

Interconnections in The Open Ecosystem

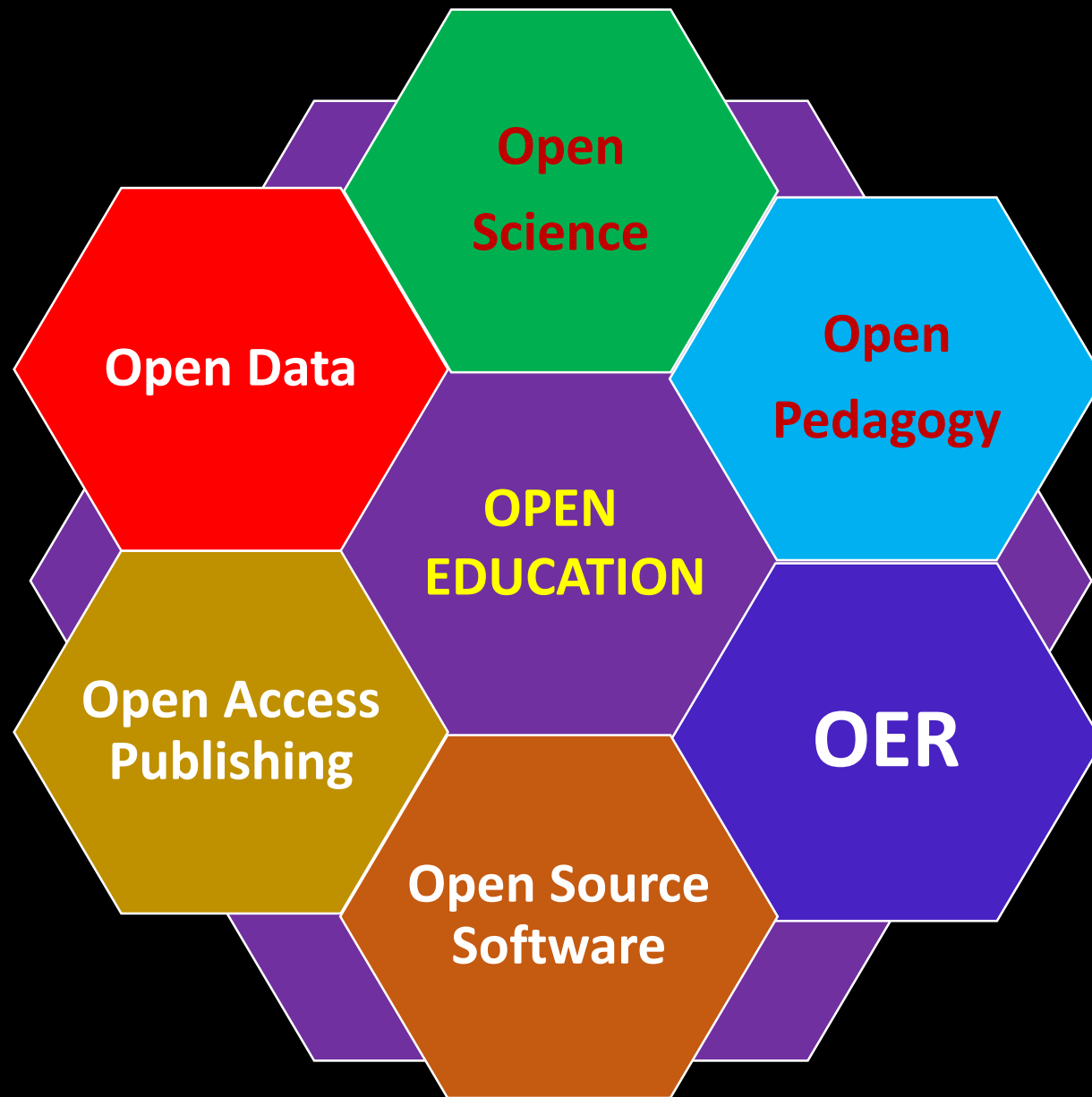
Karen Cangialosi

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Keene State College
Keene, NH USA

@karencang
#QBioEd19



International Year of the Reef 2008, poster by NOAA



OpenStax Biology text

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Biology

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Biology is designed to cover the scope and sequence requirements of a typical two-semester biology course for science majors. The text provides comprehensive coverage of foundational research and core biology concepts through an evolutionary lens. Biology includes rich features that engage students in scientific inquiry, highlight careers in the biological sciences, and offer everyday applications. The book also includes clicker questions to help students understand—and apply—key concepts.

Senior Contributing Authors

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Yael Avissar, Rhode Island College

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Student Loan Debt Statistics In 2019: A \$1.5 Trillion Crisis

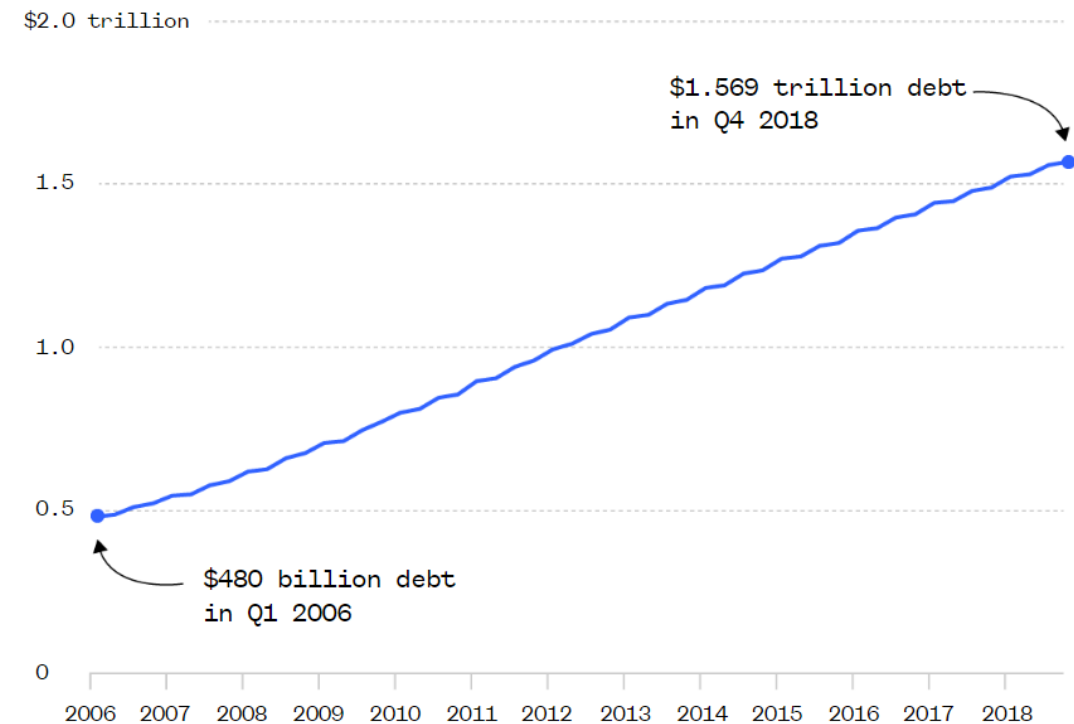


Zack Friedman Senior Contributor @
Personal Finance



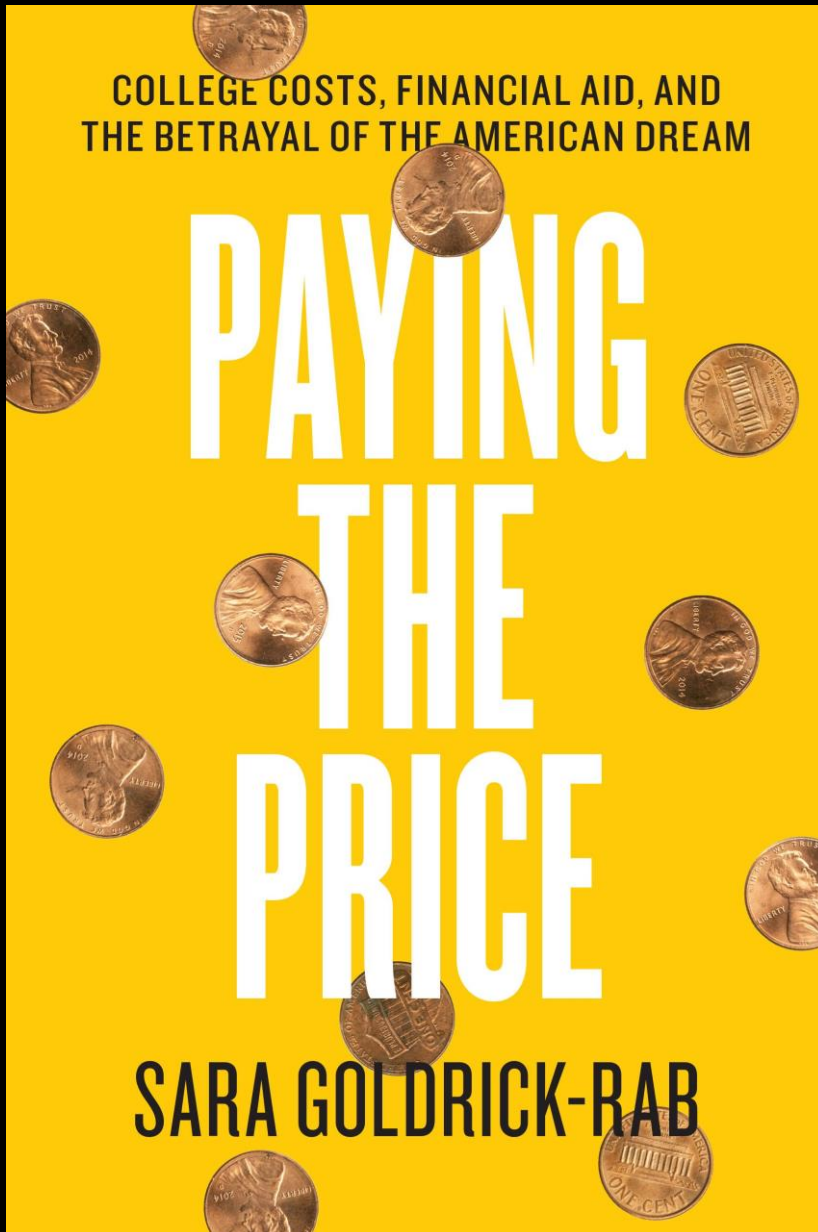
Through the roof: Student loan debt in the U.S.

The amount of student loan debt in the United States has shot up over 200 percent since 2006.



