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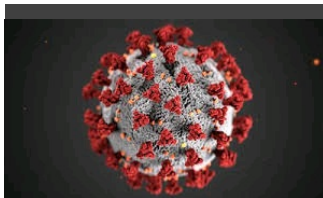
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In these mini-Newsletters, we continue to focus on the rapid, nationwide transition to online education, highlighting resources for now, and next steps for collaborations within the new normal.

- [Teaching Quantitative Biology Online: Here for the Community!](#)
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Introduction to nucleotide sequence analysis and protein modeling in MEGA and PyMol using coronavirus SARS-CoV-2



This exercise is designed to introduce a learner to how a variety of computational approaches can be used to answer biological questions and is based around coronavirus SARS-CoV-2, which caused 2019-2020 pandemic. The exercise consists of two assignments with each given in one 2.5 hours standard lab periods.

During lab 1, publicly available nucleotide sequences of SARS-CoV-2 and other viruses will be used to compare similarity and create hypotheses for the relationships between SARS-related coronaviruses from bats, pangolins, hares, and humans (SARS-CoV, SARS-CoV-2, MERS). A freely available software, MEGA (Kumar et al. 2018), will be used to compare different RNA viruses within the Coronaviridae. During lab 2, the learner will use a free for education PyMol ("The PyMOL Molecular Graphics System" 2010) software to visualize a receptor-binding domain of the spike protein of SARS-CoV-2 together with the host receptor ACE2, and label regions and amino acids important for binding to the receptor and antibody recognition.

Teaching Quantitative Biology Online: OERs, Forums, and Community



Professional societies are responding with guidance for colleges and universities as they consider everything from grades and graduation to the tenure clock. [Read the MAA's guidance](#) and share how other societies are leading!

Partners Are Sharing Resources, like SimBio, who has made an entire collection available online free. SimBio's inquiry-driven virtual labs and interactive chapters cover topics in introductory biology, ecology, evolution, and cell biology, and use built-in tools to make it easy to set up, deliver, and assess student work. If you and your course are new to SimBio, we're offering free trials of SimBio's modules this term to help instructors move courses online. For more information, please visit the [coronavirus response page](#) on the SimBio website. ([Remote Learning with SimBio - Webinar Information](#))

Teaching Quantitative Biology Online Office Hours provide an opportunity to talk with others in the community who have some experience with teaching online, quantitative biology resources, or other valuable information about teaching.

March 30 - April 23, 2020: See [here](#) for links to join and more information.

- M/W: 10:00-10:30 am PDT / 1:00-1:30 pm EDT
- Tu/Th: 7:00-7:30 am PDT / 10:00-10:30 am EDT

Interested in holding an office hour for your colleagues?
Email deb.rook@bioquest.com

[Resources for Teaching Quantitative Biology Online](#) is a collection of open education resources (OERs) that are designed to teach quantitative skills in a variety of biological contexts and will work well in an online setting with minimal adaptation. This webpage is a rapid response to the need for our community of educators to move learning online quickly. QUBES partners and individuals can share and highlight modules, as well as indicating adaptations made to existing OERs. Resources (like those listed below) are posted often. [Join the group](#) to contribute your own ideas! We expect this resource to grow quickly, so check back often.



NIMBioS Webinar Series: Mathematical modeling of malaria transmission by mosquitoes

NIMBioS is hosting a series of webinars focusing on topics at the interface of mathematics and biology that are accessible to a general audience. Learn more about upcoming webinars in the series at their [website](#).

Tuesday, April 21, at 3:30 p.m. EDT

Online, Free and Open to the Public (but you need to register for the webinar [on the website](#)!)

Title. Mathematical modeling of malaria transmission by mosquitoes



Abstract: Malaria is a disease caused by parasites from the genus *Plasmodium*. Every year, 200 million individuals experience malaria, and approximately 500,000 of these individuals die. It is well established that malaria is transmitted from person to person by mosquitoes. Yet, quantitative details of how likely a bite by an infected mosquito results in infection remains poorly understood. In my talk I will analyze experimental data in which mosquitoes, carrying *Plasmodium yoelii* sporozoites, bite individual mice, and mathematically model the likelihood of infection as a function of several parameters (number of sporozoites per mosquito, feeding time, blood take probability) that were recorded in the data. Our results suggest that infection probability depends strongly on the number of sporozoites mosquitoes carry, and less on the probing time, and is independent of whether a mosquito takes the blood meal or not. I will also discuss implications of these results for modeling epidemiological dynamics of malaria and for clinical trials of malaria vaccines.

[Dr. Vitaly Ganusov](#), Associate Professor, Microbiology, University of Tennessee, Knoxville

Preparing Educators for Deeper Learning and Equity During COVID-19



Thursday, April 23, 2020, 3 - 4 p.m. ET, [Register for the Webinar Here](#).

