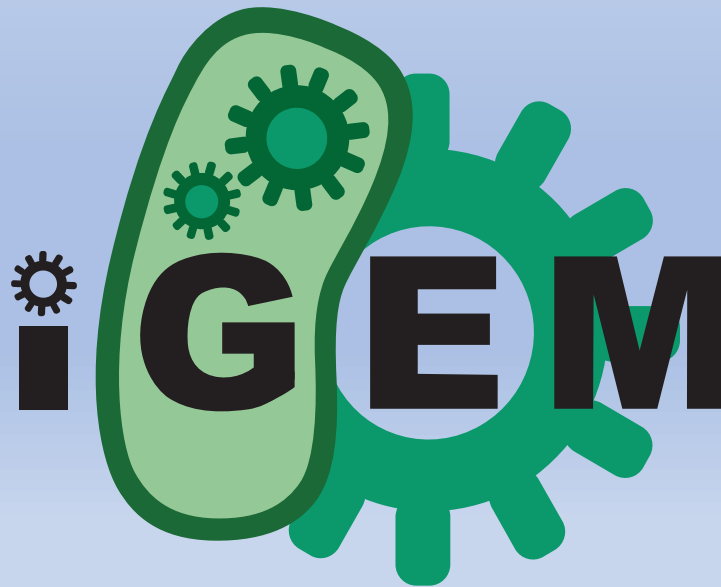


iGEM 2020

iGEM Summer Webinars: Molecular Biology, Measurement, and Modeling



Dennis Mishler
June 9th, 2020

The Measurement Committee's Summer Webinar Series



2019 Measurement Committee
(we are now twice as large!)

About me:

- Professor at the University of Texas at Austin
- Emphasis on undergraduate experiential learning and research
- Advisor/PI for the UT Austin iGEM team since 2014
- iGEM Judge since 2015
- And I am in need of a haircut!

The Measurement Committee's Summer Webinar Series

- Building an iGEM project from the ground up is a lot of work.
- No one does it on their own.
- Everyone needs some support or assistance.
- Be it a concept, a technique, or just feedback from an outside expert, we hope to be a resource you can use this summer.

We are here to help your team plan and design your project and experiments while you are undertaking your iGEM journey.

We want you to be successful and to be able to collect robust data with proper controls and measurements.

The Measurement Committee's Summer Webinar Series

This year's journey will be quite different for many of us, and so, we decided to do a series of webinars focusing on molecular biology, measurement, and modeling.

Many of us are stuck at home, but we are still a community.



Webinar Format

Week 1 - Tuesday June 16th at 10am (Boston time): Getting started

Getting started	
Where to start? What do you plan and design?	Alexis Casas - 15min
How to utilize databases effectively	Ian Schlander - 15min
Cloning strategy	Sonja Billerbeck - 15min
Q&A - Should be at the end of each 15 minutes block	15min

- Three ~15 minute blocks of content, with questions at the end of each block.
- These shorter segments will be uploaded and available for everyone to watch.
- Webinars will focus on concepts, techniques, and experimental design.

We will also:

- Link to other online content...
- Have Wiki pages related to each webinar...
- And have “Office Hours” in case you need additional assistance or feedback.

Webinar Series Schedule

Week 0 - Tuesday June 9th - 10am Boston time - Introduction to the summer webinars

Week 1 - Tuesday June 16th - 10am Boston time - Getting started

Week 2 - Tuesday June 23rd - 7am Boston time - **Modeling**: ODEs and Hill Functions

Week 2 - Tuesday June 23rd - 10am Boston time - DNA parts and basic MolBio

Week 3 - Tuesday June 30th - 7am Boston time - **Modeling** circuits with ODEs and experimental data

Week 3 - Tuesday June 30th - 10am Boston time - DNA assembly techniques

Week 4 - Tuesday July 7th - 10am Boston time - Gibson assembly and yeast

Week 5 - Tuesday July 14th - 7am Boston time - Quantifying **fluorescence** and cell count with plate readers

Week 5 - Tuesday July 14th - 10am Boston time - Cell-Free systems

Week 6 - Tuesday July 21st - 7am Boston time - Quantifying **fluorescence** and cell phenotypes with flow cytometry

Week 6 - Tuesday July 21st - 10am Boston Time - Transformation and sequencing

Week 7 - Tuesday July 28th - 10am Boston time - CRISPR

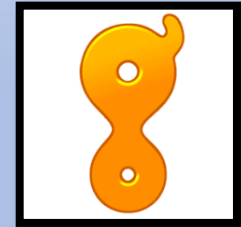
Week 8 - Tuesday August 4th - 10am Boston time - Protein characterization

All Webinars will be recorded and linked to the iGEM wiki.

Molecular Biology Webinars

What web app/tool do you prefer?

- SnapGene?
- Benchling?
- Geneious?
- SBOL?



Good news! We have committee members who will demonstrate how to use each program throughout the summer as we cover various cloning techniques.

If you use Benchling, you'll be stuck with me!

SnapGene – Ian Schlander

Geneious – Rene Inckemann

SBOL - TBD



What's Next?

Next week's session: **Getting Started**

The first session of the iGEM Measurement committee's summer webinars opens with an overview of how and where to start your project, as well as what you can plan and design. The second block will be a beginner's guide on how to utilize databases effectively in conjunction with bioinformatics tools. We will end this session with an overview of the decision making process when choosing a cloning strategy.

June 16th, 10AM (Boston time).

Contact us at: measurement@igem.org

Come to our Office Hours: 3am and 1pm (Boston time)

Every other Tuesday: June 9th, June 23rd, July 7th, etc...

All webinar information can be found at the measurement hub on the iGEM wiki: <https://2020.igem.org/Measurement>

Webinars can also be found at: <https://2020.igem.org/Calendar/Events>