Source: Federal Reserve

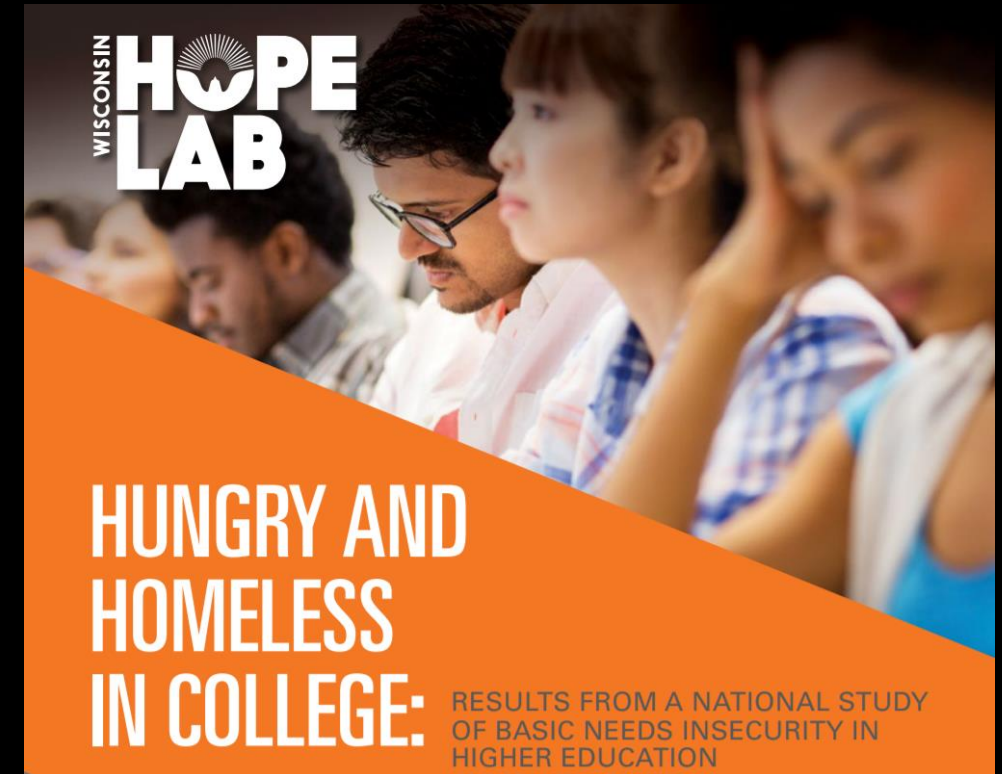
Chart: Robin Muccari / NBC News



- In a study of 3,000 public college/university students, HALF of the students left without a degree, but with crippling debt.
- 23% of low-income sophomores worked a job between the hours of 10:00pm and 8:00am.
- A year at a public university ranges from 16-25% of a middle-class family's annual income.

Survey of **33,000** students at 74 community colleges in 24 states

- 67% are Food Insecure
- 50% are Housing Insecure
- 13-14% are Homeless
- Prevalent in all regions of the country



Sara Goldrick-Rab, Jed Richardson and Anthony Hernandez, 2017, the Wisconsin HOPE lab

<http://wihopelab.com/publications/Hungry-and-Homeless-in-College-Report.pdf>

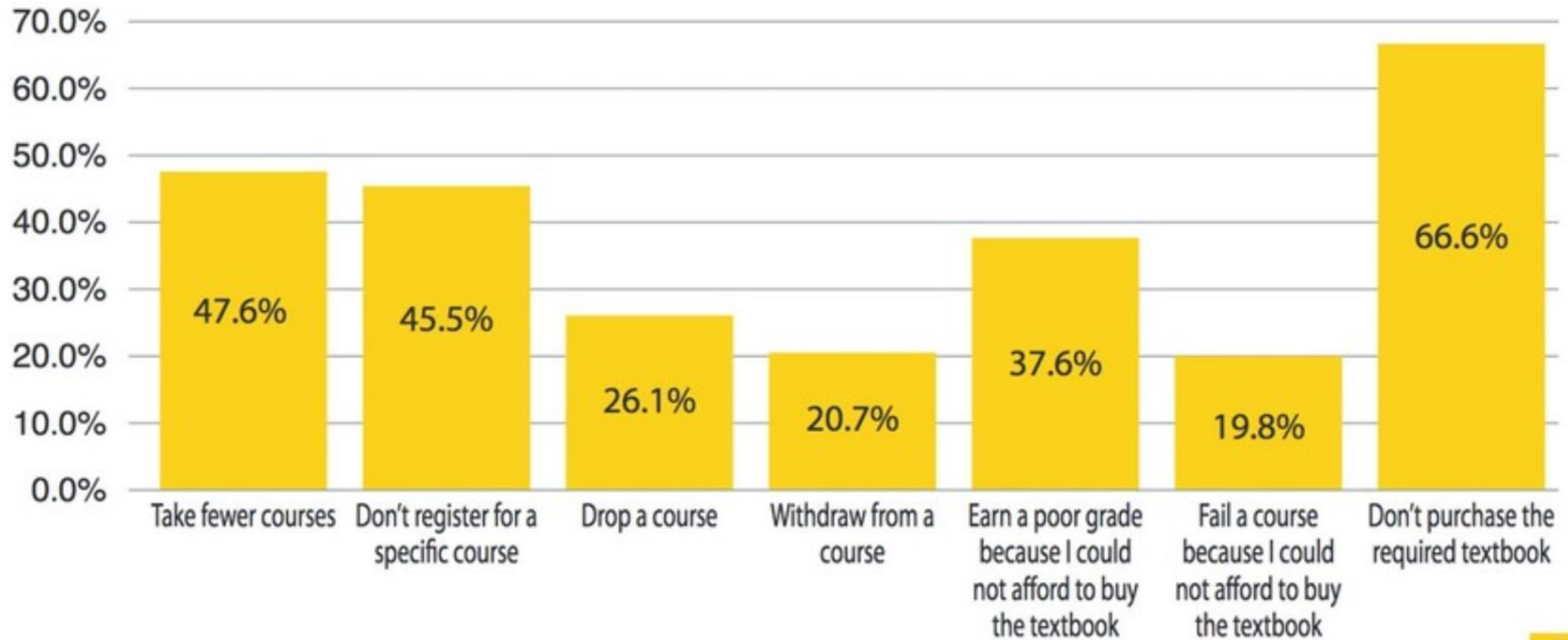
A textbook case of price-gouging

America, % increase



Source: Bureau of Labour Statistics

Chart 1: Impact of Textbook Costs on Students





Open Educational Resources by Ron Mader [CC BY 2.0]

- Free



Students in Courses using OER compared to non-OER

- Increase in course throughput rates
- Improve end-of-course grades and decrease DFW rates for all students
- Reduction in DFW rates for minority and Pell eligible students
- Lower course withdrawal rates
- Higher % of students completing course with a C or better

Compilation of results from many studies from colleges/universities in the United States and Canada

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Course Shells



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Homework Exercises



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The Many Flavors of OER

- “Traditional” OER as textbook (e.g. OpenStax)
- Ancillary materials: test banks, etc.
- Curated links on websites
- Open Google Docs
- Open Videos
- Case studies
- Open Labs, simulations, animations
- Open Source software/tools
- Open Access published articles
- Open Datasets
- Open Lab notebooks, Methods repositories
- and more...

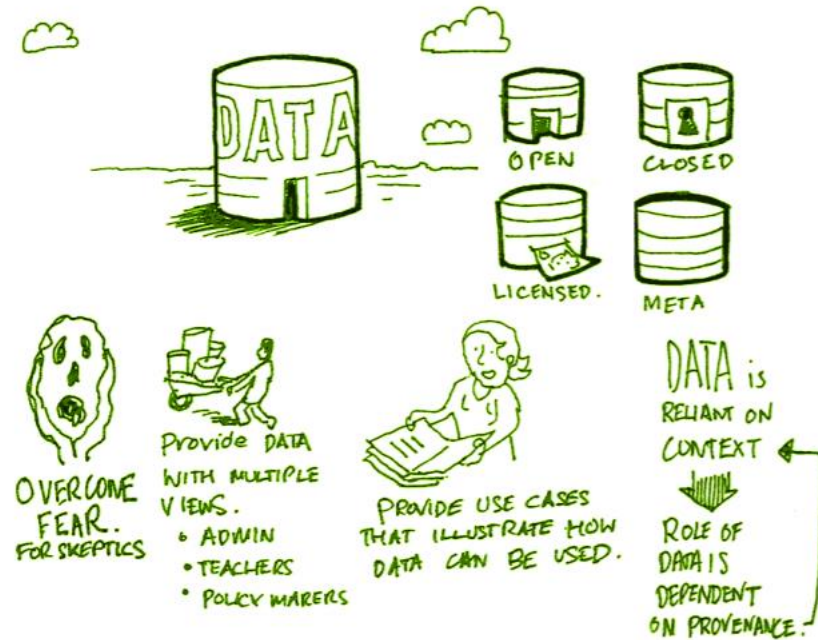


Popsicles by Colored Pencil Magazine [CC BY 2.0]

Open Data as OER

Open Data as Open Educational Resources

Case studies of emerging practice



Edited by Javiera Atenas & Leo Havemann

CDC Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

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CDC A-Z INDEX

National Center for Health Statistics

National Health and Nutrition Examination Survey

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What's New +
Questionnaires, Datasets, and Related Documentation -
Survey Methods and Analytic Guidelines
Search Variables
All Continuous NHANES +
NHANES 2017-2018 +
NHANES 2015-2016 +
NHANES 2013-2014 +
NHANES 2011-2012 +
NHANES 2009-2010 +
NHANES 2007-2008 +
NHANES 2005-2006 +
NHANES 2003-2004 +

NHANES Questionnaires, Datasets, and Related Documentation

SURVEY METHODS
Plan & Operations, Sample Design, Estimation & Weighting Procedures, Analytic Guidelines, etc.

SEARCH VARIABLES
Simple keyword search for Continuous NHANES (1999 and on) variables

Continuous NHANES

NHANES 2017-2018	NHANES 2015-2016	NHANES 2013-2014	NHANES 2011-2012	NHANES 2009-2010	NHANES 2007-2008
NHANES 2005-2006	NHANES 2003-2004	NHANES 2001-2002	NHANES 1999-2000		

“Open Data is an umbrella term describing openly-licensed, interoperable, and reusable datasets which have been created and made available to the public...”

- Javiera Atenas and Leo Havemann

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Check out some of the resources shared by our partners and users.

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Working with OER provides unique teaching and learning opportunities.

- At Keene State College, we use OER and other free resources for nearly ALL Biology courses. We have collectively saved our students about \$250,000 over the last 4 years.
- Many Colleges and Universities have already saved students MILLIONS of dollars in textbooks costs.

Free as in “Free Beer”



Photo by Elliot Bledsoe [CC BY 2.0]

GENETICS

BASIC GENETICS

PIGEON BREEDING:
GENETICS AT WORK

VARIATION +
SELECTION & TIME

EPIGENETICS

GENETIC SCIENCE

CELL BIOLOGY

HUMAN HEALTH

METABOLISM: FROM FOOD TO FUEL

NORMAL CELLS

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BEHAVIORAL **ECOLOGY**



Shaped by Selection

Just like morphology or physiology, an organism's behavioral patterns are influenced by its genetics and can therefore evolve. Consider for example how selective breeding has led to behaviorally specialized breeds of dogs (e.g. hunting, herding, or guarding). The study of how behaviors are shaped by selection is the field of behavioral ecology. This discipline typically explores how various behaviors affect the relative fitness of individuals in a population. In other words, it asks "why does this behavior exist?" In this section, there are models that examine how various behaviors affect such things as foraging success and survival.

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“Using OER the same way we used commercial textbooks misses the point. It’s like driving an airplane down the road.” – David Wiley

FREE as in Freedom (the 5 R's)

- Reuse
- Revise
- Remix
- Redistribute
- Retain

The logo for Open Educational Resources (OER) is displayed in large, bold, sans-serif capital letters. The letter 'O' is red, the 'E' is yellow, and the 'R' is blue. The letters are set against a solid black background.

