Interconnections in The Open Ecosystem

Karen Cangialosi
Dept of Biology
Keene State College
Keene, NH USA

@karencang
#QBioEd19

International Year of the Reef 2008, poster by NOAA
Biology

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

Connie Rye, East Mississippi Community College
Robert Wise, University of Wisconsin, Oshkosh
Vladimir Jurukovski, Suffolk County Community College
Jean DeSaix, University of North Carolina at Chapel Hill
Jung Choi, Georgia Institute of Technology
Yael Avissar, Rhode Island College

See all authors ▼
Student Loan Debt Statistics In 2019: A $1.5 Trillion Crisis

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.

$2.0 trillion

$1.569 trillion debt in Q4 2018

$480 billion debt in Q1 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.

Modified from Slide by Robin DeRosa [CC BY 4.0]
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

A textbook case of price-gouging
America, % increase

Textbook prices
Consumer prices

Source: Bureau of Labour Statistics

From The Economist
Chart 1: Impact of Textbook Costs on Students

- Take fewer courses: 47.6%
- Don't register for a specific course: 45.5%
- Drop a course: 26.1%
- Withdraw from a course: 20.7%
- Earn a poor grade because I could not afford to buy the textbook: 37.6%
- Fail a course because I could not afford to buy the textbook: 19.8%
- Don't purchase the required textbook: 66.6%

22,000 students in the study

Slide by Robin DeRosa [CC BY 4.0]
Free
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
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

"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
Qubeshub.org/qubesresources/oer

Open Education Resources on QUBES

The QUBES project supports the use of open licences for educational materials because it makes these materials easier to find, use, customize, and share.

BROWSE OER MATERIALS

Sharing on QUBES

QUBES has a full featured open educational resources publishing platform that makes it easy to share your work and track its impact.

Partners Using OER on QUBES

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

Learn More About OER

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]
The Open License

Not just “free”, but Open.

Creative Commons licenses explained
©Foter (adapted by Jisc) via Foter blog
CC BY-SA
“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
Open Educational Resources (OER)

- Digital
- Multimedia
- Downloadable
- Adaptable
- Current
- Public
- Openly Licensed
- Free

Open Educational Resources by Ron Mader [CC BY 2.0]
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

Modified from content by Robin DeRosa

‘Floor at domains17’ by Karen Cangialosi [CC BY 4.0]
Open Pedagogy is about Access and Agency.

- Learning Structure Design
- Knowledge Creation
- Knowledge Sharing
- Community Participation & Collaboration
- Food, gas, laptops, captions, safety, ETC.
Environmental Science Bites

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


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.

License

Environmental Science Bites by Kylienne A. Clark, Travis R. Shaul, and Brian H. Lower is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License, except where otherwise noted.
11. 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

Why have students answer questions when they can write them?

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:
OER doesn’t have to look like a typical textbook
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…
Discover who you want to become by what you want to share

DIGITAL IDENTITY
Take ownership of your presence on the web. Express your ideas. Integrate your learning and interests.

DIGITAL FLUENCY
Use open-source platforms. Build projects using digital tools. Create portfolios, exhibits, galleries, blogs, or

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

https://kscopen.org/
LIFE AS A BIOLOGY STUDENT

ALTHIA RICKARD

HOME ABOUT ME INVERTEBRATE ZOOLOGY ANIMAL BEHAVIOR MICROBIAL DIVERSITY MY LIFE

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 GRAPESEEDS USING TSA PLATES
HOW TO DO SIMPLE CRYSTAL VIOLET STAINING

This work is by Althia Rickard and is licensed under a Creative Commons Attribution 4.0 International License.
“Contribute to, not just consume from, the knowledge commons”

- Robin DeRosa

NATURE, NURTURE, MURDER?

Posted on March 27, 2017 by thechcexplored 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 timing 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...
Audience Beyond the Professor

ALANA OLENDORF E-PORT

April 11, 2017
SCREENCAST 1: CORAL REEFS

March 27, 2017
SPRING BREAK, FUN OR HARMFUL?

March 16, 2017
THE RED TIDE
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

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 services is compromised.

**Keywords** 
Diversity • Export • Loss • Conservation • Stabilization

**Introduction**

Coral reefs constitute one of the most economically important and biodiverse regions of the world (Wilkinson 2002; Bellwood 2011). Coral reefs harbor one of the world’s most diverse ecosystems (Kudla 1997; Fisher et al.), providing livelihoods for millions of coastal populations from the tropics to the high latitudes (Wilkinson 2002; Adger et al.). Unfortunately, the world’s reefs are facing unprecedented pressures (Wilkinson 2002; Bellwood et al.) and with ~19% of the total coral cover (Wilkinson 2002) and 60–70% coral cover, it seems there are no signs of recovery (Wilkinson 2002; Bellwood et al.). While some coral reefs have recovered from major disturbances (Goreau et al., 2013), the majority of the decline in live coral cover remains a concern.

