

Synthetic Biology – STEM Professional Development Workshop at Oxbridge Academy, West Palm Beach, Florida

You are invited to the BioBuilder 3-day workshop at Oxbridge Academy in West Palm Beach, Florida. This professional development opportunity prepares educators to bring biological engineering and synthetic biology into their classrooms and laboratories.

**This workshop will be held from:
June 11 - 13, 2019**

The workshop will include:

- Lectures that connect the science, technology, engineering, and math aspects of these fields.
- Labs and classroom activities taught from the online www.BioBuilder.org resource and the BioBuilder textbook published by O'Reilly.
- Discussion with members of the university research community.
- Activities that address human practice questions such as the safety, security, economics and wisdom of engineering novel biological systems.
- Activities that address the nuts and bolts of running a BioBuilderClub or iGEM team.
- Attendees receive a copy of the BioBuilder textbook, all workshop classroom materials in ready to use formats, lunch each day, and a certificate of completion.

Who should apply?

This workshop is intended for:

- High school and middle school Biology and STEM teachers, including those looking for new ways to teach the AP content or for compelling material to teach college-bound students.
- College-level instructors looking for classroom and lab curricula to include in a biotechnology-style class.
- Science Club leaders, in particular anyone looking for ways to bring cutting-edge content to students with a variety of interests from math to biology to electronics.

How to apply?

- [Register online.](#)
- Tuition is \$400 when registered by April 1; \$500 after. Scholarships are available.
- A non-refundable registration/deposit fee of \$50 is due upon application, reserving your place in the workshop. Balance is due 30 days in advance of the workshop.
- **Pre-registration is required for all participants, as space is limited.**

What is Synthetic Biology?

Synthetic Biology is an emerging field that applies engineering and mathematical principles to the development of novel biological systems. These principles and technologies extend the teaching of molecular genetic techniques into real world, authentic applications. Examples of synthetic systems include bacteria that smell like bananas, and light-sensitive bacteria that can serve as pixels in a photograph. These teachable systems are included in the curriculum at Biobuilder.org.

Why teach Synthetic Biology?

Synthetic biology provides teachers and students an engineering context to learn molecular biology, genetic engineering and microbiology methods. This approach asks students to learn while designing, or testing designs of, engineered biological systems. In addition, this approach provides science teachers with a means of exploring numerous state and national technology standards that are hard to address in most science classes.

Who's teaching this workshop?



Dr. Natalie Kuldell is the Founder and Executive Director of BioBuilder. Dr. Kuldell develops discovery-based curricula drawn from current literature to engage undergraduate students in structured, reasonably authentic laboratory and project-based experiences. She completed her doctoral and post-doctoral work at Harvard Medical School, and taught at Wellesley College before joining the Department of Biological Engineering faculty at the Massachusetts Institute of Technology.



Brandon Boswell has taught AP Biology at Cypress Bay High School in Weston, Florida since 2007. He has served as the teacher lead for Local AP Credentialing in Biology in Broward County since 2014. He led a student team of inventors at his school for [Lemelson-MIT Inventteams](#) as they developed a self-powered, portable UV water filtration device. He attended the University of Florida's Center for Precollegiate Education Training ICORE on Emerging Pathogens where he developed a [Flash-based game](#) on Biotechnology techniques. He has also led a high school student group study of DNA Barcoding of invasive lionfish found in the Atlantic Ocean, and is currently supported by Bio-Rad Laboratories Inc. for this effort. In 2017, he attended a BioBuilder PD Workshop and left the workshop with the skills and motivation to start a BioBuilderClub at his school.

SPONSORS:



For more information, please email: carla@biobuilder.org.

The BioBuilder Educational Foundation is a 501(c)3 organization. Donations are tax-deductible and all proceeds go directly to funding the foundation's programs and materials.