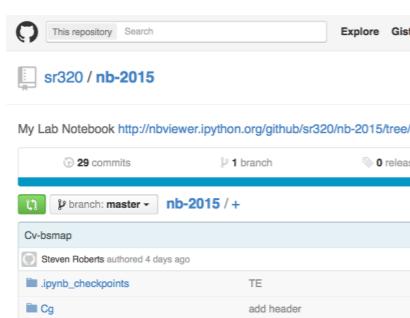


lab notebooks



wikis for everyone

IP[y]: IPython
Interactive Computing



Open Notebook Science

Idea Generation Data Acquisition and Analysis

Publication
Publication
Publication
Publication



lab notebooks



wikis for everyone

IP[y]: IPython
Interactive Computing

"When you're working in the open, only 9 in the ENTIRE world needs to solve a given problem"

TOREV

Sean-Claude



OpenNotebookScience

This repository Search Explore Gist

sr320 / nb-2015

My Lab Notebook <http://nbviewer.ipython.org/github/sr320/nb-2015/tree/r>

29 commits 1 branch 0 releases

branch: master nb-2015 / +

Cv-bsmap

Steven Roberts authored 4 days ago

.ipynb_checkpoints TE

.Cg add header

Automating a Workflow: Beyond Blast - to GO Slim

The concept is that you can take a fasta file in a working directory and end up with GO slim information all within a single notebook that is automated. Current writing (and overwriting) as scratch file to SQLShare. Assumptions are that you are working in a directory with fasta file named query.fa. And blast algorithms are available.

```
In [13]: #allows plots to be shown inline
%pylab inline

Populating the interactive namespace from numpy and matplotlib

In [4]: #Setting Working Directory
wd="/Volumes/web/whale/fish546/qpx_go_val"
#Setting directory of Blast Databases
dbd="/Volumes/Bay3/Software/ncbi-blast-2.2.29+/db/"
#Database name
dbn="uniprot_sprot_r2013_12"
#Blast algorithm
ba="blastx"
#Location of SQLShare python tools: you can empty ("") if tools are in PATH
spd="/Users/sr320/sqlshare-pythonclient/tools/"

In [5]: cd {wd}
/Volumes/web/whale/fish546/qpx_go_val

In [5]: !{ba} -query query.fa -db {dbd}{dbn} -out {dbn}_{ba}_out.tab -evalue 1E-50 -num_threads 4 -max_hsps_per_
BLAST Database error: No alias or index file found for protein database [/Volumes/Bay3/Software/ncbi-bla
/db/uniprot_sprot_r2013_12] in search path [/Volumes/web/whale/fish546/pipeline_test_dir4::]

In [6]: !head -1 {dbn}_{ba}_out.tab
QPX_transcriptome_v1_Contig_2 sp|P52712|CBPX_ORYSJ 43.75 416 213 12 2095 869
7 3e-98 326

In [17]: #Translate pipes to tab so SPID is in separate column for Joining
!tr ' ' '\t' <{dbn}_{ba}_out.tab> {dbn}_{ba}_out2.tab

In [18]: !head -1 {dbn}_{ba}_out2.tab
QPX_transcriptome_v1_Contig_2 sp|P52712|CBPX_ORYSJ 43.75 416 213 12 2095 869
7 3e-98 326

In [8]: #Uploads formatted blast table to SQLshare; currently has generic name and meant to be temporary: Warning
!python {spd}singleupload.py -d scratchblast_out {dbn}_{ba}_out2.tab
...
In [9]: !python {spd}fetchdata.py -s "SELECT * FROM [sr320@washington.edu].[scratchblast_out]blast Left Join [sr
In [10]: !head -2 {dbn}_join2goslim.txt
...
In [11]: !python {spd}singleupload.py -d scratchjoin_slim {dbn}_join2goslim.txt
processing chunk line 0 to 18037 (0.0718240737915 s elapsed)
pushing uniprot_sprot_r2013_12_join2goslim.txt...
parsing 9A18D989...
finished scratchjoin_slim

In [12]: #Sets GO aspect
!python {spd}fetchdata.py -s "SELECT Distinct Column1 as query, Column3 as SPID, GOSlim_bin FROM [sr320@w
In [13]: !head justslim.txt
...
In [15]: from pandas import *
```

Idea Generation

Publication

Data Acquisition and Analysis

Publication

Publication

Publication

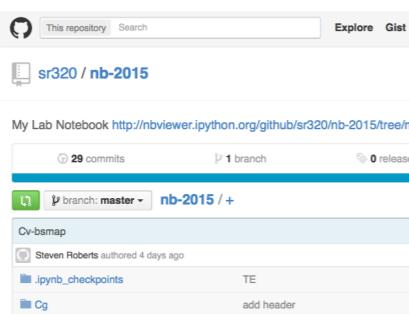


lab notebooks



wikis for everyone

IP[y]: IPython
Interactive Computing



This repository Search Explore Gist Blog Help

sr320 · •

Search or type a command

Explore Gist Blog Help

sr320 Contributions Repositories Public activity

Popular repositories

- ipython_nb My Lab Notebook 1 star
- LabDocs Roberts Lab Documents 1 star
- qdod Querying disparate oyster datasets 1 star
- dgo 0 stars
- fish310 0 stars

Joined on May 15, 2013

GitHub

[nbviewer](#) [FAQ](#) [IPython](#)

[ipython_nb](#) /

Name

- ◀ [sr320's repositories](#)
- 📁 [.ipynb_checkpoints](#)
- 📁 [examples](#)
- 📁 [fish546](#)
- 📁 [img](#)
- 📁 [tools](#)
- 📄 [BSMAP2MK_workflow.ipynb](#)
- 📄 [BSMAP2view_larvae.ipynb](#)
- 📄 [BSMAP2view_larvae_c.ipynb](#)
- 📄 [BiGill_CpG_Eensembl.ipynb](#)
- 📄 [BiGill_Gene_Methylation.ipynb](#)