OER



Open Educational Resources by Ron Mader [CC BY 2.0]

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OER



[CC 0] modified by K. Cangialosi

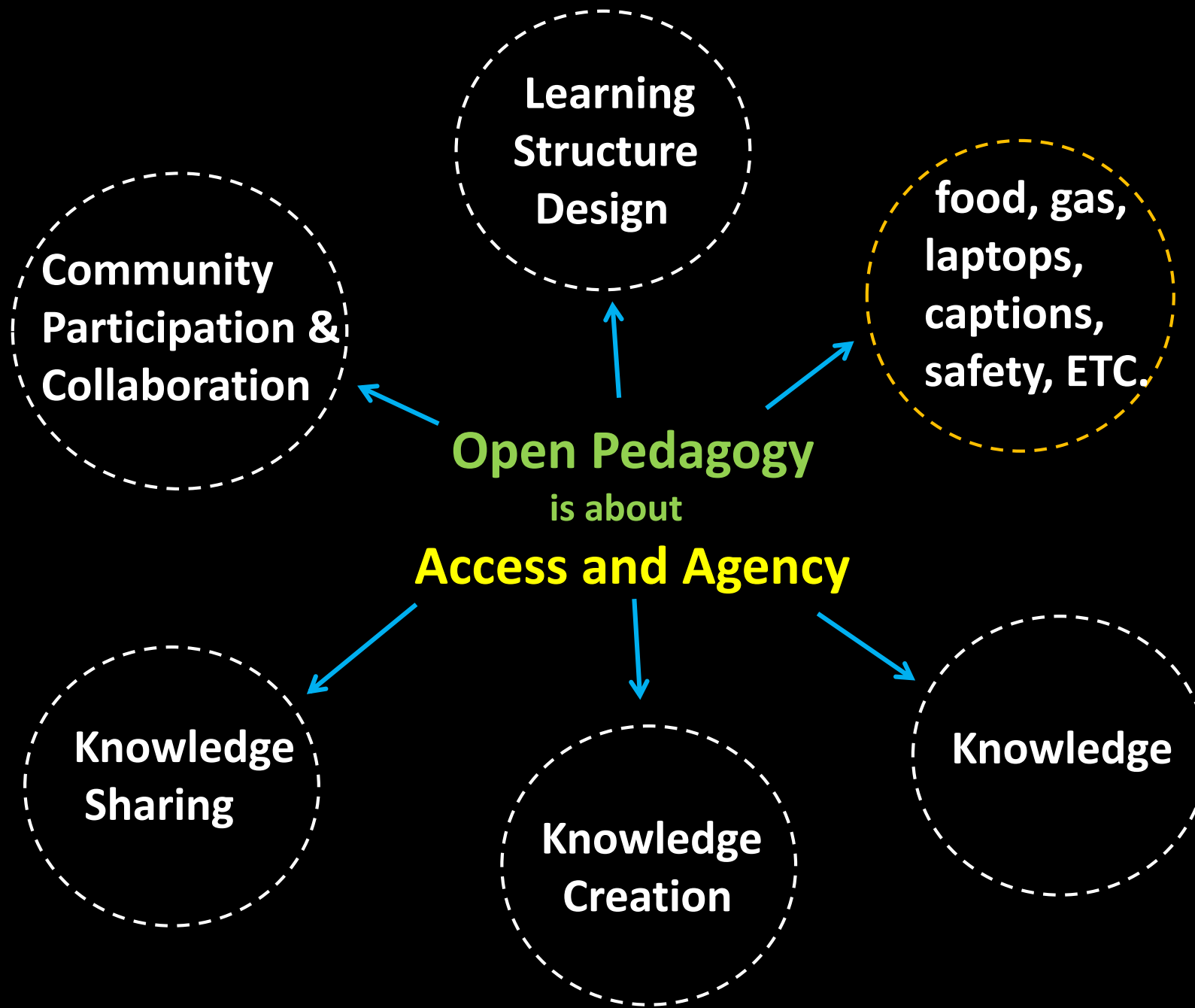


The process by K. Cangialosi CC BY 4.0

Open Pedagogy

- Learners contribute to, not just consume knowledge
- Community and collaboration
- Connection to the wider public
- Student Agency, Learner-driven
- Critical approach to the use of tools and technology





Student-Created OER

Environmental ScienceBites

Edited by Kylieenne A. Clark, Travis R. Shaul, and Brian H. Lower

Sydney R. Morrison, Jaymes T. StClair, Levi J. Cramer, Alyssa M. Jones, Brittany L. Sulainis, Jeremie E. Beaverstock, Amanda L. Varcho, Kelly E. Peterson, Chayli T. Buenger, Wyatt T. Susich, Chris Ebersole, Brandon S. Wator, John A. Zagar, Jace A. Ball, Lee Seitz, Benjamin W. Schumann, Mason F. Ye, Alyssa M. Zearley, Cain W. Crouse, Allyson E. Loparo, Rika L. Bailey, Emily C. Mills, Andrew T. Wood, Lydia F. Bednarski, Samantha K. Runser

This book was written by undergraduate students at The Ohio State University (OSU) who were enrolled in the class Introduction to Environmental Science. The chapters describe some of Earth's major environmental challenges and discuss ways that humans are using cutting-edge science and engineering to provide sustainable solutions to these problems.

 READ



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Introduction

I. Coral Reefs and
Diversity

+

II. Environmental
Threats

–

9. Plastics in Our Oceans

10. Ocean Acidification

11. Harmful Algal Blooms

12. Coral Bleaching

13. The Warming of Our
Oceans

14. The Effect of Oil Spills on
Marine Life

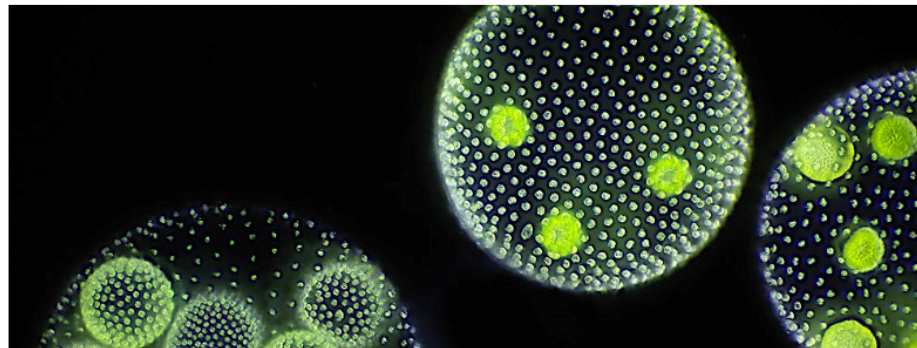
15. Unsustainable Fishing

III. Reef Conservation

+

II. Harmful Algal Blooms

Ever been told to only eat shellfish during the months that have the letter “R”, (September–April)? Well this rule is actually pretty important for keeping the health of people safe and to allow for many species of shellfish to repopulate. But why are the other months of the year not safe for people to eat shellfish? In short its because of the algae that grow during this time of year and as ocean temperatures rise. During these specific months of warmer weather, billions upon billions of these microorganisms start to take over our oceans and can have many consequences on us.



Students can create ancillary materials for OER textbooks

Rajiv Jhangiani, Ph.D.

Open Education, SoTL, Psychology

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KEYNOTES & INVITED TALKS ▾

OPEN PEDAGOGY NOTEBOOK

BLOG

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🏠 > [Pedagogy](#) > Why have students answer questions when they can write them?

Why have students answer questions when they can write them?

👤 [Rajiv Jhangiani](#) ⌚ [January 12, 2017](#) 📁 [Pedagogy](#), [Students](#)

I recently trialled a new assignment in my Social Psychology class: During each of the 10 weeks when there was no scheduled exam I asked my students to write multiple-choice questions. That's right, they *wrote* questions instead of merely answering them.

From a pedagogical perspective, I really wanted my students to achieve a deeper level of understanding (e.g., the level it takes in order to craft three plausible distractors). However, this assignment also served a pragmatic purpose in that [the open textbook that I use for this course](#) (and that I helped revise) does not yet have a readymade question bank. By asking my students to craft and peer-review multiple-choice questions based on the concepts covered that week (and scaffolding this process over the semester), I considered I had a budding [open pedagogy](#) project on my hands.

Here's how it went:



Questions by Alan Levine

OER doesn't have to look like a typical textbook

Invertebrate Zoology

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Our Invert Zoo Textbook and Student Sites

Posted on [August 3, 2017](#) by [karencang](#)



Students enrolled in BIO 333 Invertebrate Zoology in the Fall 2017 semester created this resource. It is a perpetual work in progress, we all look forward to future additions and improvements.

All Fall 2017 [BIO 333 student sites and posts](#)

Authors:

Devon Audibert, Marisa Benjamin, Jessica Comeau, Doug Ericson, Simone McEwan, Alana Olendorf, Tia Rickard, Jennifer Rosado, Josh Stevens, Adam Teger

1. Protista
2. [Porifera](#)
3. [Cnidaria](#)
4. [Platyhelminthes](#)
5. Rotifera
6. [Nematoda](#)
7. [Mollusca](#)
8. Annelida

NAVIGATION

[Welcome](#)[Course Principles](#)[Tools for Open Pedagogy](#)[Schedule](#)[Learning Outcomes and Policies](#)[Our Invert Zoo Textbook and Student Sites](#)

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Students can be involved in the production of any of this

- “Traditional” OER as textbook (e.g. OpenStax)
- Ancillary materials: test banks, etc.
- Curated links on websites
- Open Google Docs
- Open Videos
- Case studies
- Open Labs, simulations, animations
- Open Source software/tools
- Open Access published articles
- Open Datasets
- Open Lab notebooks, Methods repositories
- and more...



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Engage with the community. Construct the web. Navigate, and critically question digital technologies.

LIFE AS A BIOLOGY STUDENT

== althia rickard ==

HOME

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MICROBIAL DIVERSITY ▼

MY LIFE ▼

Q

HOW TO MAKE A 1.5% TSA
BROTH PLATES

HOW TO GRAM STAIN

HOW TO DO DNA EXTRACTION

HOW TO MAKE LBS AGAR
MEDIUM

HOW TO GROW BACTERIA ON
GRAPES USING TSA PLATES

HOW TO DO SIMPLE CRYSTAL
VIOLET STAINING



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“Contribute to, not just consume from, the knowledge commons”

-Robin DeRosa

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NATURE, NURTURE, MURDER?

Posted on March 27, 2017 by thehcexplored in [Evolution and Human Behaviour](#)

It has been found in many studies that male children who abused or experience violence are more likely to be violent when they grow up – but not all male children who experience violence whilst growing up turn out to be violent people. Some may ask, well what about alcohol abuse or drug abuse? Finances, education, or up-bringing? While all of these environmental factors have been linked to aggressive behavior, behaviorists are having a difficult time creating strong correlations between aggressive/violent behavior and environment alone. This has forced geneticists to ask the question that many had been hoping to avoid – is there a gene for violent behavior?

Stephen King begins his (very well-known) article *Why We Crave Horror Movies* with a very bold claim, “I think that we’re all mentally ill...”. He goes on to explain that he believes that insanity is a spectrum of control that spans from mumbling unintelligibly to yourself (when you’re frustrated) to cutting off

TOP POSTS & PAGES

[What an Open Pedagogy Class Taught Me About Myself](#)[Nature/ Nurture in Rhythm Zero](#)[Nature, Nurture, Murder?](#)[Genetics, Social Pressure, and Sexuality](#)[Biology and Being Alone](#)

Professional site and portfolio for Miranda Dean and Miranda Dean Images by Miranda Dean is licensed under a [Creative Commons Attribution-ShareAlike 4.0 International License](#).

