Schedule for BME 6350 (Fall 2025)

	Date		Topic	Due		Reading		
						Author	PMID	Title
1	Tuesday	8/26	Course overview					
2	Thursday	8/28	Intro - neurons and synapses	*				
3	Tuesday	9/2	Intro - neural circuits					
4	Thursday	9/4	Intro - classic methods	*				
5	Tuesday	9/9	Intro - neural coding					
6	Thursday	9/11	Tutorial for PS1 and PS2			Niell	18650330	Highly selective receptive fields in mouse visual cortex
7	Tuesday	9/16	Intro - fluorescence imaging					
8	Thursday	9/18	High-density electrodes	*	PS1	Jun	29120427	Fully integrated silicon probes for high-density recording of neural activity
9	Tuesday	9/23	Mesoscale imaging					
10	Thursday	9/25	Two-photon microscopy	*		Svoboda	16772166	Principles of two-photon excitation microscopy and its applications to neuroscience
11	Tuesday	9/30	Flexible electrodes			Luan	37289556	Emerging penetrating neural electrodes: in pursuit of large scale and longevity
12	Thursday	10/2	Neural data analysis	*	PS2	Lazebnik	12242150	Can a biologist fix a radio?
13	Tuesday	10/7	Quantifying behavior			Pereira	33169033	Quantifying behavior to understand the brain
14	Thursday	10/9	Prelim Exam	*				
	Tuesday	10/14	Fall break					
15	Thursday	10/16	Deep brain stimulation	*		Krauss	33244188	Technology of deep brain stimulation: current status and future directions
16	Tuesday	10/21	Viruses			Bedbrook	29709207	Viral strategies for targeting the central and peripheral nervous systems
17	Thursday	10/23	Tutorial for PS3	*		Schwartz	16889482	Spike-triggered neural characterization
18	Tuesday	10/28	Optogenetics			Boyden	16116447	Millisecond-timescale, genetically targeted optical control of neural activity
19	Thursday	10/30	Chemogenetics	*		Roth	26889809	DREADDs for neuroscientists
20	Tuesday	11/4	Transcranial magnetic stimulation			Hallett	17640522	Transcranial magnetic stimulation: a primer
21	Thursday	11/6	Ultrasound	*	PS3	Rabut	33058769	Ultrasound technologies for imaging and modulating neural activity
22	Tuesday	11/11	Brain-machine interface			Ganguly	19621062	Emergence of a stable cortical map for neuroprosthetic control
23	Thursday	11/13	Brain-machine interface	*		Morgan stanley		Brain computer inerface primer: the next big medtech opportunity?
24	Tuesday	11/18	Brain-machine interface			Bensmaia	33230305	Restoration of sensory information via bionic hands
25	Thursday	11/20	Prelim Exam					
26	Tuesday	11/25	Neuroethics			Nature		Abandoned: the human cost of neurotechnology failure
	Thursday	11/27	Thanksgiving					
27	Tuesday	12/2	Final presentations	*				
28	Thursday	12/4	Final presentations	*	FR			

* exercise at the end of class