Idea Generation

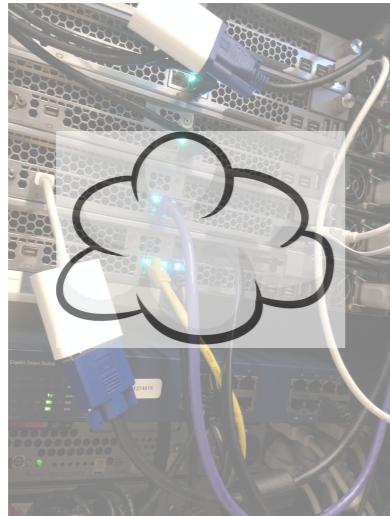
Publication

Data Acquisition and Analysis

Publication

Publication

Publication



universal challenges

archiving

metadata

version control

simple sharing

data management

self-discoverability

provenance

collaboration

Idea Generation

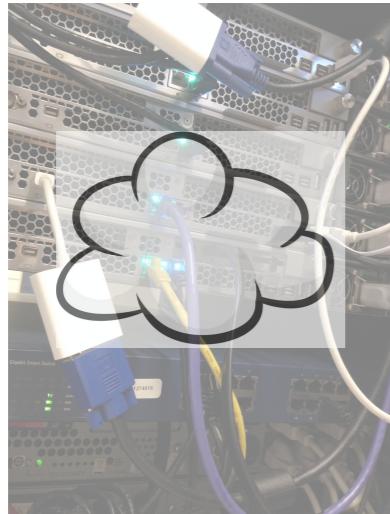
Publication

Data Acquisition and Analysis

Publication

Publication

Publication



universal challenges

archiving metadata

version control simple sharing

data management

self-discoverability provenance

collaboration

our current ~~solution~~ - analyses on local web server (NAS)

Idea Generation

Publication

Data Acquisition and Analysis

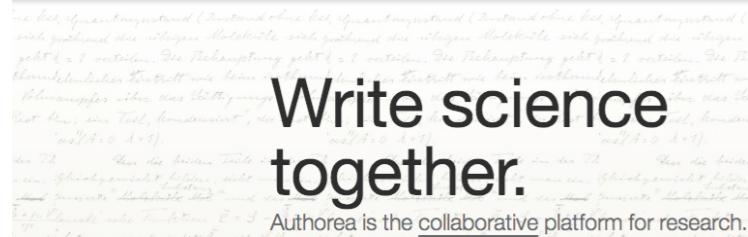
Publication

Publication

Publication



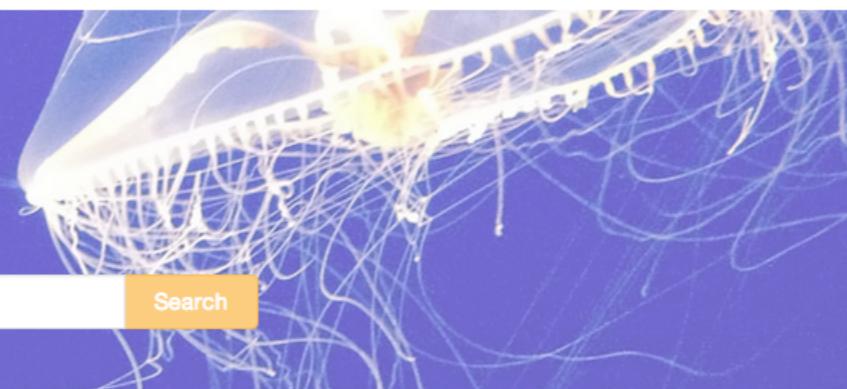
Authorea



PeerJ PrePrints - where biology is heading

Search PrePrints

Submit a PrePrint for free | Author instructions



Idea Generation Data Acquisition and Analysis



Keep everything. Share anything.

Authorea

Write science together.
Authorea is the collaborative platform for research.

PeerJ PrePrints - where biology is heading

Search PrePrints

Submit a PrePrint for free | Author instructions

Publication

Publication

Publication

Publication

JBLIC sr320 / qdod

Home

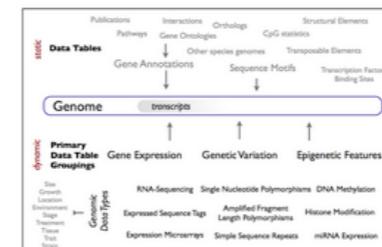
sr320 edited this page on Feb 7 · 23 revisions

This wiki serves as the *primary means for documentation* for project qdod: querying disparate oyster datasets.

In brief, data in the form of delimited text files is aggregated into SQLShare where they can be easily queried. The simplest way to start exploring the uses for this system is to interact with SQLShare using the simple web interface. All you need to get started is a Google account. Please see this page for a beginner's guide to SQLshare.

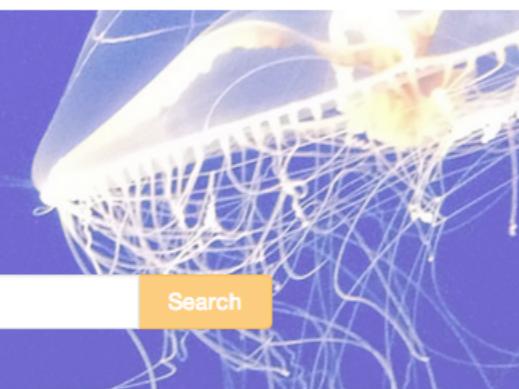
There is a python client for advanced users.

Below is schematic representation of the different types of datasets.



Reference Genome Sequence files are described on [this page](#).

bioRxiv
beta
THE PREPRINT SERVER FOR BIOLOGY



Steven Roberts

Associate Professor (Marine Biology)
University of Washington



Research statistics

12128
views

112
shares

cites
coming
soon

Active categories

- Marine Biology
- Molecular Biology
- Physiology
- Bioinformatics
- Genetics

Related authors

Emma Timmins-Schiffman
Claire Olson
Mackenzie Gavery
Samuel White
Halley Froehlich

Recently used tags

- Dabob Bay
- Fidalgo Bay
- OysterBay
- temperature data
- iPython
- thraustochytrid
- qpx
- clam
- quahog
- Gene regulation

Most popular uploads

42 uploads in total - [view all](#)

Herring Hepatic Transcriptome 34300 contigs.fa

dataset

4996 views
16 shares

Herring Testicular Transcriptome 31545 contigs.fa

dataset

780 views
18 shares

Bay scallop population structure on Cape Cod

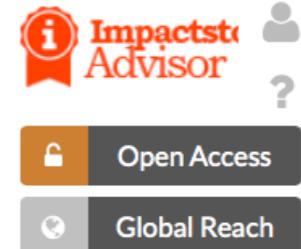
fileset

683 views
14 shares

Steven
Roberts



Associate Professor in the School of Aquatic and Fishery Sciences
at the University of Washington.