Audience Beyond the Professor

ALANA OLENDORF E-PORT

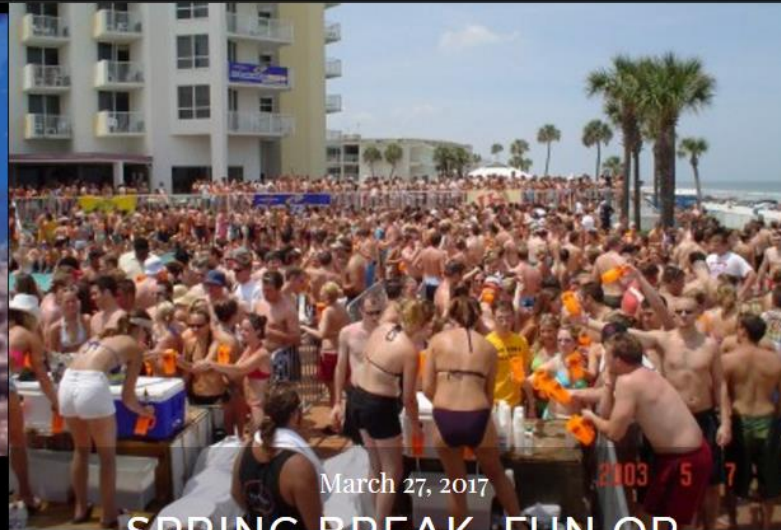


Student Domain



April 11, 2017

SCREENCAST 1: CORAL REEFS



March 27, 2017

SPRING BREAK, FUN OR
HARMFUL?



March 16, 2017

THE RED TIDE





BEHAVIORS / MAY 5, 2018

ALEX THE PARROT

"Alex the Parrot" By Blurpeace I just came out with a blog post called bird brains which covers multiple bird species and shows their intelligence [...]

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HUNTING / MAY 4, 2018

GREAT WHITES ARE SOCIAL CREATURES

Great White Shark Carcharodon carcharias, commonly known as great white sharks, to most are seen as killing machines of the ocean, but in reality they [...]

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BEHAVIORS / MAY 4, 2018

HUMANS BEHAVING LIKE ANIMALS OR ANIMALS BEHAVING LIKE HUMANS?

This blog post is not being made to say humans behave in the same way animals behave but they aren't far off. Humans are animals, [...]

[READ MORE](#)



RESEARCHPAPER / MAY 3, 2018

POMACEA DIFFUSA PREDATOR AVOIDANCE

Avoidance behaviors displayed by Apple Snail Pomacea diffusa in the presence of two different predators Josh Stevens, Alana Olendorf, Doug Ericson May 3rd, 2018 Bio [...]

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BEHAVIORS / APRIL 29, 2018

BIRD BRAIN?

Crow Water Displacement The term bird brain stems back to the early 1900's and was commonly used to refer to someone as unintelligent. It originated [...]

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NOTES / APRIL 27, 2018

ANIMAL BEHAVIOR NOTES

Evolution Fitness Altruism Sampling Communication Food and Predator Adaptation Predator Defense Evolution of Reproductive Behavior Proximate and Ultimate Causation Development of Behavior Human Behavior

My Hub Domain

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Evolution

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CHECK OUT MY TWITTER

Tweets by @JoshStevens1210

Josh Stevens
@JoshStevens1210
Lab skills are very crucial, integrating a way to use research labs as teaching facilities on occasion could be really useful! Similar to the neuro course last year, we were able to use @suvwhite tadpoles to conduct our own research projects #KSCbio

Oct 29, 2018

Josh Stevens
@JoshStevens1210
I feel like adding more labs to the early bio courses would be really beneficial! As bio students many of us have done

Embed

View on Twitter



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Non-Disposable Assignments

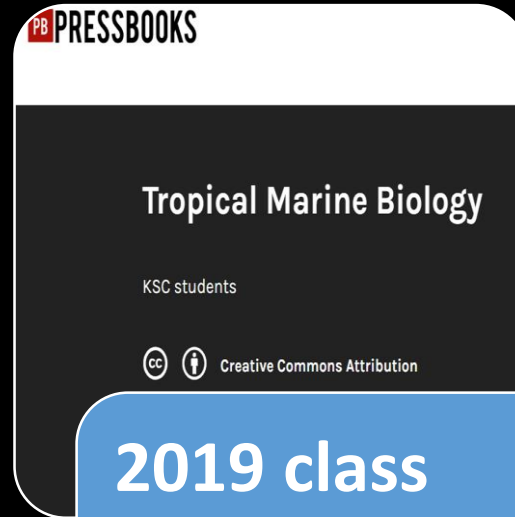
- Students create, remix and openly license work that is shared with others.
- Student work lives on past the end of the semester (if they want it to).

Beyond the walls of the classroom



2017 class

- Students create content on their domain spaces



2019 class

- Add content from domain spaces
- Curate and edit content from 2017 & 2019; create pressbook



2017 Alumni

- Further edit Pressbook Content
- Add new content
- Write the intro, title
- Reorganize chapters



Web annotation: Community & Collaboration

Hypothesis - Web & PDF Annotation | chrome-extension://bjfhmglicgochdpefhhlphglcehbme/.../content/web/viewer.html?file=https%3A%2F%2Ftropicalmarinebio...

Page: 1 of 10 Automatic Zoom

Public

understanding the causes of their declineimperative

More research funding to understand coral reefs and the factors affecting them is definitely needed.

Show replies (4)

Sim0726 Apr 5

The economic and ecological value of coralreefs makes understanding the causes of their declineimperative.

What are some of the economical values of coral reefs?

haleyzanga95 Mar 30

The decline of coral reefs has been broadly attributed tothreats emerging from climate change

My blog post that discusses this topic. Link: <https://haleyzanga.wordpress.com/2017/03/01/is-global-warming-real/>

haleyzanga95 Mar 27

review several ecological factors that can limit the ability of coral reefs to withstand disturbance. These include: (1) Many species lack the adaptive capacity to cope with the unprecedented disturbances they currently face; (2) human disturbances impact vulnerable life history stages, reducing reproductive output and the supply of recruits essential for recovery; (3) reefs can be vulnerable to the loss of few species, as niche specialization or temporal and spatial segregation makes each species unique (i.e., narrow ecological redundancy); in addition, many foundation species have similar sensitivity to disturbances, suggesting that entire functions can be lost to single disturbances; and (4) feedback loops and extinction vortices may stabilize degraded states or accelerate collapses even if stressors are removed. This review suggests that the degradation of coral reefs is due to not only the severity of human stressors but also the “fragility” of coral reefs. As such, appropriate

delivery of goods and preserved.

Keywords Diversity · E loss · Conservation · Staom

Introduction

Coral reefs constitute one o nomically important and th world (Wilkinson 2002; Bell 2011). Coral reefs harbor t Kudla 1997; Fisher et al. livelihoods for millions of coastal populations from e. (Wilkinson 2002; Adger et. Unfortunately, the world's co (Wilkinson 2002; Bellwood e with ~19% of the total co (Wilkinson 2002) and 60–7: sures (Wilkinson 2002; Bur While some coral reefs have from major disturbances (G et al. 2015), the majority of decline in live coral cove

Communicated by Ecology Editor Dr. Stuart Sandin

✉ Camilo Mora
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¹ Department of Geography, University of Hawaii, Honolulu, HI 96822, USA

² ARC Centre of Excellence for Coral Reef Studies, James

Bioscience at Hypothesis

Welcome to our bioscience portal, where we feature content and news about our program in biosciences.

Our goal for the program is two fold:

- 1) *to introduce the bioscience community to open, web-based annotation;*
- 2) *to explore specialized uses within the biosciences to inform future development.*

Attention Biocurators: Interested in **controlled tagging using Hypothesis**? We have developed some prototypes that allow Hypothesis to tag with controlled vocabularies and ontologies. We'd like your feedback. If interested, [contact us](#).

Also, many in the Hypothesis community are developing tools using Hypothesis that handle more specialized use cases. [See](#) what they are up to and add your own.

Whether you are a researcher, student, educator, journal editor, funder or just a fan of bioscience, we think that Hypothesis can become an essential part of your work.

- [Why does bioscience need open annotation?](#)

