Interconnections in The Open Ecosystem
By Karen Cangialosi

Module Description:
This week’s featured resource is a presentation on open education and open science that was given as the keynote address at the 2019 BioQUEST & QUBES Summer Workshop. The presentation abstract is below.
The growing movements in Open Education, Open Data and Open Science have the potential to revolutionize both the teaching of science and scientific practice itself. Open Pedagogy enhances learning by empowering students to take greater ownership of how and what they learn, and to not just consume from, but to contribute to the knowledge commons. As science teachers, we can be more effective and inclusive of all learners when we leverage a broad variety of Open Educational Resources (OER) and Open teaching practices; practices that make learning more accessible and engage all of our students in uncontrolled, learner-driven scientific discovery in dialogue with the wider public.

We can also bring the ideas of Open Science (making all stages of scientific work transparent, widely collaborative and accessible) into our pedagogy, raise its possibilities for vastly increasing our extent and range of knowledge and for making scientific practice more effective, inclusive, and beneficial for people. Emphasizing the values of Open Science and Open Data in our classrooms and research labs teaches our students to direct their scientific questions towards the public good.

Scientists who teach can create and strengthen the connections within the Ecosystem between Open Pedagogy, Open Science, Open Data, Open Access publishing and OER - connections that encourage learners to contextualize understanding of science in social contexts, build community with others, and enact their scientific practice to serve citizens in their local and global communities.

**Teaching Setting:**

This presentation was created for science educators to discuss the benefits of open education and the use of open science principles in our teaching.
Citation:


**Related Materials and Opportunities:**

This resource was given by [Karen Cangialosi](https://example.com) as the keynote address at the 2019 BioQUEST & QUBES Summer Workshop titled, “*Evolution of Data in Classroom: From Data to Data Science*”. 
Karen Cangialosi (Keene State College) gives the keynote address, “Interconnections in the Open Ecosystem”, at the 2019 BioQUEST & QUBES Summer Workshop.

Check out all of the action around Dr. Cangialosi’s presentation on social media! View the live stream video of her presentation on the QUBES facebook page, check out the live-tweet of her presentation here, and view a few other tweets from workshop participants below. For even more, follow QUBES and BioQUEST on Facebook and Twitter (@qubeshub and @BioQUESTed) and explore the hashtag #QBioEd19 on Twitter to see what others had to say about the workshop.
Ellen Bledsoe @bleds22e · Jul 14
@karencang opening her plenary talk for #qbioed19 about open education with a territorial acknowledgement 🧵

Amelia McNamara @AmeliaMN · Jul 14
@karencang mentioning a biology course with a 46% fail rate. That’s not something to be proud of. “Who is failing? It’s not the students. WE ARE FAILING.” #qbioed19
You can find other materials from the 2019 BioQUEST & QUBES summer workshop, including [posters](#), [session materials](#), and [presentation abstracts](#) on the [workshop website](#). You are also encouraged to [subscribe to receive upcoming QUBES Newsletters](#) where we will be sharing highlights from the summer workshop.

Save the date for the [2020 BioQUEST & QUBES Summer Workshop](#), which will be held on June 22-27, 2020 at the University of Pittsburgh in Pittsburgh. If you are interested in receiving information about this workshop as plans continue to develop, please [subscribe to receive updates](#).
If you adopt and adapt this module, you are highly encouraged to share your adaptation back with the QUBES community using the QUBES Resources System for sharing Open Education Resources.

QUBES is a community of math and biology educators who share resources and methods for preparing students to use quantitative approaches to tackle real, complex, biological problems.

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