57 Articles

👁 11.6k views

💾 1.1k saves

🐦 81 tweet

Show tweets (79)

Sorting by default

Development of Genomic Resources for Pacific Herring through Targeted Transcriptome Pyrosequencing

(2012) Roberts, Hauser, Seeb et al.. *PLoS ONE*

🔒 read fulltext

highly cited

highly saved

highly discussed

highly viewed

viewed

RNA-Seq Reveals an Integrated Immune Response in Nucleated Erythrocytes

(2011) Morera, Roher, Ribas et al.. *PLoS ONE*

🔒 read fulltext

Highly saved by scholars

ed

This product has 44 Mendeley readers. That's more than 92% of 2012 on Impactstory. Click for details.

highly cited

highly saved

highly discussed

highly viewed

Is There a Relationship between DNA Methylation and Phenotypic Plasticity in Invertebrates?

(2012) Roberts, Gavery. *Frontiers in Physiology*

🔒 read fulltext

A context dependent role for DNA methylation in bivalves

(2014) Gavery, Roberts. *Briefings in Functional Genomics*

🔒 read fulltext

highly cited

highly discussed

highly viewed

saved

Predominant intragenic methylation is associated with gene expression characteristics in a bivalve mollusc

highly cited

highly discussed

highly viewed

saved

Steven Roberts



Associate Professor in the School of Aquatic and Fishery Sciences at the University of Washington.



Open Access

Global Reach

Overview

Map

Fans

articles (57)

datasets (18)

figures (2)

peer reviews (3)

posters (2)

slide decks (7)

software products (25)

theses (1)

webpages (3)



Selected works

Does DNA methylation facilitate phenotypic plasticity in marine invertebrates?

(2014) Slideshare.

view slides

highly viewed

Crassostrea gigas high-throughput bisulfite sequencing (larvae and sperm tissues)

(2014) figshare.

highly viewed

viewed

Key profile metrics

11.6k views on

57 articles

2.6k views on

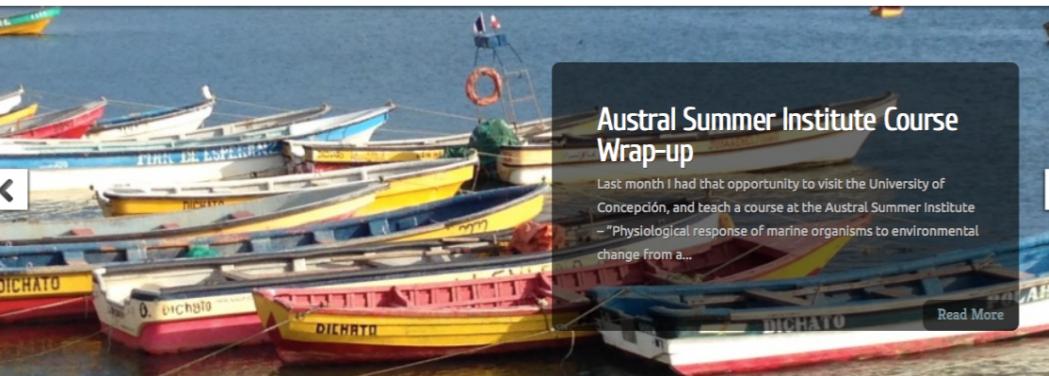
7 slide decks

1.1k saves on

57 articles

107 views on

3 peer reviews



Austral Summer Institute Course Wrap-up

Last month I had the opportunity to visit the University of Concepción, and teach a course at the Austral Summer Institute - "Physiological response of marine organisms to environmental change from a..."

[Read More](#)

Peer-Reviewed Publications

see also [preprints](#)

Timmins-Schiffman E, Coffey WD, Hua W, Nunn BL, Dickinson GH and Roberts SB. (2014). Shotgun proteomics reveals physiological responses to acidification in *Crassostrea gigas*. *BMC Genomics* 2014, 15:951 doi:10.1186/1471-2164-15-951  6

 Tweeted by 9

[See more details](#) | [Close](#)

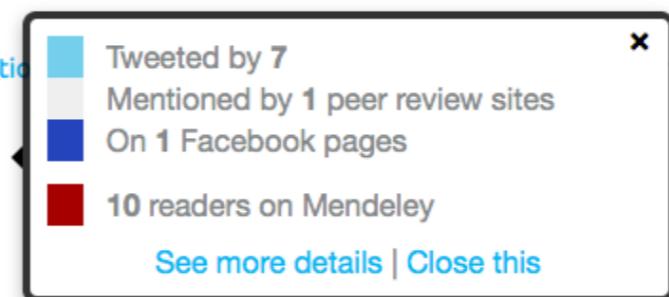
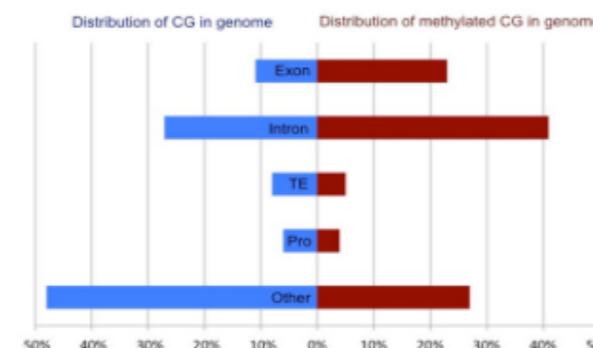
Olson CE and Roberts SB. (2014). Genome-wide profiling of DNA methylation and gene expression in *Crassostrea gigas* male gametes. *Journal of Invertebrate Physiology*. 5:224. doi: 10.3389/fphys.2014.0022  5

