



NEUROSCIENCE
2014

SHORT COURSE #1

Advances in Multi-Neuronal Monitoring of Brain Activity

Organized by: Prakash Kara, PhD

Friday, November 14, 2014

8 a.m. – 6 p.m.

Location: Washington E. Washington Convention Center

Room: Ballroom A

Washington, DC

TIME	AGENDA TOPICS	SPEAKER
7:30 – 8 a.m.	CHECK-IN	
8 – 8:10 a.m.	Opening Remarks	Prakash Kara, PhD <i>Medical University of South Carolina</i>
8:10 – 8:55 a.m.	Fluorescent genetically-encoded sensors for imaging neural activity	Douglas Kim, PhD <i>Howard Hughes Medical Institute</i>
8:55 – 9:40 a.m.	Simultaneous two-photon calcium imaging of entire cortical columns in the mouse	Mark Andermann, PhD <i>Harvard University</i>
9:40 – 9:55 a.m.	MORNING BREAK	
9:55 – 10:40 a.m.	Two-photon calcium imaging in the macaque monkey	Kristina Nielsen, PhD <i>Johns Hopkins University</i>
10:40 – 11:25 a.m.	Multiplexed two-photon imaging across extended cortical circuitry	Spencer Smith, PhD <i>The University of North Carolina at Chapel Hill</i>
11:25 a.m. – 12:10 p.m.	Fast 3D in vivo imaging of neuronal activity with subcellular resolution in large tissue volumes	Balázs Rózsa, MD/PhD <i>Hungarian Academy of Sciences</i>
12:10 – 1:10 p.m.	LUNCH: Room 151 AB	
1:10 – 1:55 p.m.	Truly simultaneous imaging of neural activity in three dimensions	Rafael Yuste, MD/PhD <i>Columbia University</i>
1:55 – 2:40 p.m.	Local circuit analysis with integrated large-scale recording of neuronal activity and optogenetics	György Buzsáki, MD/PhD <i>New York University</i>
2:40 – 3:40 p.m.	SUMMARY, DISCUSSION, BREAKOUT GUIDE	
3:40 – 4 p.m.	AFTERNOON BREAK	



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AFTERNOON BREAKOUT SESSIONS

Participants select one discussion group at 4 p.m. and one at 5 p.m.

TIME	THEME	ROOM
4 – 5 p.m.	BREAKOUT SESSIONS	
	GROUP 1 – Optimizing the biology: sensors, dyes, surgery Douglas Kim, PhD Mark Andermann, PhD Kristina Nielsen, PhD Prakash Kara, PhD	143A
	GROUP 2 – Hardware finesse: electrodes, optics, scanned vs. scanless imaging Spencer Smith, PhD Rafael Yuste, MD/PhD Balázs Rózsa, MD/PhD György Buzsáki, MD/PhD	143B
5 – 6 p.m.	BREAKOUT SESSIONS REPEAT	



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