

## BIOCHEMISTRY BOOT CAMP

Swalm 200 and Hand Lab 1144

June 10 - 12

### PROGRAM OF EVENTS (Last Update: 6/4/2019)

All events are scheduled to take place in (*Swalm 200 and Hand Lab 1144*) unless otherwise noted. The morning sessions will be in Swalm, the afternoon sessions will be in Hand Lab. For updates and more information, please visit <https://fitzkee.chemistry.msstate.edu/bootcamp/>.

*Monday, June 10*

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*Location: Swalm Chemical Engineering Building, Room 200*

- 8:00 am “No-Frills” Breakfast  
Bagels, doughnuts, coffee, and juice
- 9:00 am Introductory Remarks Nick Fitzkee
- 9:05 am **Session 1:** Protein Structure Ryan Williams  
Primary, secondary, tertiary structure; origins of function
- 10:20 am Break
- 10:30 am **Session 2:** Protein Properties and Online-Databases Nick Fitzkee  
Computer tools for understanding proteins; ExPASy, Entrez
- 11:50 am Group Photo
- 12:00 pm Break for Lunch (on your own)

*Location: Hand Lab, Room 1144*

- 1:30 pm **Session 3:** Introduction to UNIX Jerrano Bowleg  
Filesystem, running programs, X-windows, working with files
- 2:50 pm Break
- 3:00 pm **Session 4:** Model Fitting and GnuPlot Kayla McConnell  
Model basics, uncertainties and errors, chi-squared
- 4:30 pm Discussion and Day 1 Wrap-Up Participants  
**Take Home Lab:** GNUPlot for Chemists
- 5:00 pm Break for Dinner (on your own)

*Tuesday, June 11*

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*Location: Swalm Chemical Engineering Building, Room 200*

**Session 5:** Working in the Lab: Laboratory Safety and Waste Handling at MSU

9:00 am	Laboratory Safety	Matt Thomas, EHS
10:30 am	Break	
10:40 am	Chemical Waste Disposal at MSU	Ben Sharpe, EHS
11:00 am	<b>Session 6:</b> Publication-Quality Graphics Excel Tricks, Learning the GIMP and InkScape	Nick Fitzkee
11:50 am	Break for Lunch (on your own)	

*Location: Hand Lab, Room 1144*

1:00 pm	<b>Session 7:</b> DNA Structure and Properties Basic properties, PCR, predicting melting temperatures	Siddik Alom
2:20 pm	Break	
2:30 pm	<b>Session 8:</b> The PDB and Molecular Visualization Using PyMOL for analysis and figures	Nick Fitzkee
3:50 pm	Break	
4:00 pm	<b>Session 9:</b> Keeping a Lab Notebook	Suhas Tikole
4:50 pm	Discussion and Day 2 Wrap-Up <b>Take Home Lab:</b> Practice Using PyMOL	Participants
5:00 pm	Break for Dinner (on your own)	

*Wednesday, June 12*

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*Location: Swalm Chemical Engineering Building, Room 200*

9:00 am	<b>Session 10:</b> Basic Bioinformatics Homology, sequence alignment, and BLAST	Nick Fitzkee
10:20 am	Break	
10:30 am	<b>Session 11:</b> Literature Databases and EndNote Constructing a library, Getting a perfect bibliography	Becca Hill
11:50 am	Survey and Day 3 Wrap-Up	Participants
12:00 pm	Depart	