QUBES
The Power of Biology × Math × Community

Visit QUBES Hub

Workshops

CourseSource
Evidence-based teaching resources for undergraduate biology education

Apply for the 2019 CourseSource Writing Studio Workshop

Application review will begin on April 1, 2019.

Learn more...

@eddie
environmental data-driven inquiry & exploration

Teaching Quantitative Reasoning with Data Workshop

Carleton College
Northfield, Minnesota
June 11 - 13, 2019

This workshop covers the wealth of opportunities that exist for engaging students in STEM and improving quantitative reasoning skills through open-ended exploration and interpretation of real-world data.

Application deadline: April 5, 2019

Learn more…
Apply now.

iEMBER
INCLUDE ENVIRONMENTS AND METRICS IN BIOLOGY EDUCATION AND RESEARCH

In this newsletter:

- Interested in diversity, equity, and inclusion in biology education? Attend the 2019 iEMBER Conference.

- Rene Begay and Krystal Tsosie will be presenting at the 2019 QUBES/BioQUEST Summer Workshop!

- HITS 2019 Summer workshops at Elon! Save the date: June 10-12!

- Gateways 2019 Call for Participation (Abstracts due April 29; Full submissions due May 6)

- QUBES Near You: Members of Team QUBES invite you to connect with them at these upcoming conferences

- Summer Undergraduate Research Experience in Interdisciplinary Computational Biology

- Call for Presenters: ESA Education Section sponsors presenters at 11th REEFS workshop

- ROW Recap: Browse the outstanding QUBES resources recently featured in the Resource of the Week (ROW)

- Participate in the Bringing Conversations on Diversity, Equity, and Inclusion in Data Science to the Environmental Sciences conference
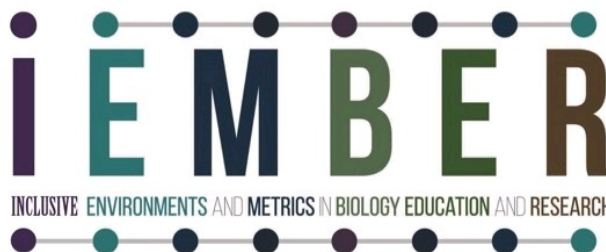
Webinar

Access NEON: Data Portal and Tools for Accessing and Understanding NEON Data

Join NEON scientists to learn how to access NEON data and tools to help you work with the data.

Wed, Mar 27, 2019 2:00 PM - 3:00 PM EDT

Learn more and register...

iEMBER
INCLUSIVE ENVIRONMENTS AND METRICS IN BIOLOGY EDUCATION AND RESEARCH

Interested in diversity, equity, and inclusion in biology education? Attend the 2019 iEMBER Conference.

The Inclusive Environments and Metrics in Biology Education and Research (iEMBER) network is hosting their next conference on April 8-9 at Harris-Stowe State University in St. Louis, MO. iEMBER is an interdisciplinary group of biologists, biology education researchers, social psychologists, and diversity advocates working on solving issues of diversity, equity, and inclusion in biology education. You are encouraged to attend this conference if you are interested in any of those issues.

Learn more about the 2019 iEMBER Conference.

If you want more information on iEMBER, read their new publication in CBE-LSE.

Travel fund requests are currently being accepted.

Please contact Michael Moore at michael_e_moore@baylor.edu with questions.

DATA TO DATA SCIENCE
SUMMER WORKSHOP 2019

Rene Begay and Krystal Tsosie will be presenting at the 2019 QUBES/BioQUEST Summer Workshop!

The 2019 QUBES/BioQUEST Summer Workshop will be held on July 14-19, 2019 at the College of William & Mary in Williamsburg, VA. In this workshop we will explore how to build on the ways data is currently used in the classroom to incorporate the emerging field of data science. Look for applications to attend the summer workshop to open soon. In the meantime, if you are interested in attending, please subscribe to receive updates.

The schedule includes a lineup of engaging speakers that will share exciting ideas and information with workshop participants throughout the week. Over the next couple of months, we'll be featuring some of the workshop speakers in the QUBES newsletter. Learn about this month's featured speakers, Rene Begay and Krystal Tsosie, below. View a complete list of speakers.

Rene Begay, University of Colorado Denver

Rene Begay, M.S., is (Diné/Navajo) an Indigenous geneticist. She obtained her Masters degree in Clinical Science at the University of Colorado Anschutz Medical Campus in Aurora, Colorado studying genetic mutations associated with dilated cardiomyopathy. Currently, she is a Research Assistant at the Centers for American Indian and Alaska Native Health (CAIANH) at the University of Colorado Denver. Rene is currently working with the Navajo Nation to generate a genetic research policy that is specific to helping the Navajo people engage in genetic research in a culturally relevant manner. Rene is also a faculty member of the SING consortium. She joins Krystal Tsosie to represent the SING (Summer internship for INdigenous peoples in Genomics) Consortium: https://sing.igb.illinois.edu/

