

## Master BioBuilding Program @ MIT

If you attended last summer's BioBuilding Workshop @ MIT, ran one or more BioBuilder activity with your students this year and are interested in further training, then we want you back!

You are invited to the **Master BioBuilding Program @ MIT**. This week long professional development workshop will run from **July 30<sup>th</sup>- August 3<sup>rd</sup>, 2012**. Participants will leave the Master BioBuilding workshop with the skills and materials needed to run BioBuilder workshops on their own at other campuses and schools.

The program has two parts.

**Part I:** Two days of training to focus on teaching the curricular materials provided in last summer's BioBuilding Workshop. Participants will personalize lecture and laboratory content to suit their educational settings and the pool of teachers they would like to train. Part I is required of all participants and will be held on Monday, July 30, and Tuesday, July 31, 2012.

**Part II:** Three days (Wednesday, August 1 – Friday, August 3) that are also required, but offers two options:

You can work with middle school teachers interested in adapting BioBuilder for middle school teaching and learning  
OR

You can develop and videotape two classroom lessons (one lecture and one lab) using BioBuilder

If you're eager to teach other teachers in the BioBuilder curriculum, we hope you'll join us for this workshop. Attendees will receive lunch each day, parking validation and 67.5 PDPs. Attendees can then be certified as "Master BioBuilder Teachers" to carry out a BioBuilder Workshops of their own, a paid position.

### How to reserve your spot?

Send a copy of your CV and a completed application to the following address:

Dr. Natalie Kuldell  
Department of Biological Engineering, MIT  
77 Mass Ave, 16-325  
Cambridge, MA 02139

The questionnaire is online: <http://www.surveymonkey.com/s/5G6LHPZ>  
or can be downloaded: [here](#)

Applications are **due** March 16<sup>th</sup>, 2012 and applicants will be notified by **April 2<sup>nd</sup>, 2012**

Questions? [info@biobuilder.org](mailto:info@biobuilder.org)

## 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 BioBuilding2012?

### Dr. Natalie Kuldell

Natalie Kuldell teaches in the Department



of Biological Engineering at the Massachusetts Institute of Technology. She develops discovery-based curricula drawn from the 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 faculty at MIT. Natalie is the director of a web-based resource called *BioBuilder* to teach synthetic biology as well as a scientific adviser for two web-projects to teach the nature and process of science, namely *Understanding Science* and *VisionLearning*.

### Jim Dixon

Jim Dixon has been teaching Biology and



AP Biology at Sharon High School since 2004. He is recognized as a Massachusetts Master teacher, Presidential Distinguished Teacher, and holds a Nation Board Certification. Jim has a BS from Fordham University and an MS

from the State University of New York at Buffalo. In addition to teaching at Sharon High School, he is the adviser for the Science Club and manages China Exchange program. Jim is particularly interested in developing curricula and assessments that makes science curriculum more meaningful to students. He has developed science curricula with Grant Wiggins, Harvard University and MIT.

Lunchtime seminars from members of [SynBERC](#) and [MIT's Department of Biological Engineering](#) (faculty TBA)

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