MRS/Kavli Future of Materials Workshop:
Brain-Machine Interfaces: Materials to Clinical Translation
Presented by MRS Bulletin
Saturday, April 27, 2019, 8:00 am-4:30 pm
Sheraton Grand Phoenix Hotel, Second Level Paradise Valley
Phoenix, Arizona

Chair: Chris Bettinger (Carnegie Mellon University)

Program

7:30-8:30a Registration & Breakfast

8:30-9:00a Introductions and Goals for Workshop
Kavli Foundation Representative
MRS Representative
Chair

9:00-10:45
Topic #1: Novel Materials and Biocompatibility of Brain-Machine Interfaces
Moderator: **Chris Bettinger, Carnegie Mellon University**

25-minute presentations

Speaker 1: In vivo electrode biocompatibility
Takashi Kozai, University of Pittsburgh

Speaker 2: Flexible electronics and manufacturing
Martin Karltenbrunner, Johannes Kepler University Linz

Speaker 3: Flexible electronics for neural recording
Walter Voit, The University of Texas at Dallas

Panel discussion: 30 minutes

10:45-11:15a Coffee break

11:15a-1:00p
Topic #2: Non-Conventional Approaches to Brain-Machine Interfaces
Moderator: **Doug Weber, University of Pittsburgh**

25-minute presentations

Speaker 1: Optical interfaces and nanomaterials
Bozhi Tian, University of Chicago

Speaker 2: Ultrasound and MRI contrast agents
Mikhail Shapiro, Caltech

Speaker 3: Transparent probes and optical imaging
Duygu Kuzum, University of California, San Diego

Panel discussion: 30 minutes

1:00-2:00p Lunch and informal discussion [Open podium session]

2:00-3:45p
Topic #3: Applied and Translational Aspects of Brain-Machine Interfaces
Moderator: **Roozbeh Ghaffari, Northwestern University**

25-minute presentations

Speaker 1: Clinical use of flexible organic electronic interfaces
George Malliaras, University of Cambridge, UK

Speaker 2: Flexible electronics for PNI
Ellis Meng, University of Southern California

Speaker 3: BMI for motor control
Andy Schwartz, University of Pittsburgh

Panel discussion: 30 minutes

3:45-4:30p Review and concluding remarks