

BIOCHEMISTRY BOOT CAMP

Hand Lab, Room 3336

June 6 - 8

FINAL PROGRAM OF EVENTS (Last Update: 6/1/2018)

All events are scheduled to take place in **Hand Lab Room 3336** (third floor) unless otherwise noted. Please note this room is different from originally planned. For updates and more information, please visit <http://fitzkee.chemistry.msstate.edu/bootcamp/>.

Wednesday, June 6

- 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 Dinusha Jinasena
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)
- 1:30 pm **Session 3:** Introduction to UNIX Nick Fitzkee
Filesystem, running programs, X-windows, working with files
- 2:50 pm Break
- 3:00 pm **Session 4:** Model Fitting and GnuPlot Nick Fitzkee
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)

Thursday, June 7

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 **Session 6: Publication-Quality Graphics** Nick Fitzkee
Excel Tricks, Learning the GIMP and InkScape
- 11:50 am Break for Lunch (on your own)
- 1:00 pm **Session 7: DNA Structure and Properties** Kayla McConnell
Basic properties, PCR, predicting melting temperatures
- 2:20 pm Break
- 2:30 pm **Session 8: The PDB and Molecular Visualization** Nick Fitzkee
Using PyMOL for analysis and figures
- 3:50 pm Break
- 4:00 pm **Session 9: Keeping a Lab Notebook** Becca Hill
- 4:50 pm Discussion and Day 2 Wrap-Up Participants
Take Home Lab: Practice Using PyMOL
- 5:00 pm Break for Dinner (on your own)

Friday, June 8

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