As school districts and universities across the nation adapt to distance learning, how are educator preparation programs responding? How are they meeting their candidates' needs right now? What are they doing to prepare for the future? In this climate of uncertainty, it is more important than ever to ensure teachers and leaders are being prepared to provide deeper learning opportunities to all students, especially those from our most vulnerable populations.

This webinar features leaders from educator preparation programs around the country who will explore pressing questions around teacher and leader preparation during the COVID-19 crisis:

- How are institutions of higher education responding to state guidance on licensing and credentialing?
- How are programs infusing social-emotional learning and trauma-informed practices in their work with candidates?
- What best practices in virtual learning are evolving to meet the specific needs of teacher and school leader candidates?

Hosted by the American Association of Colleges for Teacher Education and the Educator Preparation Laboratory, an initiative of the Learning Policy Institute and Bank Street Graduate School of Education

Decolonize DNA Day, Twitter Conference **DECOLONIZE DNA DAY**

Friday, April 24 @decolonizeDNA #DecolonizeDNADay

We are excited to announce the [Decolonize DNA Day Twitter Conference](#), which will take place on Friday, April 24, 2020. As part of larger [DNA Day celebrations](#), the conference will critically discuss the impacts of genomics and DNA on society as a whole. Especially for communities who are generally underrepresented in genomics, many have complex relationships with how genomics studies are conducted. Thus, our goal is to provide a platform for [academics](#) to voice these concerns to a broader audience.

A [Twitter Conference](#) is meant to encourage collaboration, public engagement, and to spark discussions in an accessible way. Also, this is a great moment to participate in science discourse on the day leading up to [National DNA Day](#). Hence, we hope that many will enjoy this new mode of #SciComm, or science communication.

Transforming the Conversation about Teaching Evaluation in Higher Education: Thoughts from the National Academies' Roundtable on Systemic Change in Undergraduate STEM Education

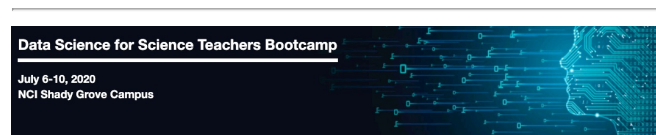
Tuesday, May 19, 2020, 11:00 am PT | 12:00 pm MT | 1:00 pm CT | 2:00 pm ET

Presenters: *Ann Austin (Michigan State University), Noah Finkelstein (University of Colorado Boulder), Kerry Brenner (National Academies), and Dea Greenhoot (University of Kansas)*



The Roundtable on Systemic Change in Undergraduate STEM Education is a group of the National Academies of Sciences, Engineering, and Medicine that brings together national experts and thought leaders representing the full spectrum of stakeholders in higher education. In September 2019 they held a working meeting on Recognizing and Evaluating Science Teaching in Higher Education in cooperation with ASCN, AAU, and TEval. This working meeting brought together people working to improve teaching evaluation to discuss their experiences and to use the resulting information to coordinate and catalyze further actions that will leverage teaching evaluation to advance the common goal of improving undergraduate STEM learning experiences. This webinar will highlight some of the examples presented at the working meeting, themes noted by participants, and opportunities for further work that will bring these ideas to a wider audience that includes campus leaders. The webinar will provide an opportunity for participants to share ideas on what kinds of resources and events would be helpful to elevating and advancing the discussion of teaching evaluation, in particular how it relates to evidence-based instruction and faculty incentives and rewards.

[Register now at this link!](#)



Data Science For Science Teachers Boot Camp

The NIH Data Science Strategic Implementation Team is pleased to announce that the application for the Data Science For Science Teachers Boot Camp is now live! This workshop will provide hands-on training for data science tools commonly used by the biomedical research community and will enable you to:

- Network with and learn from leaders in the data science field
- Discuss strategies and success stories and form a network of educators across the country
- Learn about NIH programs that support educational partnerships and STEM programs

Here is [the link for registration and more information.](#)

Online Course: Genome Engineering and CRISPR



This course will start by discussing the new CRISPR documentary, Human Nature, which is a great resource to use

with students. From there, the class (4 Thursday evening meetings) will be an in-depth discussion of CRISPR and related technologies, the benefits and drawbacks of each, and future developments in the field. The course is free and only costs the price of a donation! [More information and to sign up here.](#)

Also, don't forget that we have a new collection full of coronavirus resources on our [Build a Genome \(BAG\) QUBEShub site](#), many of which are focused on genomics and synthetic biology. Especially useful are two resources from our new network member, Nik Tsotakos, one on the design of Coronavirus diagnostic tests and one on genome alignment of different strains of viruses in the Coronaviridae family. If you are looking for online labs to perform with your students, these bioinformatics activities are ready to go!

Moving a Project to a Collaborative Space? How can QUBESHub help?

[Use this 6-question survey](#) to communicate your needs for planning. The QUBESHub Team will respond, helping to support you to take your conference or project online.

Members of the QUBES team are participating in some re-imagined conferences that will be happening through the QUBESHub. 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).

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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