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](#))

 3

Gavery MR and Roberts SB. (2013) Predominant intragenic methylation in the genome of a bivalve mollusc. *PeerJ* 1:e215.

doi:10.7717/peerj.215  6



Garcia-Vedrenne AE, Groner M, Page-Karjian A, Siegmund G-F, Singhal S, Sziklay J and Roberts SB. (2013) Development of Genomic Resources for a Thraustochytrid Pathogen and Investigation of Its Virulence Mechanisms. *PLoS ONE* 8(9): e74196. doi:10.1371/journal.pone.0074196

 2

Storer CS, Quinn TP and Roberts SB. (2013) Physiological changes in brain tissue of senescent sockeye salmon. *Biogerontology*. doi:10.1007/s10522-013-0530-2

 3 readers on Mendeley

[See more details](#) | [Close this](#)

Burge CA, Mouchka ME, Harvell CD and Roberts SB. (2013) Immune response of the Caribbean sea fan, *Gorgonia ventalina*, exposed to an *Aplanochytrium* parasite as revealed by transcriptome sequencing. *Frontiers in Physiology* 4:180. doi:10.3389/fphys.2013.00180  15

Timmins-Schiffman EB, Nunn BL, Goodlett DR and Roberts SB. (2013) Shotgun proteomics as a viable approach for biological discovery in the Pacific oyster.

Conservation Physiology. doi:10.1093/conphys/cot009  3



Altmetric

robertslab.info



Altmetric

 ## Peer-Reviewed Publications

see also *preprints*

Timmins-Schiffman E, Coffey WD, Hua W, Nunn BL, Dickinson GH and Roberts SB. (**2014**). [Shotgun proteomics reveals physiological response to ocean acidification in *Crassostrea gigas*] (<http://www.biomedcentral.com/1471-2164/15/951>) 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] (<http://journal.frontiersin.org/Journal/10.3389/fphys.2014.00224/abstract>) Frontiers in Physiology. 5:224. doi: 10.3389/fphys.2014.00224

Gavery MR and Roberts SB. (**2014**). [A context specific role for DNA methylation in bivalves] (<http://bfg.oxfordjournals.org/content/13/3/217>) Briefings in Functional Genomics. doi:10.1093/bfgp/elt054 ([pdf] (<http://eagle.fish.washington.edu/cnidarian/Briefings%20in%20Functional%20Genomics-2014-Gavery-217-22.pdf>))

Gavery MR and Roberts SB. (**2013**). [Predominant intragenic methylation is associated with gene expression characteristics in a bivalve mollusc] (<https://peerj.com/articles/215/>) PeerJ 1:e215. doi:10.7717/peerj.215

Garcia-Vedrenne AE, Groner M, Page-Karjian A, Siegmund G-F, Singhal S, Sziklay J and Roberts SB. (**2013**). [Development of Genomic Resources for a thraustochytrid Pathogen and Investigation of Temperature Influences on Gene Expression] (<http://www.plosone.org/article/info%3Adoi%2F10.1371%2Fjournal.pone.0074196>) PLoS ONE 8(9): e74196. doi:10.1371/journal.pone.0074196

Storer CS, Quinn TP and Roberts SB. (**2013**). [Quantitative PCR analysis used to characterize physiological changes in brain tissue of senescent sockeye salmon] (<http://link.springer.com/article/10.1007/s10522-013-9448-1>) Biogerontology. doi:10.1007/s10522-013-9448-1 ([pdf] (<https://dl.dropboxusercontent.com/u/115356/docs/Storer2013.pdf>))

Burge CA, Mouchka ME, Harvell CD and Roberts SB. (**2013**). [Immune response of the Caribbean sea fan, *Gorgonia ventalina*, exposed to an *Aplanochytrium* parasite as revealed by transcriptome sequencing] (http://www.frontiersin.org/invertebrate_physiology/10.3389/fphys.2013.00180/abstract) Frontiers in Physiology 4:180. doi:10.3389/fphys.2013.00180

Timmins-Schiffman EB, Nunn BL, Goodlett DR and Roberts SB. (**2013**). [Shotgun proteomics as a viable approach for biological discovery in the Pacific oyster] (<http://conphys.oxfordjournals.org/content/1/1/cot009.full.pdf+html>) Conservation Physiology. doi:10.1093/conphys/cot009

Peer-Reviewed Publications

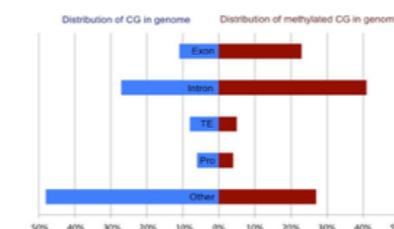
see also [preprints](#)

Timmins-Schiffman E, Coffey WD, Hua W, Nunn BL, Dickinson GH and Roberts SB. (2014). [Shotgun proteomics reveals physiological response to ocean acidification in *Crassostrea gigas*](#) BMC Genomics 2014, 15:951 doi:10.1186/1471-2164-15-951 Altmetric 6

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.2014.00222 Altmetric 5

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 3)

Gavery MR and Roberts SB. (2013) [Predominant intragenic methylation is associated with gene expression characteristics in a bivalve mollusc](#) PeerJ 1:e215. doi:10.7717/peerj.215 Altmetric 6

