

Professional Development Workshop @ Monsanto's Chesterfield Village Research Center in Missouri

You are invited to the **BioBuilder2016** workshop @ Monsanto in Chesterfield, Missouri. This three day professional development opportunity will prepare educators to bring biological engineering and synthetic biology into their classrooms and laboratories.

This workshop will be held from June 28th – 30th, 2016.

The workshop will include:

- Lectures that connect the engineering/science/math and technology aspects of these fields.
- Labs and classroom activities taught from the online www.BioBuilder.org resource and the new 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 BioBuilder BioDesign Club or an 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 including 45 PDPs for attending.

Who should apply?

This workshop is intended for:

- High school Biology teachers, especially those looking for new ways to teach the AP content or for compelling material to teach college-bound students after the AP exam is completed.
- 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 interests from math to biology to electronics.

How to apply?

- The application is online: <http://biobuilder.org/workshops/>
- Tuition is \$300/person. Generous scholarships are available.
- Registration fees include full tuition, lunch each day, and written materials.
- A non-refundable registration/deposit fee of \$50 is due upon application, reserving your place in a workshop. Balance is due two weeks in advance of the workshop.
- **Pre-registration is required for all participants, as space is limited.**

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.

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 BioBuilder2016?



Cheryl Immethun is a graduate student in the Department of Energy, Environmental and Chemical Engineering at Washington University in St. Louis. Inspired by teaching high school students as a volunteer, Cheryl decided to return to school so that she could teach at the university level. She has sought out opportunities to excite youth about science, including developing science kits for area middle school and high school teachers, mentoring numerous undergraduates, and mentoring WashU's iGEM team. Cheryl's Ph.D. research focuses on developing genetic circuits to regulate transcription in cyanobacteria. She has a B.S. in Mechanical Engineering and a B.S. in Environmental Science, as well as experience in the manufacturing sector.



Tom Martinez has recently completed his 35th year as a biology instructor. He currently teaches AP Biology and Biotechnology at Glenbard East High School in Lombard, Illinois. He has taught the BioBuilder curriculum for the past four years after participating in the BioBuilder workshop at UC Berkeley. Tom also leads a BioBuilder after school club that presented their posters at the BioBuilder Club Summit in Cambridge, Massachusetts.

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