Krystal Tsosie, Vanderbilt University

Krystal Tsosie (Diné/Navajo), MPH, MA, is currently completing a PhD in Genomics and Health Disparities at Vanderbilt University in Nashville, Tennessee. She also co-leads the Genetics and Preeclampsia Study within the Turtle Mountain Band of Chippewa Indian Nation in Belcourt, North Dakota. As an Indigenous geneticist-ethicist, Krystal advocates strongly for genomic and data sovereignty and is currently assisting the Cheyenne River Sioux Tribal nation with instituting their own policies for data privacy, biobanking, and building research capacity. She joins Rene Begay to represent the SING (Summer internship for INdigenous peoples in Genomics) Consortium: https://sing.igb.illinois.edu/

HITS
High-throughput Discovery
Science & Inquiry-based Case
Studies for Today's Students

HITS 2019 Summer workshops at Elon! Save the date: June 10-12!

High-throughput Discovery Science & Inquiry-based Case Studies for Today's Students (HITS) is an NSF RCN-UBE that seeks to improve student quantitative skills and participation in high-throughput discovery. HITS is excited to announce that the next **HITS 2019 summer workshop** will be hosted by **Elon University on June 10-12th**.

Become a HITS HT Researcher!

HITS is also taking applications for grad students and postdocs developing and using high-throughput (HT) approaches. HT Fellows will share their research and explain their approaches at the workshop. The application can be found here: https://qubeshub.org/community/groups/hits/get_involved. *Please share the opportunity with your students and colleagues!*

Gateways 2019 Call for Participation (Abstracts due April 29; Full submissions due May 6)

Call for Participation: Gateways 2019 (September 23–25, San Diego, California) is now accepting submissions of papers, demos, tutorials, and panels (2–4 pages) on the topic of gateways for science, engineering, or other disciplines. Gateways are user-friendly interfaces to scientific computing, data, and other domain-specific resources to support research and education.
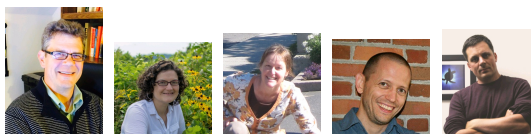
Topics may include their design, use, impact, development processes, sustainability, best practices, or any other aspect that you think fellow gateway creators or users will find interesting to learn. We also welcome educational topics directed toward the next generation of gateway creators. **In addition, this year Gateways 2019 is co-located with the** eScience **conference.** The two conferences will offer shared sessions and connected registration.

Abstracts are due April 29, and full submissions are due May 6, 2019. A poster session deadline (open to all attendees) will be August 15. Read more details in the **Call for Participation:** http://sciencegateways.org/gateways2019/call

QUBES Near You

In QUBES Near You, we let you know which upcoming conferences or meetings the members of the QUBES team will be attending in case you'd like to connect with them. Members of Team QUBES are always looking to meet others who have a passion for quantitative biology education. See where they'll be in March and April... and don't forget to ask them for a QUBES sticker!

From left to right: Sam Donovan (Director of OER), Carrie Diaz Eaton (Director of QUBES Consortium), Kristin Jenkins (Director of BioQUEST), Drew LaMar (Director of Cyberinfrastructure), and Jeremy Wojdak (Director of Professional Development).

If you will be attending...	Feel free to look for...
The 5th Life Discovery - Doing Science Education Conference (March 21-23, 2019 in Gainesville, Florida)	Kristin Jenkins Drew LaMar
The Bringing Conversations on Diversity, Equity, and Inclusion in Data Science to the Environmental Sciences Conference (April 2-4, 2019 in Boulder, Colorado)	Carrie Diaz Eaton Drew LaMar
The Accelerating Systemic Change Network (ASCN) Transforming Institutions Conference 2019 (April 3-5, 2019 in Pittsburgh, Pennsylvania)	Sam Donovan Kristin Jenkins Jeremy Wojdak
The University of Puerto Rico Río Piedras Campus - lecture series on biology education research and data science (April 8-11, 2019 in San Juan, Puerto Rico)	Carrie Diaz Eaton
The Open Educational Resources in Higher Education: A Regional Symposium (April 29, 2019 at Bates College in Lewiston, Maine)	Carrie Diaz Eaton

ICompBio: REU
Interdisciplinary Computational Biology
May 27 - August 5, 2019

Summer Undergraduate Research Experience in Interdisciplinary Computational Biology

University of Tennessee at Chattanooga

May 27–August 5, 2019

Highlights:

- $5750 stipend + housing + meal plan
- Travel allowance up to $500
- Coding boot camp
- Research in computing and life science
- Chattanooga is a great outdoor city.

Online application: https://tinyurl.com/iCompBioREU

Application materials: A personal statement, transcripts, a resume, and 2 support letters.

For more information, visit https://utc.edu/iCompBio or contact icompbio@utc.edu.

Call for Presenters: ESA Education Section sponsors presenters at 11th REEFS workshop

11th Resources for Ecology Education – Fair & Share (REEFS) Preconference Workshop
2019 ESA Annual Meeting, Louisville, Kentucky
Sunday, August 11, 2019, 12:00 PM-5:00 PM

The ESA Education Section will cover the workshop registration fee ($30) for up to 20 ESA Education Section members who present at REEFS.