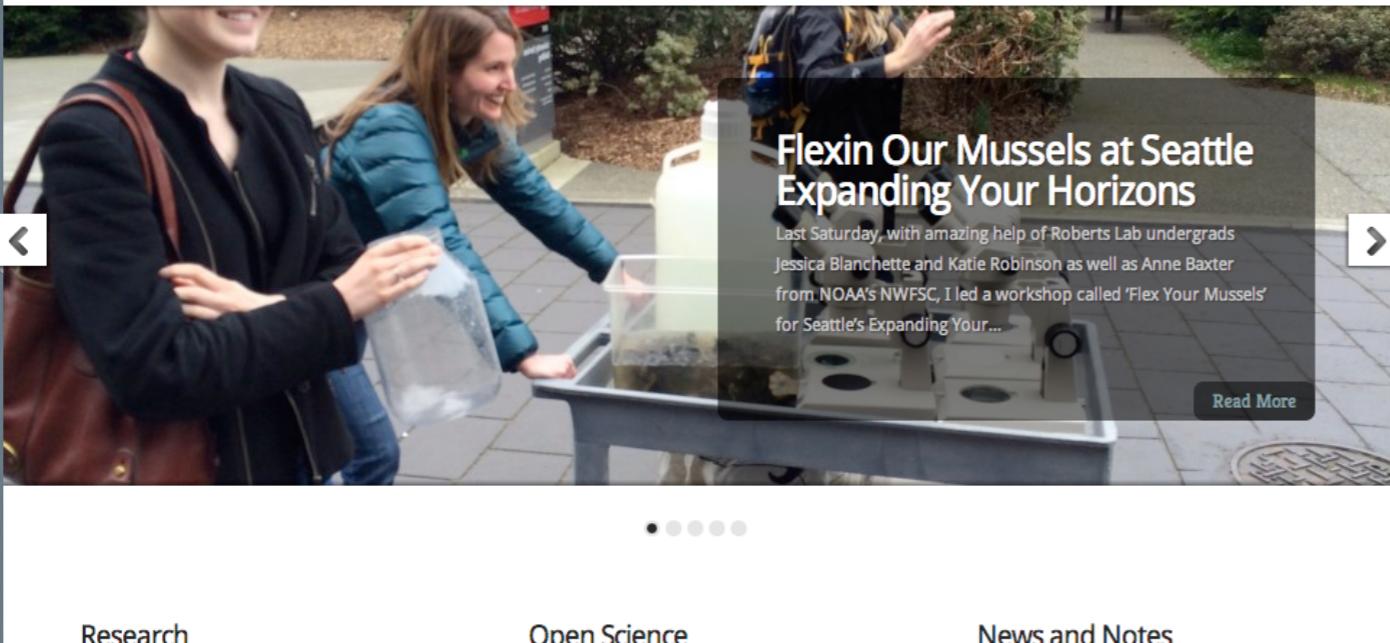


Garcia-Vedrenne AE, Groner M, Page-Karjian A, Siegmund G-F, Singhal S, Sziklay J and Roberts SB. (2013) [Development of Genomic Resources for a thraustochytrid Pathogen and Investigation of Temperature Influences on Gene Expression](#) PLoS ONE 8(9): e74196. doi:10.1371/journal.pone.0074196 Altmetric 2

Storer CS, Quinn TP and Roberts SB. (2013) [Quantitative PCR analysis used to characterize physiological changes in brain tissue of senescent sockeye salmon](#) Biogerontology. doi:10.1007/s10522-013-9448-1 ([pdf])

Burge CA, Mouchka ME, Harvell CD and Roberts SB. (2013) [Immune response of the Caribbean sea fan, *Gorgonia ventalina*, exposed to an *Aplanochytrium* parasite as revealed by transcriptome sequencing](#) Frontiers in Physiology 4:180. doi:10.3389/fphys.2013.00180 Altmetric 15

Timmins-Schiffman EB, Nunn BL, Goodlett DR and Roberts SB. (2013) [Shotgun proteomics as a viable approach for biological discovery in the Pacific oyster](#) Conservation Physiology. doi:10.1093/conphys/cot009 Altmetric 3



Research

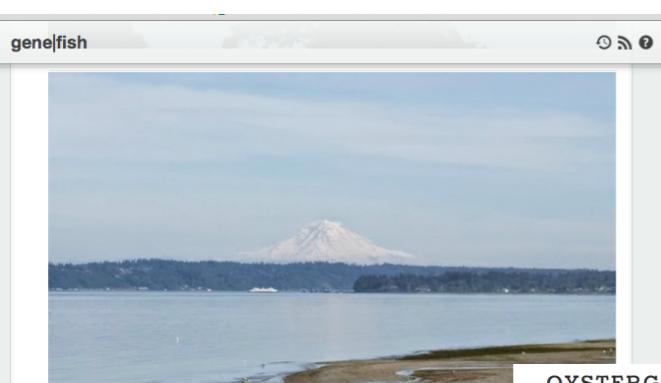
Research in our lab focuses on characterizing physiological responses of

Open Science

We practice open science with lab members maintaining online electronic lab

News and Notes

- Congrats to Claire Olson – recipient of College travel award! [5/14]



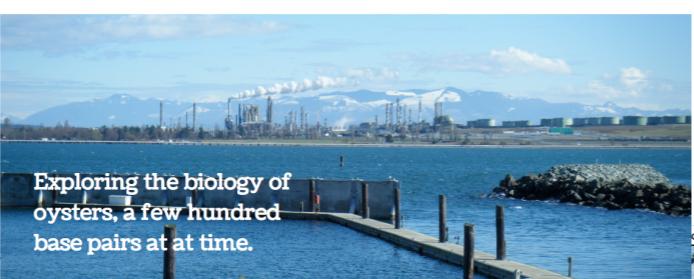
from Jake Heare Research Central <http://ift.tt/1oUbogs>

by Jake Heare

via [IFTTT](#)

#IFTTT #Jake Heare Research Central #jake #ons #notebook
① 1 week ago CO

② A Wrap-up of the 2014 eScience in the Cloud Workshop - Azure 4 Research - Site Home MSDN Blogs



About this Site

This site is intended to serve as a portal for sharing research data, resources, and information as it pertains to active research efforts that intersect the fields of shellfish genomics and environmental science. The site currently highlights two species, a photo album and a blog.

qdod 2.0

As part of an ongoing effort to make it easier to Query Disparate Oyster Datasets we have published a new set of documentation for the project. In brief, data in the form of delimited text files is aggregated into SQLShare where they can be easily queried.

1 developed to serve as a portal for information on active research in ocean acidification within the School of Aquatic and Fishery Sciences at the University of Washington. Project highlights are presented with occasional posts from the scientists involved. In general most of our research focuses on how changing ocean conditions impact marine invertebrates.