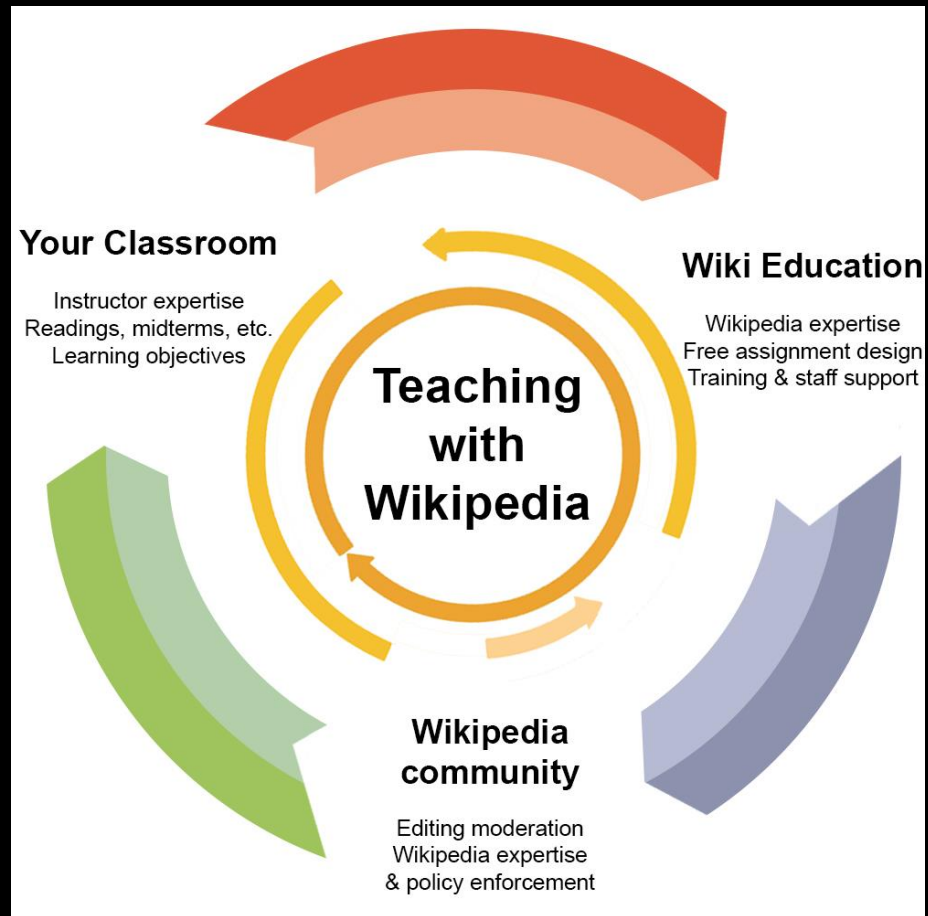


BLOG CATEGORIES

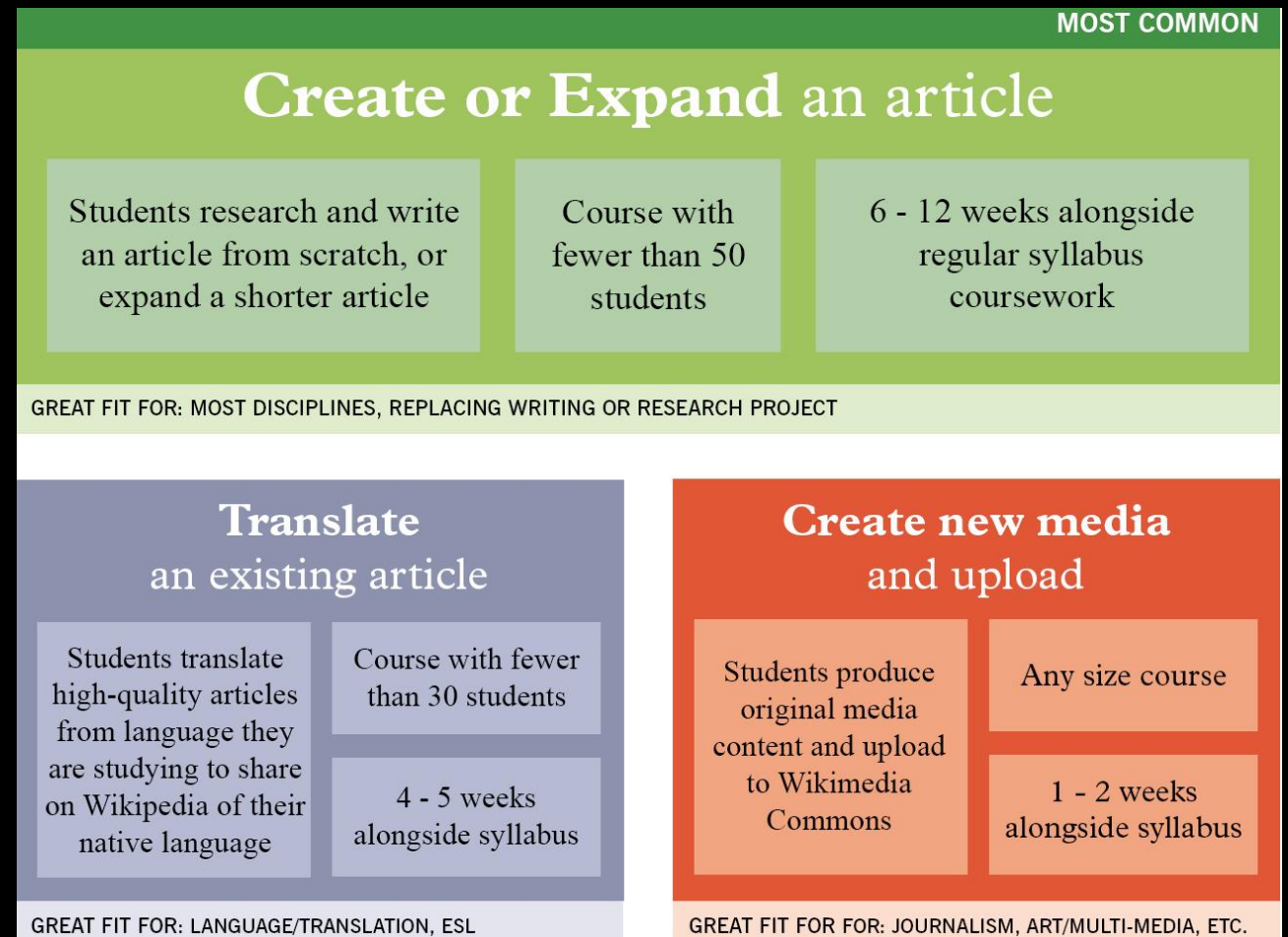
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Creating/Editing Wikipedia Articles



Wiki Education Foundation (wikiedu.org)

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Embracing Wikipedia as a teaching and learning tool benefits health professional schools and the populations they serve

Author

Amin Azzam*

Abstract

To paraphrase Wikipedia cofounder Jimmy Wales, "Imagine a world where all people have access to high quality health information clearly written in their own language." Most health professional students likely endorse that goal, as do individuals who volunteer to contribute to Wikipedia's health-related content. Bringing these two communities together inspired our efforts: a course for medical students to earn academic credit for improving Wikipedia. Here I describe the evolution of that course between 2013 – 2017, during which 80 students completed the course. Collectively they edited 65 pages, adding over 93,100 words and 608 references. Impressively, these 65 Wikipedia pages were viewed 1,825,057 times during only the students' active editing days. The students' efforts were in partnership with communities outside of academia—namely Wikiproject Medicine, Translators Without Borders, and Wikipedia Zero. These collaborations align with health professional

schools' local service missions, suggesting that embracing Wikipedia as a teaching and learning tool for tomorrow's health professionals may be globally generalizable. A network of health professional schools and students contributing to Wikipedia would accelerate fulfillment of Wikipedia's audacious aspirational goal—providing every single person on the planet free access to the sum of all human knowledge.

Keywords

medical education; medical communication; Wikipedia

Introduction

"Imagine a world in which every single person on the planet is given free access to the sum of all human knowledge. That's what we're doing."¹

Some might consider this audacious statement a naïve dreamer's fantasy. Yet even at 16 years old, Wikipedia continues to rank amongst the top 10 most heavily trafficked websites on the planet.² Clearly this unfulfilled vision is shared by millions. In health and

Medical students at the
University of California
San Francisco School of
Medicine edit
Wikipedia articles

“How do you go find the other people, the other voices?” - WVU Teaching Assistant Prof. Mary Kay McFarland

Fixing Gender Bias Is Complicated

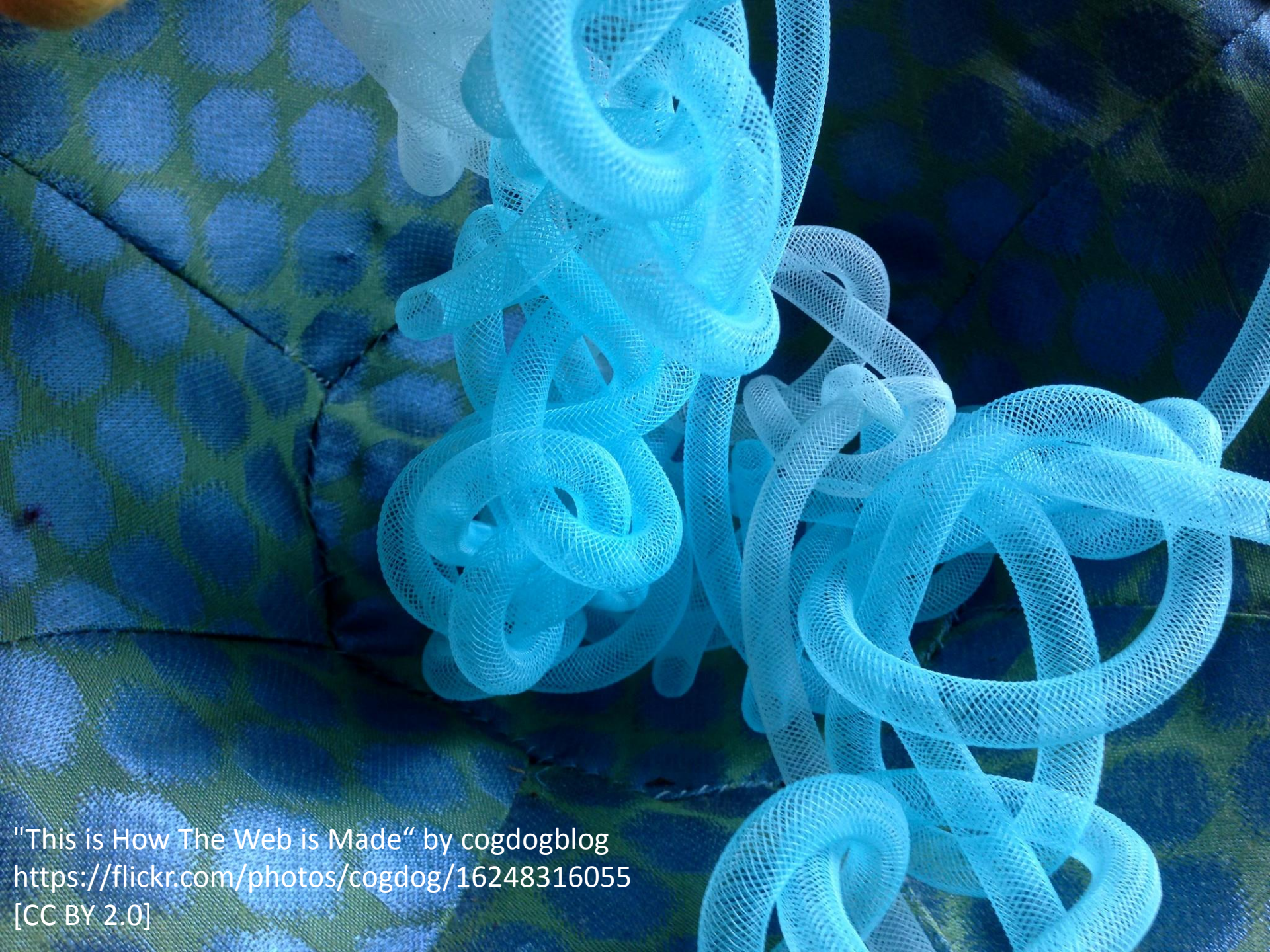
This academic year, we experimented with our Introduction to Photojournalism course to see just how we might help. Here at West Virginia University, we held a “Tackling the Gender Gap” session during Spring 2015. Although I was not yet a professor at WVU, I read about it on social media and felt it was an important issue.

Once on campus in Fall 2015, I charged students with writing biographical articles on photographers to counter Wikipedia’s gender bias against not only women, but people of color, as well.

My class was shocked by the assignment, and so were other classes in the spring. “Up until now, I was told ‘stay away from Wikipedia,’” WVU student Rachel Solis said.

“It’s a big NO-NO,” classmate Aishina Shaffer added. They responded to the charge of researching and writing for the world, rather than an audience of one (me, the professor).

“... students engage with and understand the politics of editing, including how ‘truth’ is negotiated by those who have access to the tools that shape it.”
— Robin DeRosa



“Our students
are not just
going on the
web, they are
constructing it.”

-Martha Burtis

"This is How The Web is Made" by cogdogblog
<https://flickr.com/photos/cogdog/16248316055>
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Using Social Media for developing a Personal Learning Network; Connecting with Peers, Professionals and Academics

Twitter

#KSCBio

The image shows a Twitter profile for Mamie (@MamieKingBio) with 76 tweets, 36 following, 25 followers, and 66 likes. The profile bio mentions KSC Biology Major and Criminal Justice Minor. Below the profile is a grid of tweets from various accounts including UT Knoxville, Forensic Science, Lynne (@Queen_Conina), and Dr Cath Jadot. The tweets cover topics like forensic anthropology, film, and ocean defense.

Linked-In

The image shows a LinkedIn group page for "Keene State College Biology Community and Alumni". The group has 82 members and is a "Standard group". The group description states it is for Keene State College Biology Department students, faculty, staff, alumni, and anyone else interested in connecting with the people of the Keene State College Biology Dept. The group owner is Loren Launen, a Professor of Biology at Keene State College. A post by Karen Cangialosi, Professor of Biology and Coordinator of Faculty Enrichment, mentions a job opening at Novo Nordisk and provides a link to the details.

Research Gate

ResearchGate

Recruit scientists

Advance your research

Discover scientific knowledge, and make your research visible.

#KSCmarinebio

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audrey boraski and 1 other liked



Emma Verville @emma_verville · May 6

EXTINCTION IS REAL. ITS HAPPENING RIGHT NOW. SOMETHING NEEDS TO BE DONE. CHANGE NEEDS TO HAPPEN. [#KSCMarineBio](#) [#KSCBio](#)

BBC Science News @BBCScienceNews

Nature crisis: 'Shocking' report details threat to species bbc.in/2H0BUkl



rai_biology @rai_biology · May 4

Check out the chapter i did for the Pressbook. It's about global warming and how its affecting the ocean. tropicalmarinebio.pressbooks.com/chapter/the-wa... [#kscmarinebio](#)



Jennifer Rosado @JenniferARosado · May 3

My newest blog post on cleaner shrimps! rosado.kscopen.org/uncategorized/... [#kscmarinebio](#)



rai_biology @rai_biology · May 3

Poster session at TDS building starts at 2pm-4pm! [#kscbio](#) [#KSCmarinebio](#)

"I got into several conversations with professionals about how to save our planet and things that need to be done in order to make that happen.... I found myself enjoying being on twitter for a purpose other than entertainment."

-Keene State Biology student

Open Pedagogy as Public Service

Students write about local contamination sites and potential consequences to humans and wildlife

#SciComm

SEPTEMBER 18, 2018 / MADDIOUELLETTE / LEAVE A COMMENT

Toxic Phthalates are in Everything...

