



# QUBES

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## Featured Resource:

### Calling Bull in an Age of Big Data with R

***A semester's syllabus with activities and resources***



Adapted by Carrie Diaz Eaton

This syllabus is an adaptation of the [Calling Bull curriculum](#) developed by [Carl T. Bergstrom](#) and [Jevin West](#), a companion to their book [Calling Bullshit: The Art of Skepticism in a Data-Driven World](#) (Random House, 2020). [Join the Calling Bull group](#) for more resources and discussion!

#### Course Description:

This is a course that will hone students' digital citizenship skills. It is about "calling b\*\*\*s\*\*\*": spotting, dissecting, and publicly refuting false claims and inferences based on quantitative, statistical, and computational analysis of data. The course explores case studies in policy and science; possible examples include food stamps, caffeine, improving traffic, and gendered mortality rates.

Information skills fostered in the course include spotting misinformation, causal fallacies, statistical traps, data visualization, big data, interpreting scientific claims, fake news and social media,

and refutation techniques. This course will introduce students to data analysis and visualization with R.

**Teaching Setting:**

This course works for in-person settings but has worked particularly well in the remote learning environment as well.

**Citation:**

Carrie Diaz Eaton (2019). [Calling Bull in an Age of Big Data with R](#). EDSIN: Environmental Data Science Inclusion Network, (Version 2.0). QUBES Educational Resources. [doi:10.25334/Q4CF3C](#)

## QUBES News

### QUBES Publishes New Mission Statement

We've published a new mission statement that captures our evolution. [Let us know what you think!](#)

"QUBES is a community of individuals and organizations committed to accelerating STEM education reform. Supported by our social-cyberinfrastructure and commitment to teaching quantitative skills, we work to make sure that our teaching is effective, open, accessible, equitable, and inclusive."

[The statement can be found on the QUBEShub about page.](#)

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### New Group Forms around *Calling Bull*

[Join a new group](#) around sharing resources for teaching with the [Calling Bullshit curriculum](#), based on *Calling Bullshit: The Art of Skepticism in a Data-Driven World* (Random House, 2020) by Carl J. Bergstrom and Jevin D. West.

The group is a "fan" community site for instructors that allows for collaboration and adaptation of the Calling Bull curriculum to a variety of institutional contexts. See the featured resource in the sidebar for an example, and [join the Calling Bull group!](#)

## Spring Faculty Mentoring Networks Recruit Participants



The following Spring 2021 FMNs are still recruiting for applicants:

- [QB@CC Bridging Mathematics and Biology](#) - Deadline Dec. 8
- [Bring Bioinformatics to Your Biology Classroom](#)- DEADLINE EXTENDED: Now Dec. 8
- [Scientists Spotlights and Data Nuggets](#) - Deadline Dec. 11
- [Molecular Case Studies: At the Interface of Biology and Chemistry](#) - Deadline Dec. 11
- [Social Justice and Community Change](#) - Deadline Dec. 11
- NEW OPPORTUNITY! [Project EDDIE](#) - Deadline Dec. 15
- [Cell Collective](#) - DEADLINE EXTENDED: Now Dec. 15
- [COVID Vaccination: From Science to Society](#) - Deadline Dec. 15
- [SENCER](#)- DEADLINE EXTENDED: Now Dec. 15

See [the FMN Announcement](#) to browse the descriptions!

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## How QUBES Can Support Your Education Project

QUBES has a comprehensive project support infrastructure, built by and for STEM educators. Hosting a project on QUBES can help to address challenges such as building and coordinating your community, disseminating your products, and documenting your impacts.

Please [visit our new Grant Services page](#) to learn more about how QUBES can be used to support education projects. Or [fill out this brief form](#), and we will get in touch with you.

## Kudos

### NABT Honors QB@CC Group Members Heather Seitz and Adronisha Frazier with Awards



NABT awarded QB@CC Steering Committee member Heather Seitz (Johnson County Community College, Overland Park, KS) with the [Two-Year College Biology Teaching Award](#), which recognizes a two-year college biology educator who employs new and creative

techniques in their classroom teaching.

QB@CC member Adronisha Frazier (Louisiana State University, Baton Rouge, LA) won the [Biology Educator Leadership Scholarship \(BELS\)](#), a \$5,000 scholarship to

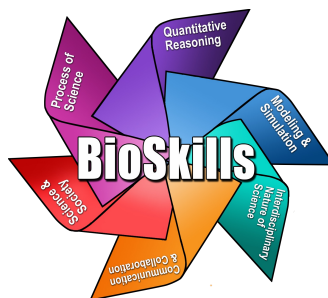


support practicing teachers who want to further their education in the life sciences or life science education.