PROJECT: OCEAN ACIDIFICATION AND EMERGING DISEASES IN THE PACIFIC NORTHWEST

The goal of this project is to characterize the factors that threaten the aquaculture industry and wild shellfish. The primary approaches include a series of laboratory experiments and environmental sampling. The research effort has been developed to test the following hypothesis: Environmental stressors (elevated temperature and carbon dioxide) will enhance disease expression and reduce overall survival rates. More specifically we are testing the impact of single and multiple biotic and abiotic



[Wiki Home](#)
[Projects](#)
[Recent Changes](#)
[Pages and Files](#)
[Members](#)
[Search](#)



Lab Notebooks

Sam's Notebook
Mac's Notebook
Emma's Notebook
Claire's Notebook
Steven's Notebook
Halley's Notebook
Katie's Notebook
Brent's Notebook
Doug's Notebook
Charles' Notebook
Jessica's Notebook
Hannah's Notebook
Jake's Notebook
Yanouk's Notebook

Featured Pages
[crassostreome](#)

home

This wiki has been developed as a resource for lab personnel and students to access information and publish research activities using an [open notebook science](#) based system. All lab notebooks can be accessed via the side menu. The Roberts Lab is in the [School of Aquatic and Fishery Sciences](#) within the [College of Environment](#) at the [University of Washington](#). More information can be found concerning [research](#), [personnel](#), and [outreach](#) on the [Roberts Lab Official Webpage](#).

Laboratory Reference Material

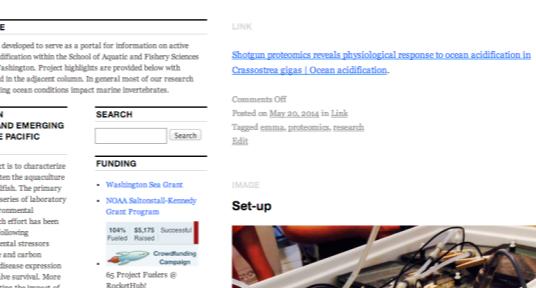
- [Data and Resource Sharing Plan](#)
- [Laboratory Protocols](#)
- [Emergency Contact Information](#)
- [UW Lab Safety Manual](#)
- [Code Repository](#)
- [UW Biosafety Manual](#)
- [Chemical Inventory](#)

Lab Activity and Communication

- [Lab Meetings](#)
- [IPUS: Information for Prospective Undergraduate Students](#)
- [Lab Calendar](#)

Data Repositories

- [The Eagle](#)
- [CLC Genomics Server \(password protected\)](#)
- [Primer Database](#)
- [NGS Library Info](#)
- [crassostreome](#)



Open Science Philosophy

Transparency with limited effort

will try just about anything

Biology

Environment

Molecular

Data Analysis

eScience

iPlant Galaxy

Notebooks

Rationale

Platforms

Open Science

Data

everything else...

Biology

Environment

Molecular

Data Analysis

eScience

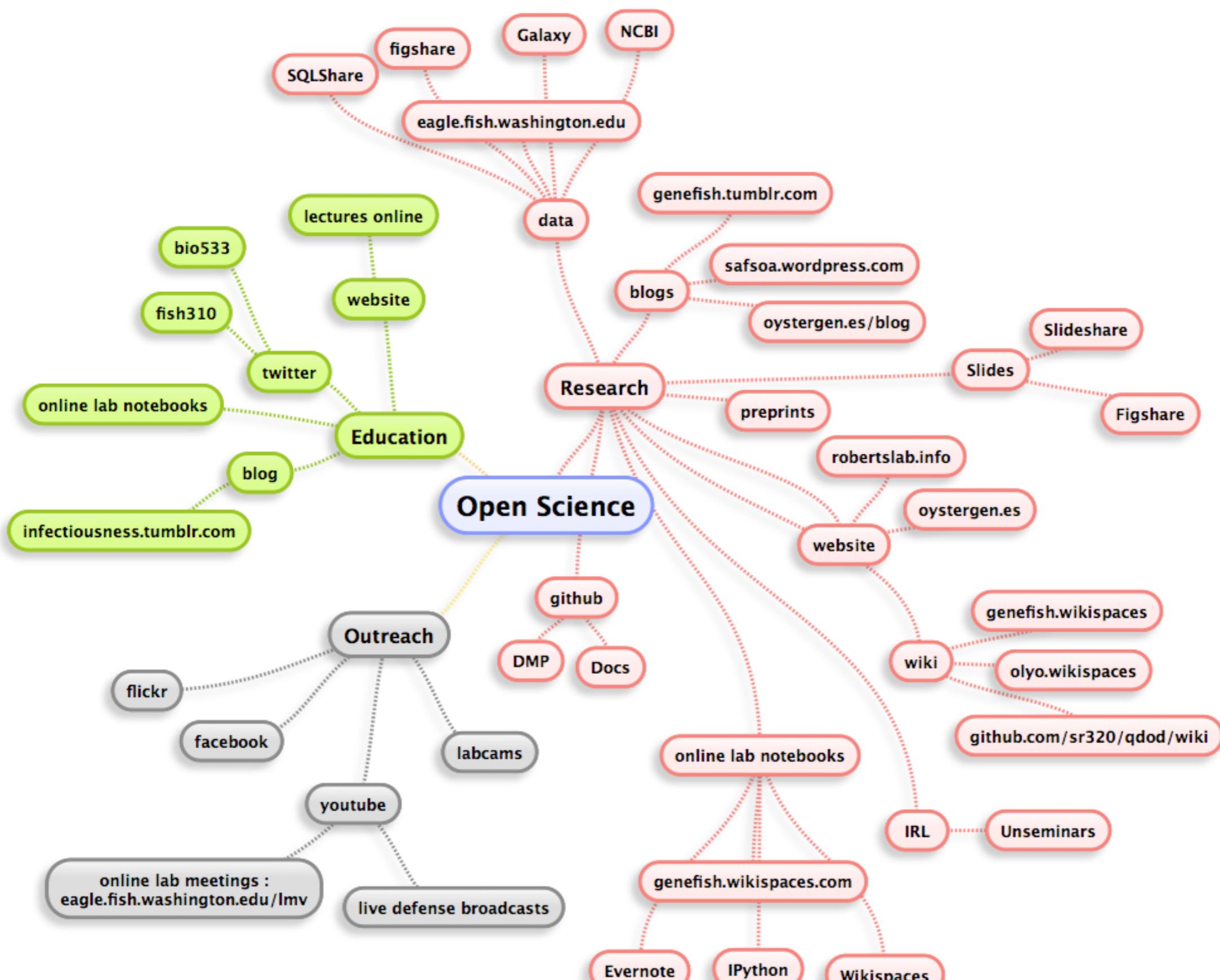
iPlant Galaxy

Notebooks

Rationale

Platforms

Open Science



everything else...