Now that we know some background about phthalates and the health effects on male children how does this apply to our community? Currently all 50 states had or currently have a superfund site. The Environmental Protection Agency defines a superfund site as “any land in the United States that has been contaminated by hazardous waste and identified as a candidate for cleanup because it poses a risk to human health and/or the environment” (Environmental..., 2018). In New Hampshire the EPA identifies over twenty superfund sites in our state alone. One of those superfund sites is located in the next town over from my college. This is known as the Troy Mills and is found to contain phthalates that seemed to contaminate the nearby water supply. New Hampshire Department of Environmental Sciences regularly monitors this site and works directly with the EPA. All this information is public and can be found [here](#) to obtain more information about other superfund sites in New Hampshire.



The Troy Mills went into bankruptcy in 2003 therefore it was forced to close. The landfill was then added as a superfund site that fall. It was discovered that over eleven acres of property was used as an industrial waste disposal area from 1967 to 2001. This landfill had disposal drums of liquid waste of resins, organic solvent, and plasticizers stored underground. Within the next year the EPA removed over 7,500 buried drums and 26,000 tons of contaminated soil from the site. New soil was added, and a cap was placed over the former area. Due to the contamination of phthalates the site is required to have long-term environmental monitoring. Although, the site was cleaned up the phthalates did leak into the environmental and can be responsible for endocrine disruption in the human population around this area. Since you know phthalates are responsible for adverse reproductive development why should you NOT be concerned for this community.

How do these Phthalates effect the reproductive system of males?



On a more local note huge source of phthalate contamination in New Hampshire comes from the **Troy Mills Superfund site** located in Troy, NH. This site was once the former drum disposal area for Troy Mills Inc. **The Environmental Protection Agency (EPA)** did clean up the site. But, there was still a lot of phthalate contamination that couldn't be removed. This caused contamination of runoffs and then groundwater in the area. This threat to invertebrates population and health, as highlighted in the papers above, can be detrimental.

Tweets by @kfournierbio



Katelyn Fournier
@kfournierbio

Just added a new post to my blog! Go check out the impact of noise pollution on wildlife species at:
nhwildlifeimpact.wordpress.com



New Hampshire Wildlife Impact
Scientifically detailing the human impact on the wildlife of New Hampshire
nhwildlifeimpact.wordpress.com

18h

Open Pedagogy

- Open Science
- Open Data
- Citizen Science
- Science Communication
- Open Access Publication

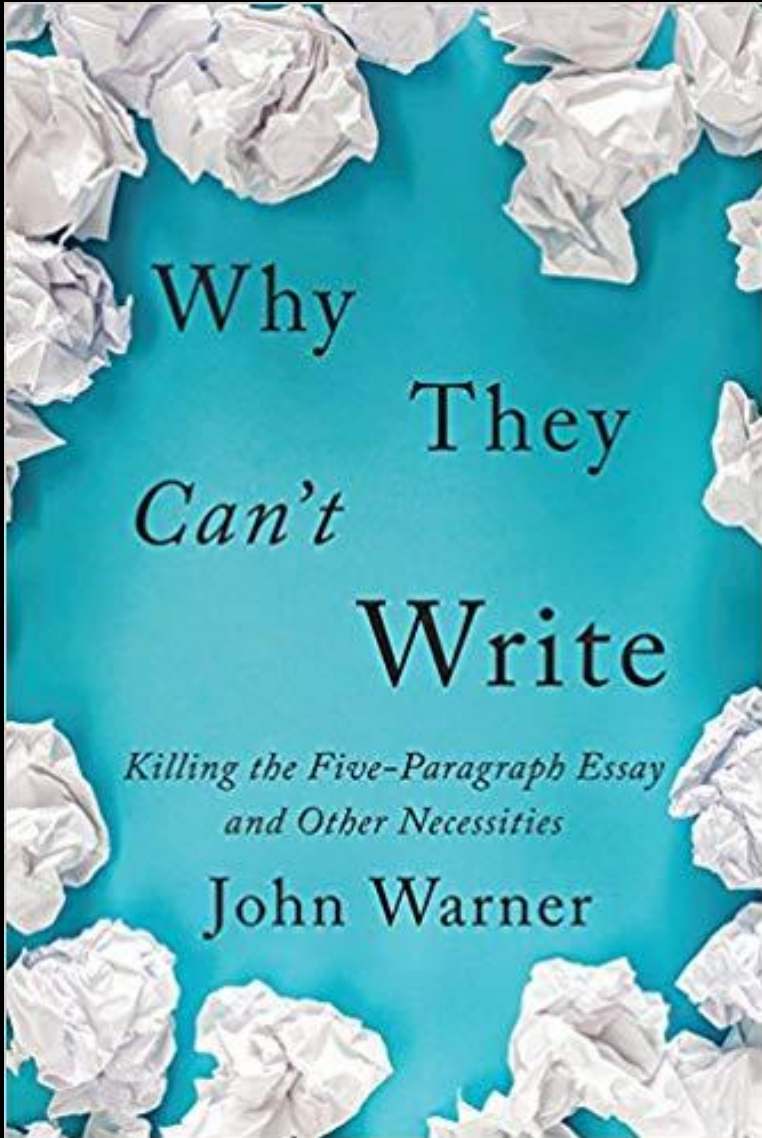


"Anxiety" by ASweeneyPhoto CC (BY-NC)

More than 60% of college students (in a study of 88,000) said they had experienced “overwhelming anxiety” in the past year, according to a 2018 report from the American College Health Association.

Over 40% said they felt so depressed they had difficulty functioning.

Source: <https://www.nytimes.com/2019/02/21/education/learning/mental-health-counseling-on-campus.html>



An atmosphere that places greater value on “achievement” than on learning

Standardized tests and assessments that suck the life out of learning

Surveillance systems that track, monitor, punish, and insist on compliance

“a stay of execution”

“students just know how to work the system”

“students will cheat if they can get away with it”

“they are grade-grubbers”

“they don’t know anything we taught them at the 100 level”

Stop Blaming Students

Students can work with faculty to:

- Create Content
- Write the syllabus
- Write the attendance policy
- Create learning outcomes
- Determine what goes on during class
- Design assignments
- Decide what work they want to make public or openly license
- Determine how they will be graded



Trust, Power, and Agency

Open Pedagogy:
Student Trust, Agency,
and Empowerment

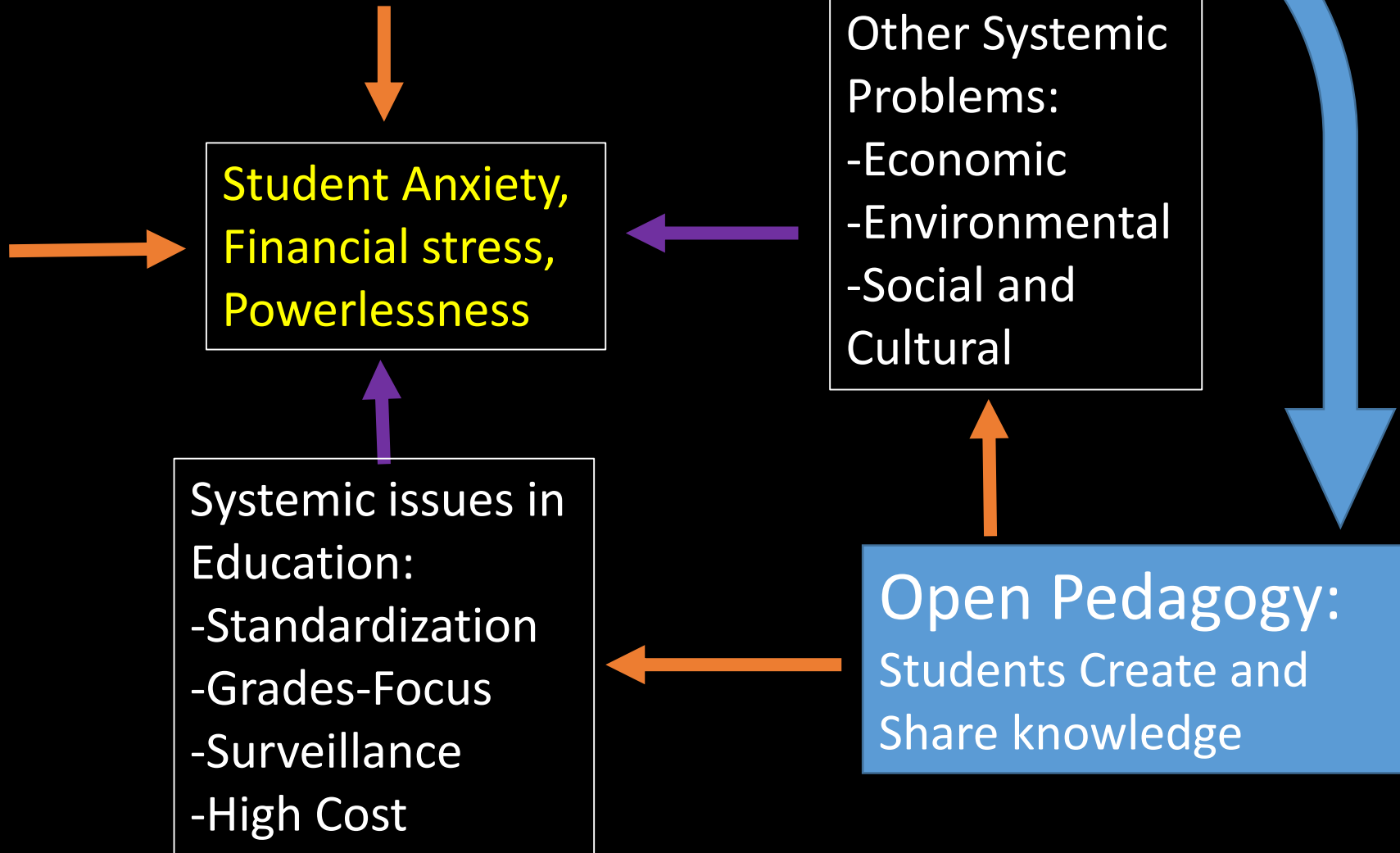
OER:
Cost Savings

Student Anxiety,
Financial stress,
Powerlessness

Other Systemic
Problems:
-Economic
-Environmental
-Social and
Cultural

Systemic issues in
Education:
-Standardization
-Grades-Focus
-Surveillance
-High Cost

Open Pedagogy:
Students Create and
Share knowledge





“When my students gain access to knowledge, I want it to be part of a larger invitation: we trust that you have important lessons to teach the world, and we trust that the knowledge you access today will be changed by your perspective, that you will open doors to new ideas that we, your current teachers, never could have taught you.” – Robin DeRosa, *University of the Margins*