Congratulations to Heather and Adronisha!

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### BioSkills Guide is Subject of CBE-LSE paper



The [BioSkills Guide](#), developed by the [BioSkills Group](#), is the subject of a paper published in [CBE LSE](#). The guide elaborates on the Vision and Change core competency framework and provides a set of measurable learning outcomes that can be more readily implemented by faculty. The paper articulates the group's process in creating the guide and its national validation.

## Education Issue of Bulletin in Mathematical Biology Features QUBES Users



Society for  
Mathematical  
Biology

The [Bulletin in Mathematical Biology](#) published an education issue, edited by [John](#)

[Jungck, Raina Robeva, and Louis Gross](#). The issue brings together a review of STEM education initiatives that have been particularly effective as well as addresses challenges.

The QUBES and BioQUEST communities are highlighted in “[Building Community-Based Approaches to Systemic Reform in Mathematical Biology Education](#)” by Olcay Akman, Carrie Diaz Eaton, Dan Hrozencik, Kristin P. Jenkins, and Katerina V. Thompson.

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## Partner News and Opportunities

### Featuring the BIOME Institute



CULTIVATING SCIENTIFIC CURIOSITY  
BIOME INSTITUTE 2020

  QUBES

The BIOME (Biology and Mathematics Educators) Institute wrapped up their fall working groups November 20. Working groups focused on developing a range of undergraduate research experiences, from engaging, hands-on modules to course-based undergraduate experiences. Learn more about the working groups on [the BIOME website](#).

Many thanks to the working group facilitators for their leadership, and congratulations to all the participants who have earned the title of BIOME Fellows through their involvement and contributions in the BIOME Institute.

The BIOME Institute has also spawned multiple Spring 2021 Faculty Mentoring Networks, including two focused around social justice--[Social Justice and Community Change](#) and [Scientists Spotlights and Data Nuggets](#)--as well as Molecular CaseNet's [Molecular Case Studies: At the Interface of Biology and Chemistry](#) and Cell Collective's [Computational Modeling and Simulation Designed with the Classroom in Mind](#). All of these are still recruiting for applicants!



## **Partners@QUBES Leadership Summit**

**December 14, 2020, 1:30-3:30 pm ET**

Join us in promoting your partnership with QUBES at our Partners@QUBES Leadership Summit. Together, we'll celebrate your accomplishments, strengthen and connect our communities, and make your work and QUBES' support more visible.

This virtual event will feature lightning talks from partner leaders to showcase the excellent work we've done together and provide opportunities for networking and discussion with leaders in the QUBES community. Learn how other groups are using QUBES, find new collaborators and resources, and brainstorm ways to overcome project challenges.

Those interested in partnering with QUBES are also welcome to attend.

[Join the partner support group](#) for announcements and see the [Summit webpage](#) for registration information!

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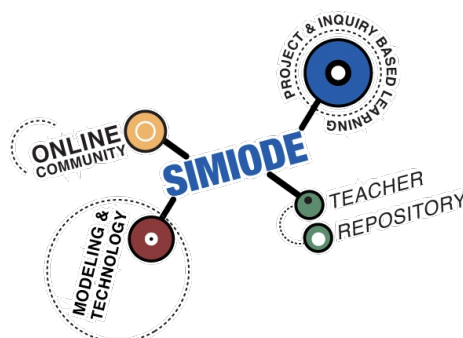
### **SABER Seeks Participants for Survey on Postdoc Experience**

If you are a STEM postdoc or work with STEM postdocs, SABER is collecting information about perceptions and experience of postdocs' professional development and mentoring support during their postdoc tenure.

This information will help identify gaps in the support that postdocs receive in order to transition successfully to an academic career. It will provide much needed insight on the impact of postdoc professional development which is currently lacking.

[The IRB-approved survey can be found here.](#) Please complete by December 31, 2020 and contact Michael ([memoore "at" ucdavis "dot" edu](mailto:memoore@ucdavis.edu)) with any questions or concerns you might have.

## SIMIODE Forms New Group for Community College and Two-year College Teachers of Differential Equations



SIMIODE invites you to join a new group for Community College and Two-year College Teachers. These groups are places where discussions through forums will permit colleagues to exchange ideas, activities, and views related to their special needs in this important part of our teaching profession.

Visit [SIMIODE's Group directory](#) to join the group.

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## iDigBio Webinar to Focus on Virtual Community Building (featuring speakers from BioQUEST and QUBES!)