BioCode's Notes

Biology

Computational Proteomics & Bioinformatics

Home Software & Tools Programming Tips Core Manuscript Polls E

Environment

Wednesday, 19 February 2014

In the ERA of science communication, Why you need Twitter, Professional Blog and ImpactStory?

Molecular

Yasset Perez-Riverol en Wednesday, February 19, 2014

Data Analysis

eScience

iPlant Galaxy

Notebooks

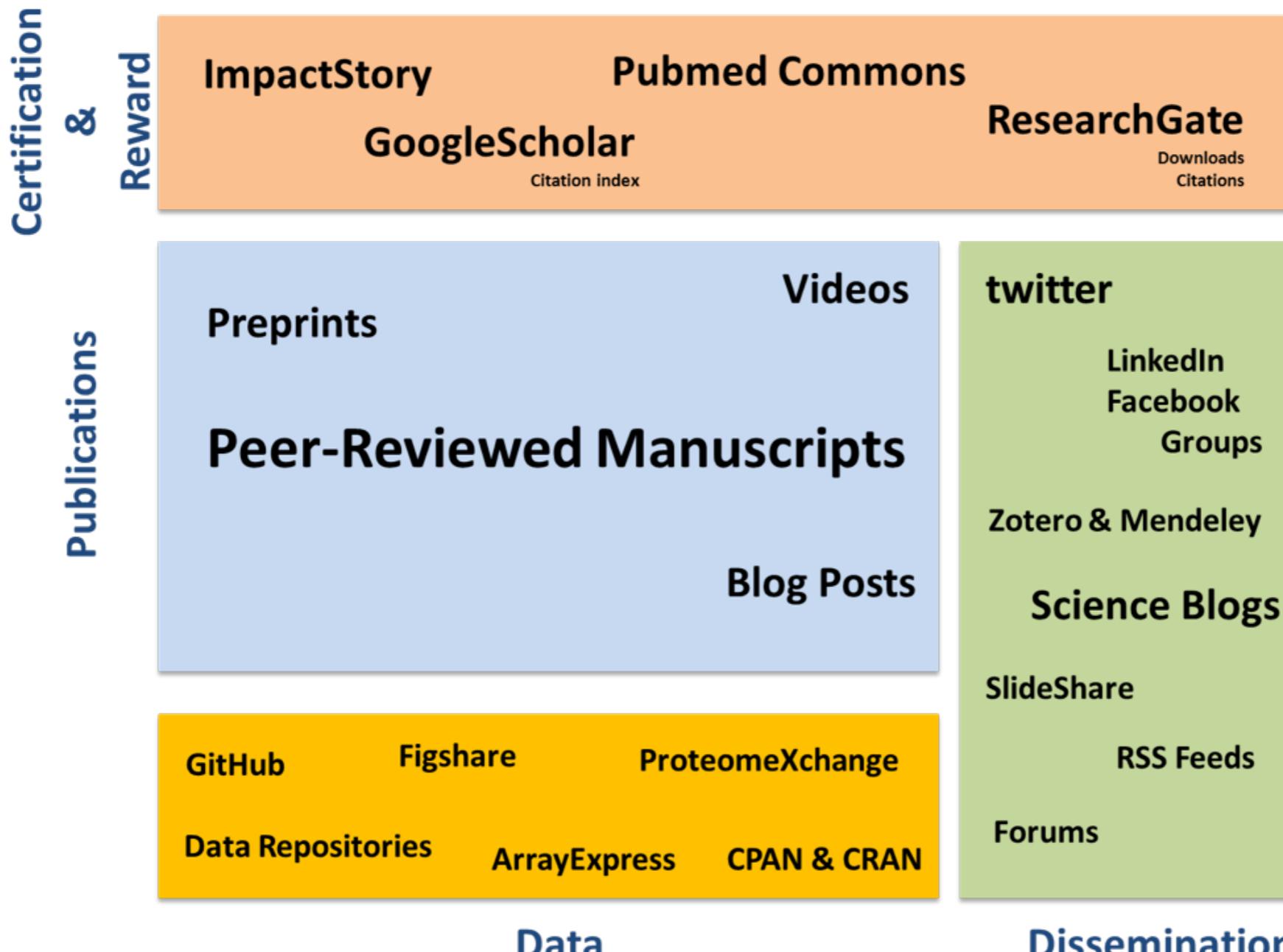
Rationale

Platforms

Open Science

Data

everything else...



Data

metrics

FigShare

Steven Roberts @sr320 · May 8

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



Steven Roberts @sr320 · May 8

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

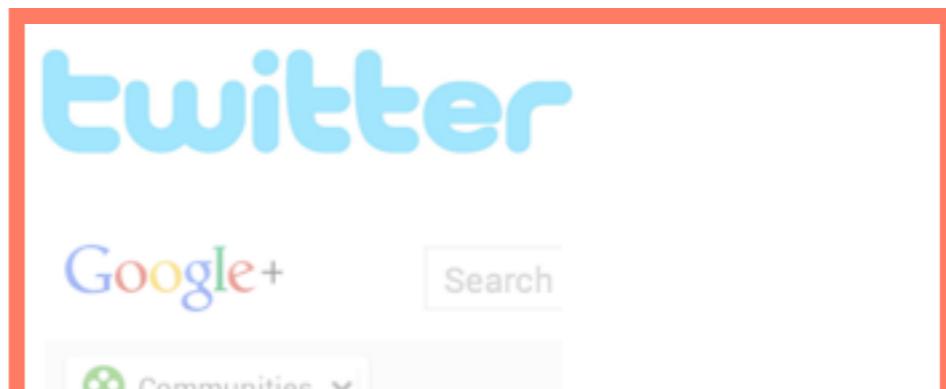


Steven Roberts @sr320 · May 8

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



Twitter



where to share ?