Communicated by Ecology Editor Dr. Stuart Sandin

Camilo Mora
cmora@hawaii.edu

1 Department of Geography, University of Hawaii, Honolulu, HI 96822, USA

2 ARC Centre of Excellence for Coral Reef Studies, James Cook University, Townsville, QLD 4811, Australia

---

Understanding the causes of their decline imperative

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

Sim0726

The economic and ecological value of coral reefs makes understanding the causes of their decline imperative.

What are some of the economical values of coral reefs?

HaleyZanga95

The decline of coral reefs has been broadly attributed to events emerging from climate change.

My blog post that discusses this topic: Link: https://haleyzanga.wordpress.com/2017/03/01/is-global-warming-real/
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?
Creating/Editing Wikipedia Articles

Create or Expand an article
- Students research and write an article from scratch, or expand a shorter article
- Course with fewer than 50 students
- 6 - 12 weeks alongside regular syllabus coursework

Translate an existing article
- Students translate high-quality articles from language they are studying to share on Wikipedia of their native language
- Course with fewer than 30 students
- 4 - 5 weeks alongside syllabus

Create new media and upload
- Students produce original media content and upload to Wikimedia Commons
- Any size course
- 1 - 2 weeks alongside syllabus

GREAT FIT FOR: MOST DISCIPLINES, REPLACING WRITING OR RESEARCH PROJECT

GREAT FIT FOR: LANGUAGE/TRANSLATION, ESL

GREAT FIT FOR: JOURNALISM, ART/MULTI-MEDIA, ETC.
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.”

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. Clearly this unfulfilled vision is shared by millions. In health and
“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

http://mediashift.org/2016/05/why-you-and-your-students-should-work-to-improve-wikipedia/
“Our students are not just going on the web, they are constructing it.”

-Martha Burtis
Using Social Media for developing a Personal Learning Network; Connecting with Peers, Professionals and Academics

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

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... 2016.) In New Hampshire the EPA identifies over twenty superfund sites in our state alone. One of those superfund sites is located in the town next door 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 in public and can be found here to obtain more information about other superfund sites in New Hampshire.

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.

How do these Phthalates effect the reproductive system of males?
Open Pedagogy

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

Student Anxiety, Financial stress, Powerlessness

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

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

Open Pedagogy: Students Create and Share knowledge

OER: Cost Savings
“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
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
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
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
Open Protocols
https://www.protocols.io/

Open Notebook Science Network
http://onsnetwork.org/

Welcome! to a network of open science notebooks. Questions? tweet us at @ONSscience.
KSC Intro biology students create wiki pages to use as their open lab notebook
Student shares methods and data from her independent research project

<table>
<thead>
<tr>
<th>Trial #</th>
<th>Experiment Side A</th>
<th>Experiment Side B</th>
<th>Gill Flares</th>
<th>Tail Beats</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Male #2</td>
<td>Male #3</td>
<td>31</td>
<td>5</td>
</tr>
<tr>
<td>2</td>
<td>Male #2</td>
<td>Male #3</td>
<td>35</td>
<td>10</td>
</tr>
<tr>
<td>3</td>
<td>Male #2</td>
<td>Male #3</td>
<td>37</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Average: 34.33</td>
<td>5.66</td>
</tr>
<tr>
<td>1</td>
<td>Male #2</td>
<td>Male #4</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>Male #2</td>
<td>Male #4</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>Male #2</td>
<td>Male #4</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Average: 7.33</td>
<td>3</td>
</tr>
<tr>
<td>1</td>
<td>Male #2</td>
<td>Male #5</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>Male #2</td>
<td>Male #5</td>
<td>13</td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td>Male #2</td>
<td>Male #5</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Average: 9.867</td>
<td>3</td>
</tr>
<tr>
<td>1</td>
<td>Male #2</td>
<td>Female</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>2</td>
<td>Male #2</td>
<td>Female</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>Male #2</td>
<td>Female</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Average: 1.33</td>
<td>5</td>
</tr>
</tbody>
</table>
Early Exposure to Polycyclic Aromatic Hydrocarbons (PAHs) and Cardiac Toxicity in a Species (Xenopus laevis) with Low Aryl Hydrocarbon Receptor (AHR) Responsiveness

Madison C Sestak, Julia A Pinette, Caitlin 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?].
Energy Flow and Nutrient Cycling in the Open Ecosystem

Open Pedagogy Classroom

Open Science Research Lab

Open Access Communication

Open Data
“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

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 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?