

G**CAT** Synthetic Biology Workshop 2010

Schedule

Day 1 – Thursday July 8, 2010

- 7:30 Breakfast in Commons
- 8:30 Introductions (go around room)
- Dana 146 What is synthetic biology? (discussion)
- Defining synthetic biology (Laurie)
- How is synthetic biology suited for multidisciplinary research with undergraduates? (Jeff)
- What are the goals of the workshop? (discussion - Todd)
- Our goal is to provide the environment for you to meet your goals. (go around room)
- What makes a good project?
- 1) Where is the connection to another discipline?
 - 2) What is the biological implementation?
 - 3) How can the project be communicated effectively?
 - 4) Does the project have stages and milestones?
- 9:30 Introduction of Biobrick assembly scheme, Registry (Malcolm)
- Dana 220/256 How to assemble existing parts
- How to comb the registry
- In class assignment: How would you build....?
- 10:30 Break – refreshments on 2nd floor Dana, west end of hallway
- 11:00 Synthetic biology project examples
- Dana 146 Presentations on medicine (Jeff), energy (Malcolm), the environment (Todd), technology (Laurie)

12:00 Lunch in Commons (Bill Hatfield computer scientist as guest)

1:00 Explore the 2009 iGEM Wiki (Jeff)

Dana 146

1:20 Work as pairs of participants – explore to find a topic

Dana 220/256

2:00 Report iGEM project examples explored above

Dana 220/256

3:00 Break – refreshments on 2nd floor Dana, west end of hallway

3:30 Wet lab work

Dana 146 Discuss methods for obtaining Registry parts or building new parts

Dana 220/256 Start PCR for building a new part (β -lactamase subparts)

pipet and boil oligos for assembly of new part

(*E. coli* promoter *gcvR* + RBS; clone into RFP)

5:30 Dinner at Commons

7:30 Past Synthetic Biology Projects at MWSU and Davidson

Dana 146 (BPP= Jeff, HPP Laurie, XOR = Todd, SAT = Malcolm)

End of Day 1

Day 2 Friday July 9, 2010

7:30 Breakfast in Commons

8:30 Reflect on previous day, get feedback on workshop so far and planned

Dana 146

9:15 Birds of a Feather discussions

Dana 220/256 (Bio feathers and non-Bio feathers)

10:00 Ethical issues discussion

Dana 146 (Todd: create life, playing God, environmental, bioterrorism)

10:30 Break – refreshments on 2nd floor Dana, west end of hallway

11:00 Participant pairs work on plans

Dana 220/256 Brainstorm project ideas, develop area of interest, project ideas

12:00 Lunch in Commons

Bioethicists joins us for lunch: David Perry, Andy Lustig (?), Kristie Foley, Lance Stell (?)

1:00 Discuss lab methods and practices

Dana 146 Wikis, GCATalog, sharing protocols online

Discuss what is about to come in lab

2:00 Lab work

Dana 220/256 Run PCR products on gel

Ligate oligo assembly (to cut GFP + plasmid)

Give them a mini-Registry (Todd)

Transform oligo ligation

Take gel pictures

3:00 Break – refreshments on 2nd floor Dana, west end of hallway

3:30 pairs Work in pairs on topics for project presentation/discussion

Dana 220/256 Use wiki to post projects/ make PPT

5:30 Dinner at Commons

7:30 Presentation by NSF Program Officer

Dana 146

End of Day 2

Day 3 Saturday July 10, 2010

7:00 Breakfast in Commons

8:30 Observe colonies and discuss results

Dana 220/256

9:00 Divide into two groups based on participant project topics

Dana 220/256 Allow 15 minutes for each pair for presentation/discussion/feedback

10:30 Break – refreshments on 2nd floor Dana, west end of hallway

11:00 Closing moments and workshop assessment

Dana 146 Gather belongings, transportation to airport, etc.

12:00 Workshop finished