[CC 0] modified by K. Cangialosi

Open Pedagogy in Science

= using Open Pedagogy practices in STEM courses



The Pedagogy of Open Science

= teaching students the value and practices of opening up scientific work

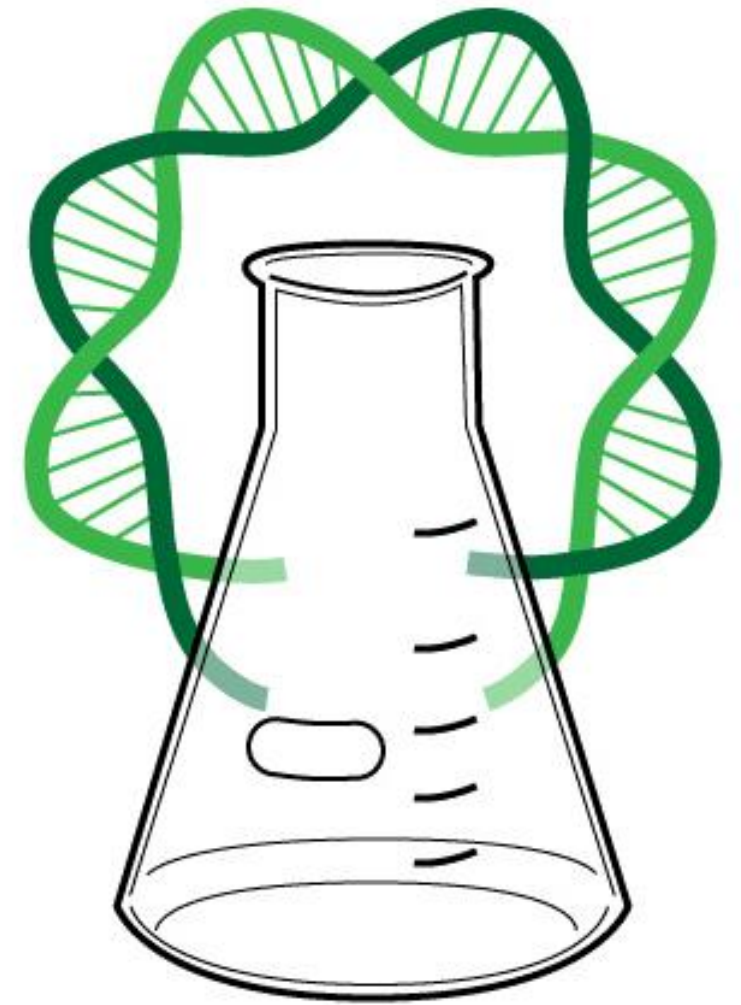


By G.emmerich [CC BY-SA 3.0]

A Global Scientific Revolution

- Transparency in experimental methodology, observation, and collection of data
- Public availability and reusability of scientific data
- Public accessibility and transparency of scientific communication
- Using web-based tools to facilitate scientific collaboration

From What, exactly, is Open Science?
Posted on [July 28, 2009](#) by [Dan Gezelter](#)



open science

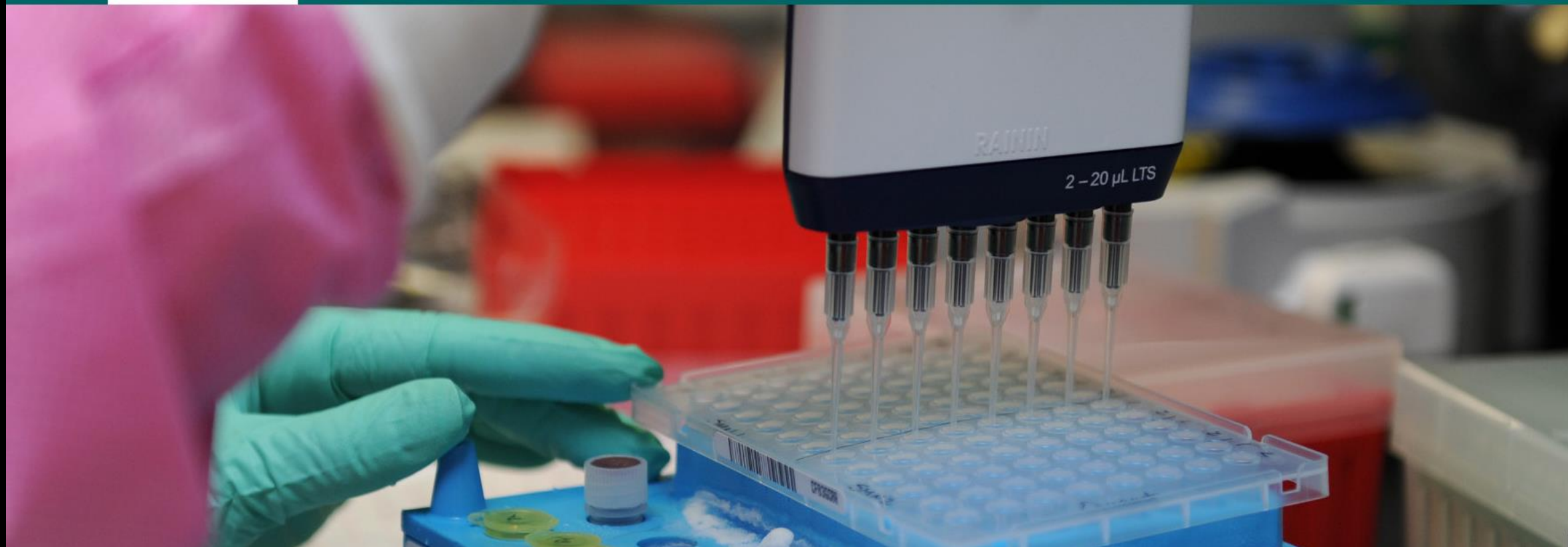
Why Open Science?

- Science now is slow, wasteful, locked away
- Ruled by commercial interests
- Reproducibility crises, questionable research practices
- Make scientific practice more effective by increasing collaboration, transparency of the review process, inclusivity
- Increase our range and extent of knowledge, amplify collective intelligence, increase cognitive diversity
- Real breakthroughs need to come through diverse teams of collaborators who share data, not individual superstars
- Declining funding for basic science and for higher education, increasing corporatization of academia, decreasing public trust



openlabnotebooks.org

A growing team of groundbreaking scientists around the world are now sharing their lab notebooks online

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<http://onsnetwork.org/>

Open Protocols
<https://www.protocols.io/>

Make your science more reproducible

protocols.io is the #1 open access repository for science methods

CREATE FREE ACCOUNT



HOW IT WORKS

Open Notebook Science Network

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Welcome! to a network of open science notebooks. Questions? tweet us at [@ONScience](#).

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[everything communicates](#) * 19 June, 2019
: <http://wp.me/paT7tX-2M> Imagine that you are in a room with people with whom you share social, professional a [...]

[¿Enemigo o aliado de la posverdad?](#) 18 June, 2019
<http://wp.me/paT7tX-43> En una investigación, es necesario que el quier fuente de información que pueda abonar a su o [...]

[is the mutual dependence interviewer-researcher?*](#) 18 June,

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KSC_BIO110_F18_Philip_Pause

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Lab Notebook

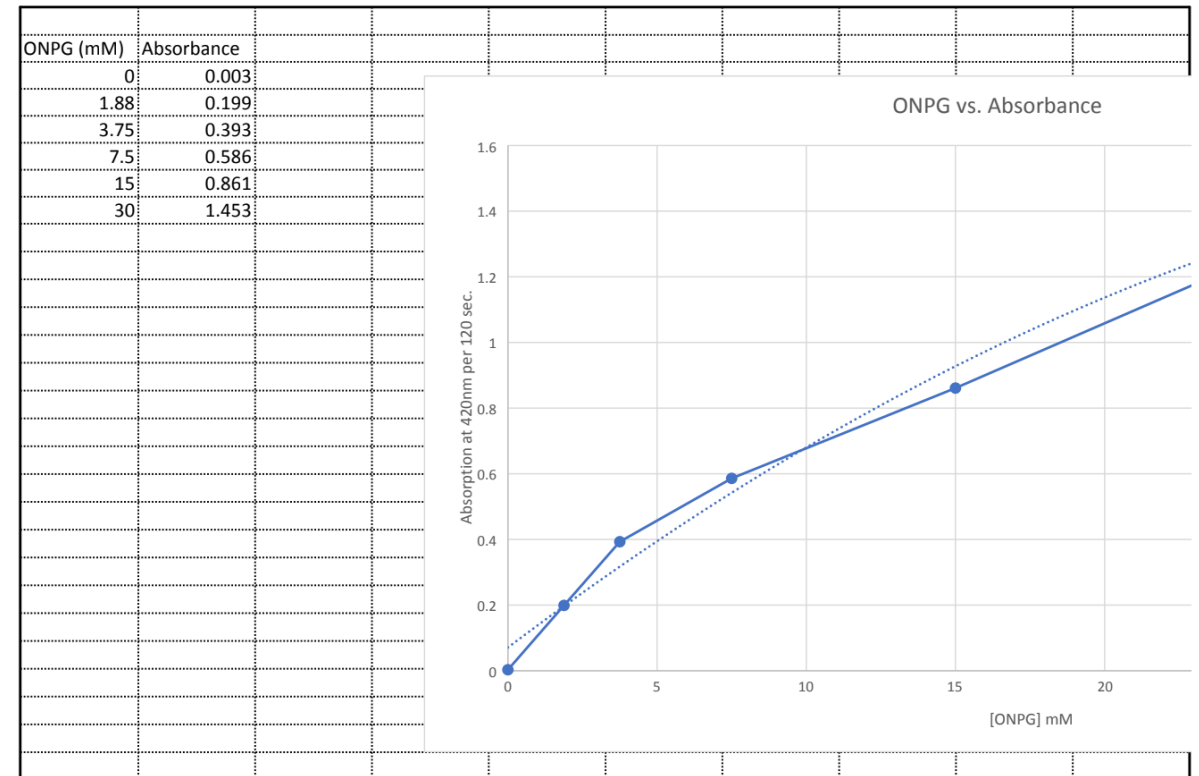
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KSC Intro biology students create wiki pages to use as their open lab notebook



Open Pedagogy/Open Science

Student shares methods and data from her independent research project

SCHOFIELD INVESTIGATIONS

A PLACE TO LEARN

HOME • ABOUT • COURSES • ACADEMIC LECTURES • STUDY ABROAD

PROGRESS UPDATE #4

April 4, 2018



"Male #3 gill flaring to the Female Betta splendens"
by H. Schofield (CC by 2.0)

This data was collected 4/2/18 and 4/4/18. More male/male trials were completed and most of

Tweets by @has6595

Heather Schofield
@has6595

Had a very interesting speaker come to my psychology class the other day. #studyabroad #psychology #brain schofieldinvestigations.kscopen.org/academic-lectu...

What ab...
Presentat...
schofieldi...

Data Collection: The Introduction of the Female *Betta splendens*

Trial #	Experiment Side A	Experiment Side B	Gill Flares	Tail Beats
1	Male #2	Male #3	31	5
2	Male #2	Male #3	35	10
3	Male #2	Male #3	37	5
Average:			34.33	6.66
1	Male #2	Male #4	3	0
2	Male #2	Male #4	12	5
3	Male #2	Male #4	7	4
Average:			7.33	3
1	Male #2	Male #5	6	2
2	Male #2	Male #5	13	4
3	Male #2	Male #5	10	3
Average:			9.667	3
1	Male #2	Female	1	4
2	Male #2	Female	1	5
3	Male #2	Female	2	6
Average:			1.33	5

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Open Pedagogy/Open Science

Faculty-Student Co-authored and Open Access Research Article



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Posted April 16, 2018.

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Madison C Sestak, Julia A Pinette, Caithlin M Lamoureux, Susan L Whittemore


doi: <https://doi.org/10.1101/301846>

This article is a preprint and has not been peer-reviewed [what does this mean?].