The webinar, "Built-in Flexibility: Lessons Learned Engaging Your Community



Virtually," will be held on **December 8 from 2:00-3:00 p.m. ET.**

This webinar will focus on designing engaging and accessible online events that build lasting community.

Andrew Hasley, Hayley Orndorf, and Deborah Rook, from QUBES and BioQUEST, will explore the 2020 Biology and Math Educators (BIOME) Institute as a case study. They'll share lessons learned and practices that can be applied to online professional development and educational events.

Topics include: participant engagement, asynchronous and synchronous community building, access, universal design, and online professional development.

[Visit the iDigBio webinar series page for more information and a Zoom link.](#)

About the series: Recognizing the rapid changes happening within museum communities and the efforts being made throughout the community to adapt to these changes, iDigBio is organizing a webinar series: Adapting to COVID-19: Resources for Natural History Collections in a New Virtual World.



## **Amy L. Chang, Education Director of the American Society of Microbiology, Retires**

Congratulations to Amy L. Chang, who is retiring December 15, after 40 years at the American Society of Microbiology.

Chang worked to develop numerous programs that are now mainstays: the Coalition of Undergraduate Life Sciences Education (CELS), ASM Division W, Curriculum Guidelines, ASM Conference for Undergraduate Educators (ASMCUE), the Journal of Microbiology & Biology Education (JMBE), and the first Gordon Research Conference for Undergraduate Microbiology Education.

She also led efforts to help those underrepresented in science, leading ASM to become a champion for communities not historically included. ASM was bestowed with the US Presidential Award for Mentoring Minorities in Science in 2000, and Chang helped support and establish fellowships and professional development for underrepresented groups, as well as the Annual Biomedical Conference for Minority Students (ABRCMS).

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## **Resources and opportunities**

### **NSF's IUSE Program Seeks Proposal Reviewers**



[Sign up to be an NSF IUSE Grant Proposal Reviewer](#)

Please note, you cannot be a reviewer if you are submitting an IUSE Proposal this coming year.

The AAAS-IUSE Initiative is offering numerous resources for those applying for IUSE grants and for STEM teaching and learning generally. [Sign up for their newsletter here.](#)

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### **AAAS-IUSE Calls for Blog Proposals**

The AAAS-IUSE blog is looking for individuals to author a blog addressing the following theme: Leveraging this moment of disruption to empower evidence-based systemic change that advances equity.

Proposals are due December 13, 2020. [Learn more about the submission process here.](#)

The 2021 AAAS-IUSE blog, The Disruptor, is dedicated to exploring strategies that empower faculty and other stakeholders to create systemic change that improves diversity, equity, and inclusion and supports students from underrepresented and underserved communities to participate and succeed in STEM.



## Fellowship Opportunity for Early- or Mid-Career STEM Education Scholars

Housed at the University of Chicago, and a joint effort with Michigan State University, the summer institute in advanced research methods for Science, Technology, Engineering, and Mathematics education research (SIARM for STEM) is funded via a 3-year grant from the [National Science Foundation](#) (2020-2023).

The project team will select a diverse cohort of 22 NSF Fellows of STEM Education Research among early- and mid-career scholars, especially those under-represented in STEM. [Learn more about the program here.](#)

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## NSF Dear Colleague Letter Calls for Proposals on Approaches to Online Undergrad Bio

[A Dear Colleague Letter](#) from the Directorates for Biological Sciences and Education and Human Resources is encouraging:

"the submissions of proposals to the Research Coordination Networks for Undergraduate Biology Education (RCN-UBE) Program that focus on developing, piloting, and sharing innovative and transformative approaches for online undergraduate biology courses, particularly those that foster inclusive approaches that encourage student engagement and retention in biology."

QUBES and a number of our partners are listed as recommended digital biology platforms/infrastructure/datasets to leverage in projects! Find out how we can help with your project at our [Grant Services page](#).

The letter also encourages attending upcoming RCN-UBE office hours, held on the following Fridays from 1:00 to 3:00 p.m. ET:

December 11, and 18, 2020

January 8, 14, and 15, 2021

[See the RCN-UBE website for more information.](#)

Members of the QUBES team are always looking to meet others who have a passion for quantitative biology education. Reach out so we can help you gather your collaborators, move projects forward, and continue to move quantitative biology forward. [Connect with us by submitting a support ticket.](#)



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).

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*Do you have a product or result from a QUBES sponsored activity? Help us measure our success by [sharing your product or result with QUBES](#). [Learn how to cite QUBES](#).*



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