Resources for Ecology Education – Fair and Share (REEFS) is an annual workshop held during ESA's Annual Meeting. Since 2008, it has been organized jointly by ESA's Office of Education and Diversity and the ESA Education Section.

Call for Presentations

Teaching ideas at all levels of development are welcome. For those who are developing a new activity, this is an opportunity for you to get immediate feedback. For those with tested activities, come share your teaching resource. We are especially looking for ideas that help advance the core concepts and competencies embodied in the Four Dimensional Ecology Education(4DEE) Framework and Vision and Change in Undergraduate Biology Education. We welcome your participation as education leaders!

For information on REEFS and details for presentations, please visit: https://www.esa.org/esa/education-and-diversity/reefs/

ROW Recap

Each week we feature an outstanding educational resource that is freely available on QUBES. All resources featured in the Resource of the Week (ROW) have been plucked from the large and growing collection of open education resources (OER) that are freely available on QUBES. Most resources have open licenses, allowing you to easily find, use, and adapt the materials. Each ROW includes a brief description of the education resource along with related materials and opportunities that might be of interest to faculty.

In this ROW Recap, we've rounded up the last 5 resources featured in the ROW since our last newsletter. Browse the titles below and click on the images to visit the resource featured in the ROW.
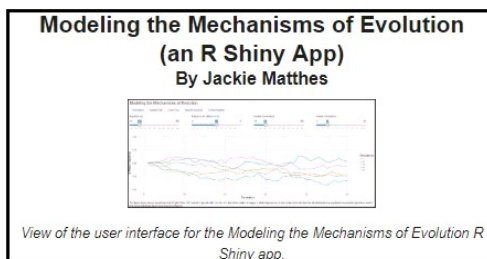
Subscribe to the ROW. You do not need a QUBES account to subscribe!

Chi-squared test of independence between two categorical variables (Version 1.0)
By Matthew Aiello-Lammens

```
> swirl()

| Welcome to swirl!
```
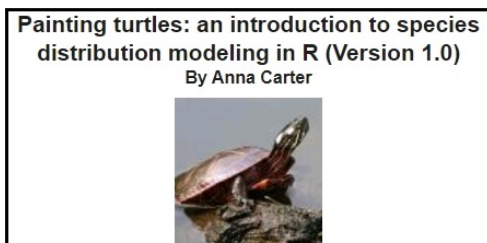
This resource is an activity in which students work through a chi-squared test of independence between two categorical variables in Swirl, an interactive platform for learning and teaching R in the RStudio console.

Seed Dispersal in Tropical Forests: Learning How Plants Move Around (Version 1.0)
By Sunshine Liberty Brosi

This module focuses on the dispersal of seeds from trees in fragmented tropical forests. Students use data from published studies to understand patterns of seed dispersal and apply these ideas to the design of a conservation area.

Modeling the Mechanisms of Evolution (an R Shiny App)
By Jackie Matthes

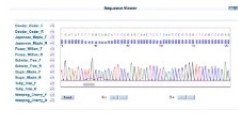*View of the user interface for the Modeling the Mechanisms of Evolution R Shiny app.*

This resource is an R Shiny app that contains simulation models for genetic drift, gene flow, and natural selection, the three core population-level processes that can lead to evolution.

Painting turtles: an introduction to species distribution modeling in R (Version 1.0)
By Anna Carter

In this exercise, students will gain insight into the process of building an occurrence-based species distribution model (sdm) by investigating the distribution of painted turtles (*Chrysemys picta*), a semi-aquatic species that is widespread throughout North America.

Using DNA Subway to Analyze Sequence Relationships (Version 2.0)

By Jason Williams, Ray A. Enke, Oliver Hyman, Emily Lescak, Sam S Donovan, William Tapprich, and Elizabeth F Ryder

This resource is a bioinformatics lab in which students learn how to use DNA Subway (http://www.dnasubway.org), an online educational bioinformatics platform that bundles research-grade bioinformatics tools, high-performance computing, and databases into workflows with an easy-to-use interface.

Participate in the Bringing Conversations on Diversity, Equity, and Inclusion in Data Science to the Environmental Sciences conference

Bringing Conversations on Diversity, Equity, and Inclusion in Data Science to the Environmental Sciences, is a 3-day conference with the ultimate goal of developing a networked improvement community (i.e., Environmental Data Sciences Inclusion Network) that works to ensure inclusion across environmental data science professions. The conference will identify existing activities and resources available to support inclusion in the field and provide opportunities for attendees to network and initiate discussion sessions they propose. Conference attendees will comprise academic, training, and business partners that currently offer training and career opportunities in the data sciences and project leaders conducting research on best practices for recruitment and retention of currently underrepresented groups in this and related fields. Attendees will also include employers who have an interest in building and maintaining an inclusive workplace and individuals with experience in mentoring interns and early career professionals in research and technical positions.