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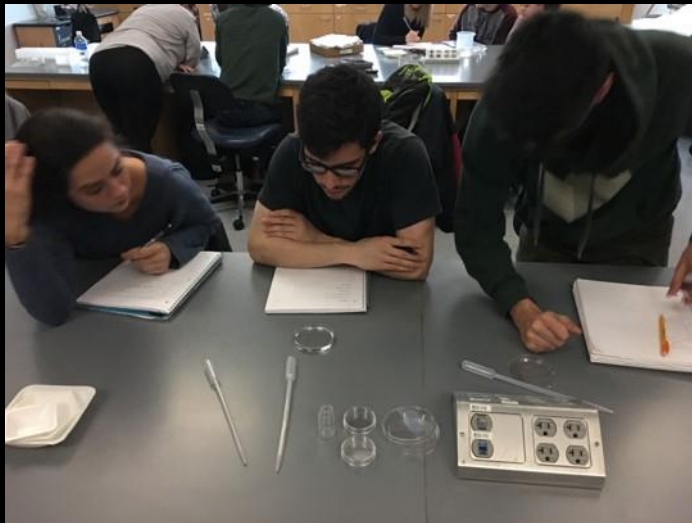
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Subject Area

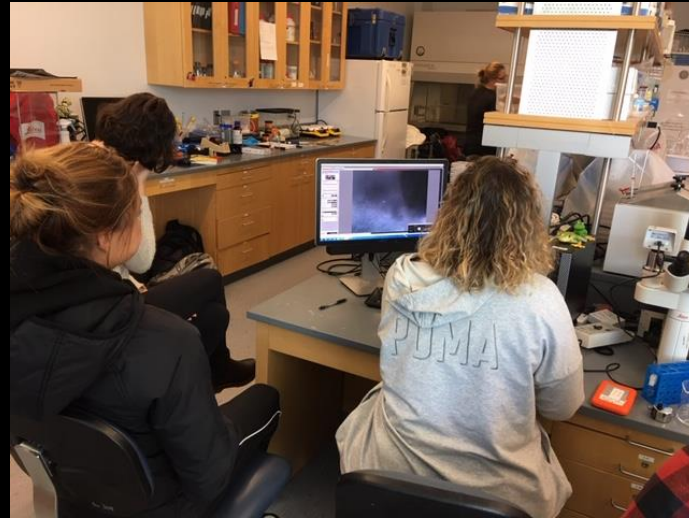
Pharmacology and Toxicology

Abstract

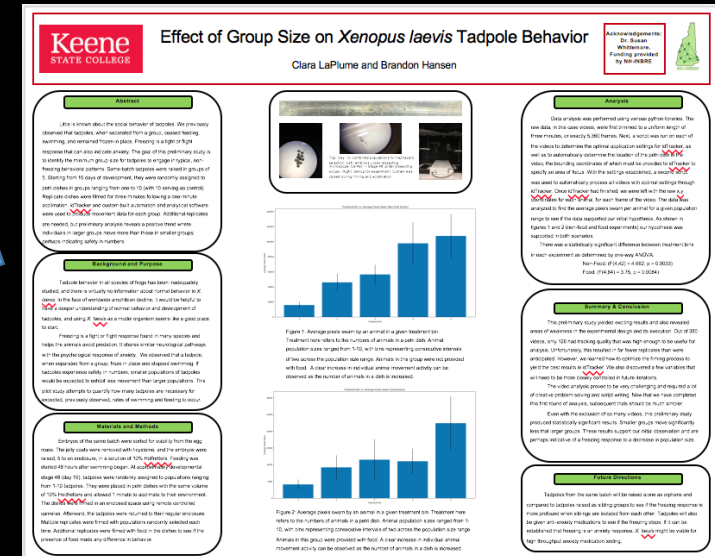
Energy Flow and Nutrient Cycling in the Open Ecosystem



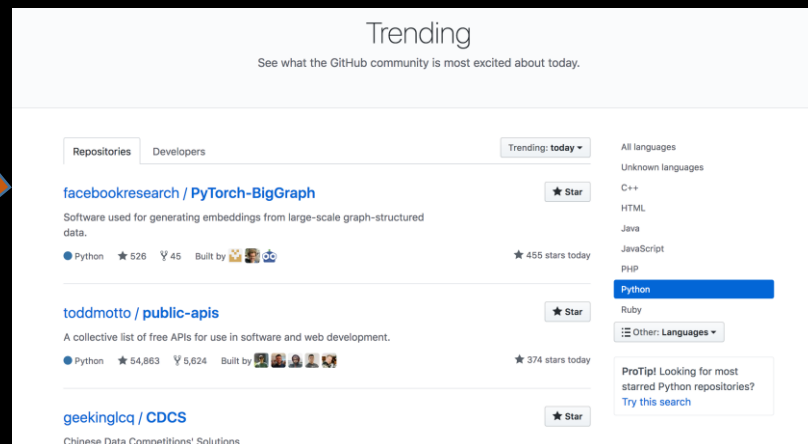
Open Pedagogy
Classroom



Open Science
Research Lab

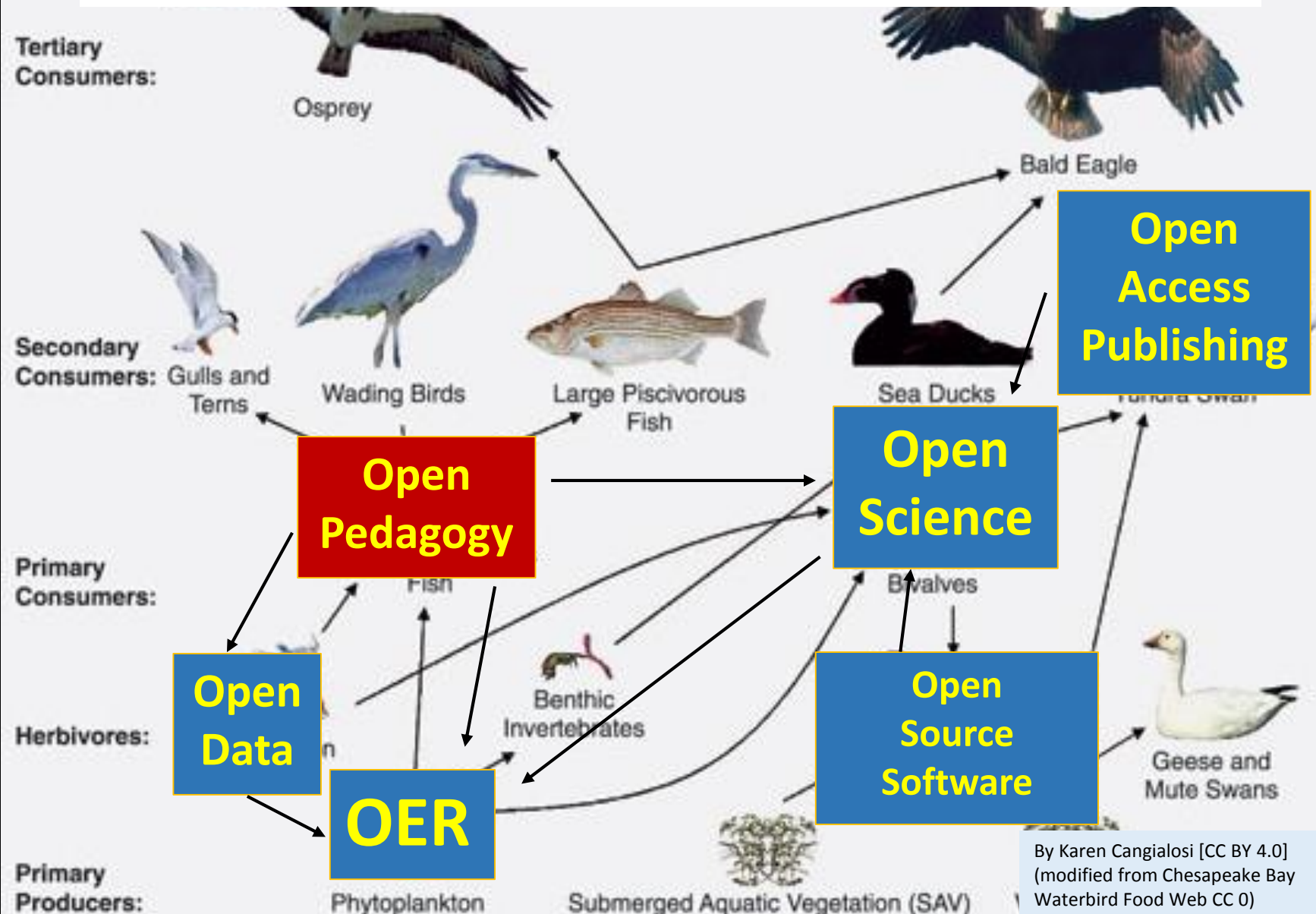


Open Access
Communication



Open Data

Energy Flow and Nutrient Cycling in The Open Ecosystem



Teach Data Like an Intersectional Feminist!



“What if we imagined teaching data as a place to start creating the connected, collective, caring world that we want to see?”

-Catherine D’Ignazio and Lauren Klein

From Data Feminism, D’Ignazio and Klein, MIT Press Open
<https://bookbook.pubpub.org/data-feminism>

United Nations Sustainable Development Goals Open Pedagogy Fellowship

SUSTAINABLE DEVELOPMENT GOALS



Kwantlen Polytechnic University (KPU) and Montgomery College,
International Partnership

“Open is a Process, Not a Panacea”

-Robin DeRosa




“On the one hand, open promises to improve access to education and the well-being of livelihoods through practices that enable the sharing of educational content ... On the other hand, it can unwittingly reproduce many of the existing inequities of the systems it seeks to change.”

Can we decolonize OER/Open?
Taskeen Adam, Maha Bali, Cheryl Hodgkinson-Williams, Tannis Morgan

Who gets counted in our datasets? Who is missing?

Datafication: Is data-driven decision making benefitting the public or amplifying inequities?

Surveillance Capitalism and the Data Economy: How is our data used? Who has control over our data? Who is profiting?

 data.world

+ New 3

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Geocoded: Incidents of Gun Violence in San Antonio (2018)

Incidents of gun violence in San Antonio in 2018, according to the Gun Violence Archive.

SUMMARY

Incidents of Gun Violence in San Antonio in 2018 according to the Gun Violence Archive (<http://www.gunviolencearchive.org/congress/tx>). This dataset was published by the Rivard Report in "Tierrabyte: Zoning Emerges as Contested Tool for Gun Control."

The definition of gun violence varies. The Gun Violence Archive's methodology describes their definition as "fully inclusionary of disparate elements of gun-related incidents," including accidental shootings, crimes involving guns, or drivebys.

<http://www.gunviolencearchive.org/methodology>

About this dataset

SHARED WITH Everyone

CREATED Jun 29, 2018 by [@rivardreport](#)

MODIFIED Jun 29, 2018 · All activity

VERSION [bbc47082](#)

SIZE 14.39 KB

TAGS [gun violence](#), [zoning](#), [gun control](#), [open carry](#)

LICENSE Public Domain

DICTIONARY 1 file and 11 columns [View data dictionary](#)


QUERIES (1)

[gunviolencesa_cleaned](#)

PROJECTS USING THIS DATASET (1)


Gun Violence San Antonio TX
@ar505 · 7 months ago

CONTRIBUTORS (1)

 The Rivard Report
[@rivardreport](#)

1 file

Sort

 **GunviolenceSA_Cleaned.xlsx**
Request more info

[View](#)

	incident_date	state	city_or_county	address	#	latitude	#	longitu
1	2018-06-24	Texas	San Antonio	NW Loop 410		29.5209		
2	2018-06-24	Texas	San Antonio	222 N New Braunfels Ave		29.4221		
3	2018-06-23	Texas	San Antonio	4553 N Loop 1604 W		29.596		
4	2018-06-22	Texas	San Antonio	I-35		31.6106		
5	2018-06-21	Texas	San Antonio	Chihuahua St and Hamilton St		29.417		

Data is not ideologically neutral

Science is not ideologically neutral

Education is not ideologically neutral



Can we resist the market-driven values that are reducing our institutions of higher education to sites for workforce training, and instead practice the critical pedagogies that our students desperately deserve, and that may inspire them to radically transform the world in ways that we cannot yet imagine?



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