***Name (optional): Recapping Synthetic Biology***

1. This semester, you performed a variety of molecular biology techniques. On a scale of 1-5, please indicate (mark with an **X**) how comfortable you feel with each technique, now that the semester is over:

completely comfortable, could easily execute this without help

unfamiliar, would require assistance from an instructor

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| **Technique** | **1** | **2** | **3** | **4** | **5** |
| templateless PCR |  |  |  |  |  |
| traditional PCR  (amplifying from a template) |  |  |  |  |  |
| colony screening PCR |  |  |  |  |  |
| gel electrophoresis |  |  |  |  |  |
| bacterial transformation |  |  |  |  |  |
| yeast transformation |  |  |  |  |  |
| restriction digestion |  |  |  |  |  |
| plasmid recovery |  |  |  |  |  |

1. This semester was split into two modules: Building Block Assembly and Chunk Assembly (see below). At the end of the Building Block Assembly module, we had a Troubleshooting PCR lab, where you re-set up the templateless PCR and finish PCR reactions that did not work in week 1, and we took a break halfway through the Chunk Assembly module to have a lab meeting. During the lab meeting, we analyzed our results from the linker PCR & restriction digests and talked about the ‘next steps’.

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|  | **Lab Topic** |
| **Building Block Assembly** | Building block assembly: Templateless PCR and Finish PCR |
| Building block assembly: Gel electrophoresis I |
| Building block assembly: Bacterial transformation |
| Building block assembly: DNA sequencing computer lab, Troubleshooting PCR |
| Building block assembly: Troubleshooting PCR |
| **Chunk Assembly** | Chunk assembly: Linker PCR and Restriction digest |
| Chunk assembly: Gel electrophoresis II |
| Chunk assembly: Lab meeting & Genome databases computer lab |
| Chunk assembly: Yeast transformation |
| Chunk assembly: Plasmid recovery & Bacterial transformation II |
| Chunk assembly: Colony screening PCR |
| Chunk assembly: Gel electrophoresis III |

Do you feel like this troubleshooting experience was worthwhile? Please explain.

Do you think we should have had more troubleshooting labs? Please explain.

1. As a Chemistry/Biochemistry/Biology major at Loyola, you have taken many labs. ***Prior to taking*** Synthetic Biology with Lab, did you feel the other labs accurately reflected what it means to do research? Please select an option and explain below:

*Option 1*: Yes, I believe the labs *I have previously* taken accurately reflect what it means to do real research because…

*Option 2*: Sort of. There are aspects of different labs *I have previously* taken that portray real research, including…

*Option 3:* No, the labs *I have taken previously* have not accurately reflected what it means to do real research because…

1. Synthetic Biology Lab is structured quite differently from the other labs you may have taken at Loyola. You spent this semester working on a REAL research project, as part of a worldwide team to build the yeast genome. Do you feel like the work you did this semester in Synthetic Biology Lab accurately reflected what it is like for researchers every day in lab?

*Option 1*: Yes, I believe the work I did this semester is reminiscent of what scientists do every day because…

*Option 2*: Sort of. There are aspects of Synthetic Biology lab that reflect what scientists do every day, including…

*Option 3:* No, I don’t think the work I did this semester is reminiscent of what researchers do on a day to day basis because…

1. What was the most challenging aspect of Synthetic Biology lab?
2. What did you enjoy most about Synthetic Biology lab?
3. Has your experience this semester working on a real research project changed the way you thought about research? For example, did you think you would love research and decided you hated it? Were you unaware how much troubleshooting goes into planning experiments? Please explain.
4. Has your experience this semester at all made you consider pursuing a career in research? Has your experience this semester made you consider NOT pursuing a career in research? Please explain.
5. Do you think you would have benefitted from having a paper ‘lab notebook’ this semester, or do you think BioStudio was sufficient? Please explain.
6. This semester, your lab grade was based on 5 graded assignments. How did you feel about these assignments? In place of assignments, would you have preferred quizzes? Would you have preferred to hand in graded lab “worksheets” at the completion of every lab? How would you have liked to be evaluated? Please explain.