# QUBES
The Power of Biology × Math × Community

**Visit QUBES Hub**

## Faculty Mentoring Networks

QUBES offers professional development opportunities for educators called Faculty Mentoring Networks (FMNs). FMNs are a great way to receive support and guidance before, during, and after implementation of a new teaching module or technique. Learn more about FMNs.

Please subscribe to the QUBES Newsletter or check out the QUBES blog to receive updates about upcoming FMNs.

### Save the Date

**Cultivating Scientific Curiosity**
June 22-27, 2020
University of Pittsburgh
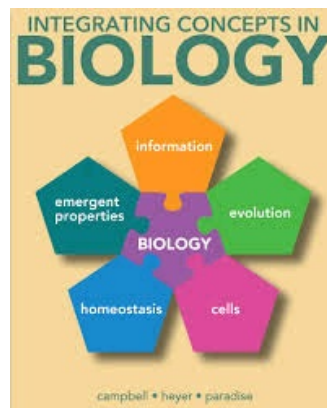Pittsburgh, PA
https://qubeshub.org/groups/summer2020

## Apply now to the QUBES Spring 2020 Faculty Mentoring Networks!

QUBES (Quantitative Undergraduate Biology Education and Synthesis) is excited to offer these semester-long professional development opportunities designed to engage you with faculty from around the country (or world!) to enhance your teaching. If you have any questions, please contact Deb Rook (deb.rook@bioquest.org), or contact the FMN-specific mentors.

## Data in Introductory Biological Sciences (DIBS) FMN

*Led by Chris Paradise, Malcolm Campbell, and Laurie Heyer*

Do you want your introductory biology students to think and act like scientists? Are interested in using data in your introductory biology course to develop quantitative reasoning and real-world problem-solving skills in your students? The three authors of Integrating Concepts in Biology (http://www.bio.davidson.edu/icb) are joining forces with QUBES to work with faculty who are interested in adapting and implementing selected cases from a wide range of topics in introductory biology using DIBS (Data in Introductory Biological Sciences). Apply by Dec 2. Visit: https://qubeshub.org/groups/dibs

## ESA Data Access FMN—Inclusive Pedagogy

*Led by Jackie Matthes and Kaitlin Stack Whitney*

ECOLOGICAL SOCIETY OF AMERICA

**esa**

The Ecological Society of America has once again teamed up with Quantitative Undergraduate Biology Education and Synthesis (QUBES), to offer a unique networking and professional development opportunity for teaching faculty interested implementing data-intensive strategies. The ESA Data Access FMN comes with the added lens of using inclusive pedagogy in the data-rich ecology classroom. With college enrollment becoming increasingly diverse, instructors find themselves needing to create environments where all students feel welcome, valued and ready to learn. Data Access FMN is ESA's first FMN devoted to increasing understanding and implementation of inclusive pedagogy in ecology classrooms.  Are there ways to approach ecological concepts and quantitative skills that are more relevant and engaging to diverse students? How can instructors tap the cultural knowledge and diverse perspectives among students to inform teaching? How might exercises or assessments look different with the inclusive pedagogy lens on?  We invite applications from faculty who are eager and open to innovations in this area and hope to generate a set of best practices that might be disseminated at the end of the FMN. Apply by Dec 4. Visit https://qubeshub.org/groups/dataaccess

## HHMI BioInteractive Data Explorer FMN

*Led by Kaitlin Bonner and Satoshi Amagai*

**hhmi BioInteractive**

Join us to develop data visualization/statistical analysis teaching modules featuring authentic scientific research data to tell exciting biological stories! This faculty mentoring network (FMN) focuses on producing a suite of data analysis modules for college introductory biology or advanced high school level biology. Modules will cover a range of topics identified to be of interest to students, based on empirical student audience research. The participants will coordinate with each other to avoid redundancy of topics, help locate data, and provide feedback to each other. The developed modules will eventually be incorporated into HHMI BioInteractive's upcoming Data Explorer App. Apply by Dec 8. Visit https://qubeshub.org/groups/hhmibiointeractive2020

## NEON Data Education Fellows Faculty Mentoring Network - Spring 2020

*Led by Megan Jones*

Interested in adding quantitative reasoning and ecological data to your classroom? Join the NEON Data Education Fellows FMN to implement existing educational materials using data from the National Ecological Observatory Network (NEON). Topics range from plant phenology to earth-atmosphere gas exchange to ecological disturbance. Already teaching with NEON data? Join the FMN to share your education resource with others and prepare it for publication. Visit
https://qubeshub.org/community/groups/neon2018

## Molecular Case Studies FMN: At the Interface of Biology and Chemistry

*Led by Shuchismita Dutta*

Are you teaching about intermolecular forces and/or biomolecular structure and function? Want your student to independently visualize, navigate, and analyze protein structures? Access ready-to-use case studies from Molecular CaseNet, developed at the interface of biology and chemistry, for introductory and advanced courses in biology, chemistry, and related disciplines.
As a participant in this FMN you will be introduced to several different Molecular Case Studies. The cases will be discussed and any of your questions/concerns about the cases can be addressed at this stage. If you are new to molecular structures and visualization, or would like to refresh your memory on how to use some of the relevant data resources, this is an excellent opportunity for you. In the second part of the FMN you have a choice of either pilot testing one of the cases in your classroom or collaborating to develop a new molecular case study. Throughout the semester you will be expected to participate in weekly virtual sessions to receive mentoring, collaborate with and support others in the network. Apply by December 6, 2019. Visit https://qubeshub.org/groups/molcasenet

## Exploring Universal Design for Learning with BIOMAAP FMN

*Led by Arietta Fleming-Davies, Andrew Hasley, Kristin Jenkins, Hayley Orndorf, Jeremy Wojdak*

**BIOMAAP**
Biology Students Math Attitudes and Anxiety Program

Quantitative skills are essential for student success in biology, and math attitudes and anxiety can have strong effects on both persistence and performance. QUBES and BIOQUEST are pleased to offer a networking and professional development opportunity from January– May 2020 for faculty interested in increasing their undergraduate students' success by alleviating math anxiety. This faculty mentoring network will familiarize faculty with information on how math attitudes and design of the learning environment can impact biology students. Participants will explore a range of tools demonstrated to address math attitudes and anxiety and adapt them to use in their own classrooms. Apply by December 13. Visit https://qubeshub.org/groups/biomaapfmn2020

## Make Teaching with R in Undergraduate Biology Less Excruciating (Make TRUBLE)

*Led by Suann Yang*

**Make TRUBLE**

This Faculty Mentoring Network is intended for undergraduate biology instructors with prior R programming experience who are interested in learning ways to teach with R effectively to students with little to no programming experience. Participants will focus on developing, implementing, and sharing modules for teaching statistical and biological concepts in R with Swirl. Swirl lessons simplify the R learning process by providing a guided, interactive experience through on-screen prompts and exercises which students answer directly in the RStudio console. Participants will learn the Swirl program, implement one existing Swirl lesson, contribute one new lesson and will leave the FMN with ready-to-use Swirl lessons covering diverse biology and data analysis concepts. Apply by December 6, 2019. Visit https://qubeshub.org/groups/make_truble2020