



**The Center for Brains
Minds and Machines**

Quantitative Methods Workshop: Theory and practice

January 2 - 9, 2016

All lunches and dinners will be in the Atrium of building 46 (Neuroscience Building)

Saturday and Sunday computer labs will be in Room 26-152

All morning lectures will be in the Singleton Auditorium (Room 46-3002)

Monday and Wednesday afternoon sessions will be in Room 32-082 (basement of Stata Center)

Tuesday, Thursday and Friday afternoon sessions will be in ROOM 32-124 (first floor of Stata Center)

SATURDAY JANUARY 2	WORKSHOP OVERVIEW / INTRODUCTION to MATLAB
11:45- 12:45 PM	Lunch in atrium of building 46
1:00 PM- 1:30 PM	Dr. Mandana Sassanfar: Welcome and Workshop Overview
1:30 – 4:30 PM	Talmo Pereira “A principled introduction to MATLAB” (26-152)
4:45 - 5:30 PM	Graduate Student Panel
5:30-6:30 PM	Dinner in Atrium

SUNDAY JANUARY 3	INTRODUCTION to MATLAB: PART II
10:00 – 12:00 AM	Talmo Pereira "What can you do with computational tools anyway?" (26-152)
12:15 – 1:15 PM	LUNCH in Atrium with graduate students
1:30 -4:00 PM	Talmo Pereira /Alejandro Vientos “A principled introduction to MATLAB-2”
4:15- 5:00 PM	Campus tour (weather permitting)
5:30 -6:30 PM	Networking Dinner

MONDAY JANUARY 4	COMPUTATIONAL NEUROSCIENCE : fMRI
9:00 - 9:30 AM	Review and discussion
9:30 -11:30 AM	Dr. Stefano Anzellotti “Investigating interactions between regions of the human brain” (46-3002)
11:45 -12:45 PM	LUNCH with Prof. Hazel Sive, Prof. Mark Harnnet, Prof. Cathy Drennan
1:00 - 4:00 PM	Idan Blank "fMRI Data analysis using MATLAB” (32-082)
4:15 - 5:15 PM	Lab tours
5:30- 6:30 PM	Dinner and seminar

TUESDAY JANUARY 5	MACHINE LEARNING
9:00 - 9:30 AM	Review and discussion
9:30 -10:30 AM	Seminar: Dr. Pedro Feliciano-Ramos “The Role of Synaptic Transmission in Neurological Disorders.” (46-3002)
10:30 -11:30 AM	Lecture: Dr. Carmen Valera ”Introduction to Systems Neuroscience.”
11:45 -12:45 PM	LUNCH with, Prof. Gabriel Kreiman. Prof. Ellen Hildreth, Dr. Carmen Valera
1:00 – 2:30 PM	Dr. Leyla Isik “Machine Learning applications in neuroscience”
2:45- 5:15 PM	Owen Andrews "Analysis of RNA polymerase clustering using MATLAB"
5:30 - 6:30 PM	Networking dinner in Atrium

WEDNESDAY JANUARY 6 NEUROSCIENCE: Electrophysiology
9:00 - 9:30 AM Review and discussion
9:30 -11:30 AM **Prof. Michale Fee:** Neural circuits (46-3002)
11:45 -12:45 PM LUNCH with Prof. Yingxi Lin, Prof. Kay Tye, Prof. Wendy Gilbert
1:00 - 3:00 PM **Emily Mackevicius** “ Time series data: Spectral analysis & cross Correlations”
3:00 – 5:00 PM **Praneeth Namburi** “Spike Analysis using MATLAB” (32-082)
5:30 – 6:30 PM Networking Dinner

THURSDAY JANUARY 7 COMPUTATIONAL NEUROSCIENCE: Calcium imaging
9:00 - 9:30 AM Review and discussion
9:30 -12:00 PM **Chen Sun.** “MATLAB application in imaging data analysis.”
12:15 -1:15 PM LUNCH with Prof Amy Keating, Prof. Graham Walker
1:30- 4:30 PM **Dr, Duan Duan** “Introduction to Python with applications”
4:45 – 5:15 PM **Mandana Sassanfar:** The biology/BCS/CBMM summer program
5:30- 6:30 PM Networking Dinner

FRIDAY, JANUARY 8 BIOINFORMATICS and GENOMICS
9:00 - 9:30 AM Review and discussion
9:30 -11:30 AM **Prof. Gene-Wei Li** “Quantifying gene expression” (46-3002)
11:45 -12:45 PM LUNCH with Prof Troy Littleton, Prof. Ed Boyden
1:00 –2:00 PM **Prof. Paul Blainey** “ Statistics in Biology.” (46-3002)
2:30 – 5:00 PM **Dr. Athma Pai:** "Bioinformatic analysis of mRNA splicing in RNA-seq data using Python" (32-124)
5:30 – 6:30 PM Networking Dinner

SATURDAY, JANUARY 9 REFLECTIONS
9:00- 11: 00 AM General discussion/presentations
Workshop Survey
Future plans