

## MRS/Kavli Future of Materials: Biosensors and Biodiagnostics Workshop

*Presented by MRS Bulletin*

8 am-5 pm, December 3, 2016

Commonwealth Room, Boston Sheraton Hotel, Boston, MA

### PROGRAM

#### AM Session: *In Vivo* Sensors and Probes (8 am-noon)

8:00 Breakfast and registration

9:00 Introduction – Nathan Gianneschi (Chair)

9:10 Summary of opportunity space for biosensor research – David Walt (Chair)

**AM Talks:** Clinical Perspectives, multimodal imaging opportunities, cellular tracking and expression profiling, imaging cellular processes

9:30 Robert Mattrey

10:00 Eric Ahrens: *Designing Novel Imaging Probes and Methods for Clinical Fluorine-19 MRI Cell Tracking*

10:30 Break

10:40 Adam Cohen: *Engineering Electrically Active Tissues*

11:10 Panel Discussion – Trends, challenges, opportunities, and high impact collaborations

11:50 Wrap-up of AM Session

#### Working Lunch (12:15-1:15 pm)

Talk by Hongkun Park: *CMOS Nanoelectrode Array for All-Electrical Intracellular Electrophysiological Imaging*

#### PM Session: *Ex Vivo* or *In vitro* Sensors and Probes (1:30-5 pm)

1:30 Summary of opportunity space for *Ex Vivo* or *In vitro* Sensors and Probes - Nathan Gianneschi

**PM Talks:** *In vitro* diagnostics with advanced nanomaterials, Novel detection strategies, Portable, sensitive detection strategies

1:45 Tim Swager: *Dynamic Droplets for Biosensing*

2:15 Charles Mace: *Using Paper-Based Microfluidic Devices to Bring Hematology to the Point-of Care*

2:45 Shana Kelley: *Biomolecular Detection using 3D Electrodes*

3:15 Break

3:30 Panel Discussion – Trends, challenges, opportunities, and high impact collaborations

4:30 Wrap-up of PM Session

#### **4:45 Concluding Remarks & Wrap-Up of Workshop**

- Nathan Gianneschi and David Walt