

Proposed Project Description (Chem 430/Bioc 430), 2018-2019

Submitted By: Seth Croslow

Submission Date: 8/25/2018

Project Title: Construction of a Fluorescence Microscope Imaging using a BAM

General Information:

- **Faculty Research Advisor:** Dr. Audra Goach Sostarecz
- **Research Student Collaborators:** Brandon Allen, Kate Sulcy, and Sobhi Kazmouz
- **Other Research Collaborators:** Debbie Crans and Research Students at CSU

Proposal: During the course of this semester, and potentially throughout the academic year, I and my collaborators will first be working to finish the construction of the FlyPi fluorescence microscope. Once finished, lipid films including beginning with insulin will be imaged. We will also be working to image insulin, and other lipid monolayer films, using the LEGO Brewster Angle Microscope as well as think of potential ways to make improvements on it. These trials will be performed on a Kibron Monolayer Trough.

Instrumentation to be Used:

- Kibron Monolayer Trough
- Brewster Angle Microscope
- Fluorescence Microscope

Introductory Reading:

- Maia Chagas A, Prieto-Godino LL, Arrenberg AB, Baden T (2017) The€100lab: A 3Dprintable open-source platform for fluorescence microscopy, optogenetics, and accurate temperature control during behaviour of zebrafish, Drosophila, and Caenorhabditis elegans. PLoS Biol 15(7): e2002702. <https://doi.org/10.1371/journal.pbio.2002702>
- Johnson, S. *et al.* Surface Chemistry and Spectroscopy of Human Insulin Langmuir Monolayer. *The Journal of Physical Chemistry B* **116**, 10205–10212 (2012).

PPD Research Pledge:

I have read the Chem 430 course syllabus and understand the general structure and expectations of the research program. The above material was prepared after consultation, and in conjunction with my research advisor.

Research Student

Date

Faculty Research Advisor

Date