



## SHORT COURSE 1

### Neural Prosthetics and Brain Machine Interfaces

Organized by Adrienne Fairhall, PhD, and Charles Liu, MD, PhD

Friday, October 18 • 8:30 a.m.–6:00 p.m. • Location: McCormick Place • Room: S100A

TIME	TOPIC	SPEAKER	
<b>8–8:30 a.m. • CHECK-IN</b>			
8:30–8:40 a.m.	Opening Remarks	Adrienne Fairhall, PhD • University of Washington and Charles Liu, MD, PhD • University of Southern California	
8:40–9:30 a.m.	Brain Computer Interfaces: Why Not Better?	John Donoghue, PhD • Brown University	
9:30–10:20 a.m.	Closed-Loop Techniques for Motor Brain-Computer Interfaces	Amy Orsborn, PhD • University of Washington	
<b>10:20–10:40 a.m. • BREAK</b>			
10:40–11:30 a.m.	How to Decode Intention	Richard A. Anderson, PhD • California Institute of Technology	
11:30–12:20 a.m.	Neural Decoding and Control of Multiscale Brain Networks: From Motor to Mood	Maryam Shanechi, PhD • University of Southern California	
<b>12:20–1:20 p.m. • LUNCH • ROOM S102</b>			
1:20–2:10 p.m.	Restoring the Sense of Touch Through Microstimulation of Somatosensory Cortex	Sliman Bensmaia, PhD • University of Chicago	
2:10–3 p.m.	Restoration of Walking with Brain-Computer Interfaces	Zoran Nenadic, PhD • University of California, Irvine	
3–3:50 p.m.	Economics for BCI, and the Implications for Translation	Tim Denison, PhD • University of Oxford	
3:50–4 p.m.	Summary and Introduction of Breakout Sessions	Adrienne Fairhall, PhD, and Charles Liu, MD, PhD	
<b>4–4:15 p.m. • BREAK</b>			
<b>AFTERNOON BREAKOUT SESSIONS • PARTICIPANTS SELECT FIRST DISCUSSION GROUPS AT 4:15 p.m.</b>			
TIME	BREAKOUT SESSIONS	SPEAKERS	ROOM
4:15–5 p.m.	<b>Group 1:</b> Translation to Commercial Devices	Tim Denison, PhD, Charles Liu, MD, PhD, Richard Andersen, PhD, and Zoran Nenadic, PhD	401A
	<b>Group 2:</b> Neuroethics	Winston Chiong, MD, PhD, John Donoghue, PhD and Adrienne Fairhall, PhD	401BC
	<b>Group 3:</b> Necessary Precision of Encoding/Decoding Models	Maryam Shanechi, PhD, Sliman Bensmaia, PhD and Amy Orsborn, PhD	401D
<b>5–5:15 p.m. • BREAK</b>			
<b>AFTERNOON BREAKOUT SESSIONS • PARTICIPANTS SELECT SECOND DISCUSSION GROUPS AT 5:15 p.m.</b>			
5:15–6 p.m.	<b>Group 1:</b> Translation to Commercial Devices	Tim Denison, PhD, Charles Liu, MD, PhD, and John Donoghue, PhD	401A
	<b>Group 2:</b> Neuroethics	Winston Chiong, MD, PhD, Richard Andersen, PhD, and Zoran Nenadic, PhD	401BC
	<b>Group 3:</b> Necessary Precision of Encoding/Decoding Models	Maryam Shanechi, PhD, Sliman Bensmaia, PhD, Amy Orsborn, PhD and Adrienne Fairhall, PhD	401D