Post	
Roberts Lab shared	
#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

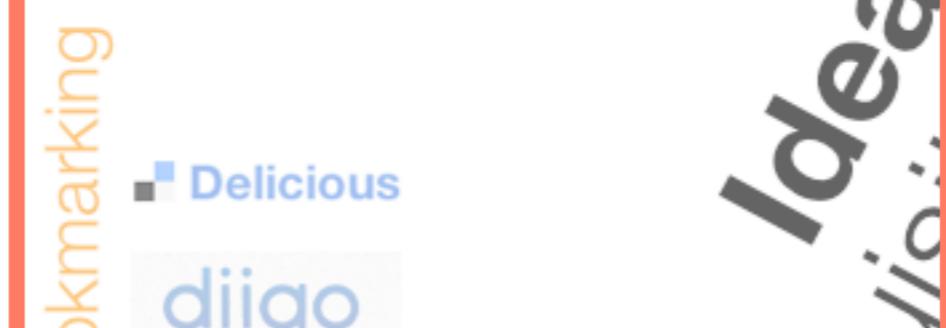
111

Views

24

Downloads

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

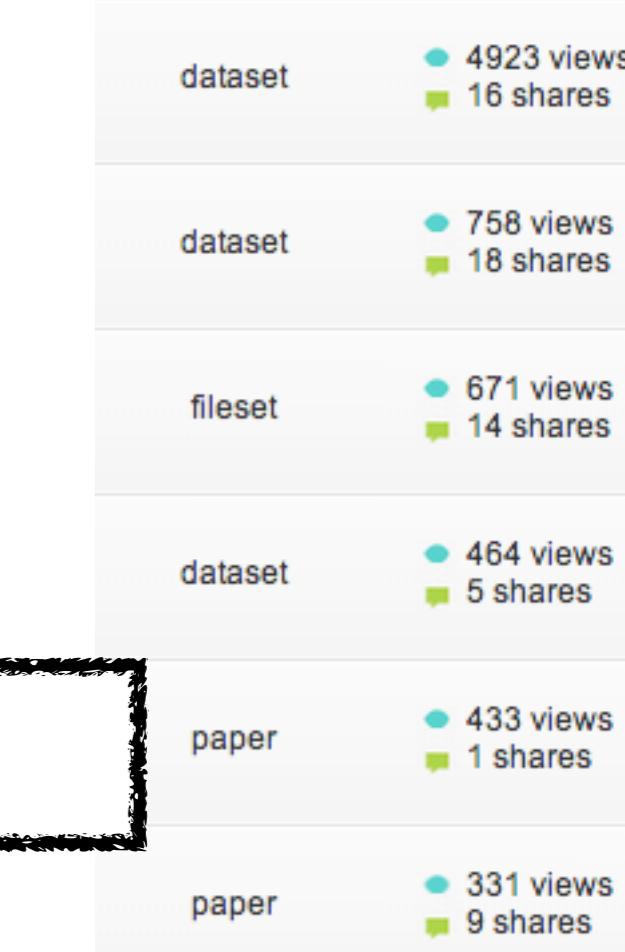


PeerJ altmetrics

Top referrals unique visitors

news-oceanacidification-icc.org

18



Web Analytics



metrics

FigShare

Steven Roberts @sr320 · May 8

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



Twitter

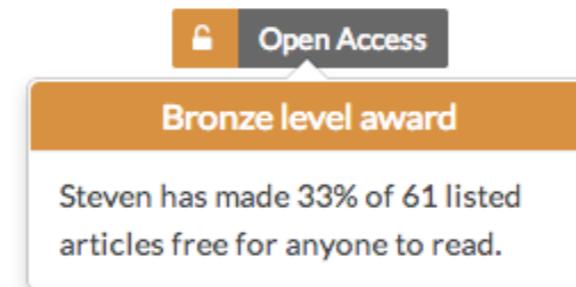
Steven Roberts @sr320 · May 8

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



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.



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](#)

PeerJ altmetrics

Top referrals unique visitors

news-oceanacidification-icc.org

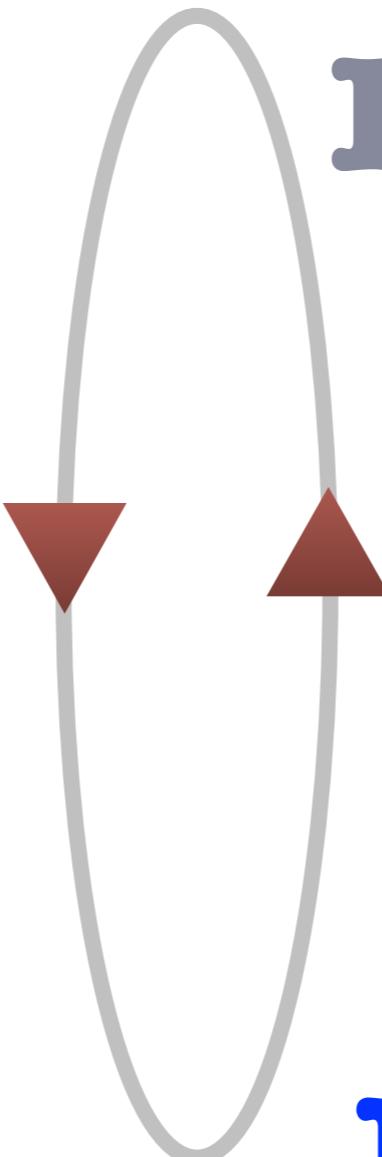
18



Open Science

Idea Generation
Data Acquisition
and Analysis

Publication
Publication
Publication
Publication



Getting Information

The stated mission of the University of Washington is “the advancement, *dissemination* and preservation of knowledge.”

Sharing Information

Any metric to inform on efficiency is valuable

Lots of stuff

My recommendations

baby steps...?

thanks!

Steven Roberts

sr320@uw.edu

robertslab.info

@sr320