

Schedule for BME 6350 / 5350 (Fall 2024)

	Date		Topic	Due	Reading Author	PMID	Title
1	Tuesday	8/27	Course overview				
2	Thursday	8/29	Neurons	*			
3	Tuesday	9/3	Brain circuits				
4	Thursday	9/5	Classic methods	*			
5	Tuesday	9/10	Neural coding				
6	Thursday	9/12	Tutorial for PS1		Niell	18650330	Highly selective receptive fields in mouse visual cortex
7	Tuesday	9/17	Imaging methods				
8	Thursday	9/19	Readout	*	Jun	29120427	Fully integrated silicon probes for high-density recording of neural activity
9	Tuesday	9/24	Readout		PS1 Cardin	33058764	Mesoscopic imaging: shining a wide light on large-scale neural dynamics
10	Thursday	9/26	Readout	*	Svoboda	16772166	Principles of two-photon excitation microscopy and its applications to neuroscience
11	Tuesday	10/1	Readout		Luan	37289556	Emerging penetrating neural electrodes: in pursuit of large scale and longevity
12	Thursday	10/3	Readout	*	Kleinfeld	31495645	Can one concurrently record electrical spikes from every neuron in a mammalian brain?
13	Tuesday	10/8	Readout		Pereira	33169033	Quantifying behavior to understand the brain
14	Thursday	10/10	Review for Prelim 1	*			
15	Tuesday	10/15	Prelim Exam				
16	Thursday	10/17	Control	*	Krauss	33244188	Technology of deep brain stimulation: current status and future directions
17	Tuesday	10/22	Control		Challis	35440143	Adeno-associated virus toolkit to target diverse brain cells
18	Thursday	10/24	Tutorial for PS2		Schwartz	16889482	Spike-triggered neural characterization
19	Tuesday	10/29	Control		Emiliani	37933248	Optogenetics for light control of biological systems
20	Thursday	10/31	Control	*	Roth	26889809	DREADDs for neuroscientists
21	Tuesday	11/5	Control		PS2 Hallett	17640522	Transcranial magnetic stimulation: a primer
22	Thursday	11/7	Control	*	Rabut	33058769	Ultrasound technologies for imaging and modulating neural activity
23	Tuesday	11/12	Brain-machine interface		Ganguly	19621062	Emergence of a stable cortical map for neuroprosthetic control
24	Thursday	11/14	Closed-loop stimulation	*	Alagapan	37730990	Cingulate dynamics track depression recovery with deep brain stimulation
25	Tuesday	11/19	Review for Prelim 2				
26	Thursday	11/21	Prelim Exam				
27	Tuesday	11/26	Neuroethics	*	Robinson	35671758	Building a culture of responsible neurotech: Neuroethics as socio-technical challenges
	Thursday	11/28	Thanksgiving				
28	Tuesday	12/3	Latest technologies	*			
29	Thursday	12/5	Latest technologies	*			

* exercise at the end of class