

THE  KAVLI FOUNDATION

[Key Events](#) in the Formation of the BRAIN Initiative
September 2011 – April 2013

Date	Event	Outcome	Documents
Jan 2013	9 th Kavli Futures Symposium: The Intersection of Nanoscience and Neuroscience at UC Berkeley		Agenda Participants



**9th Kavli Futures Symposium: The Intersection of Nanoscience
and Neuroscience at UC Berkeley**

David Brower Center, 2150 Allston Way, Berkeley, CA 94704

January 10 - 11, 2013

Organizers:

John Ngai

Helen Wills Neuroscience Institute

Carolyn Bertozzi & Alex Zettl

Berkeley Nanosciences and Nanoengineering Institute

University of California

Berkeley, California 94720

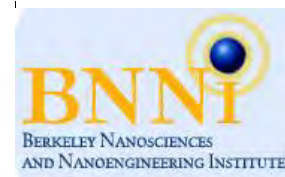
Sponsors:

The Kavli Foundation

Office of the Vice Chancellor for Research

Helen Wills Neuroscience Institute

Berkeley Nanosciences and Nanoengineering Institute



Thursday, January 10, 2013

8:15 – 8:45 am – Registration & Breakfast

8:45 am – Opening Remarks

CELLS & MOLECULES - Session Chair: David Schaffer

9:00 am - **Sanjay Kumar, UC Berkeley**, “Controlling CNS tumor and stem cell function through nanoscale physical signals”

9:20 am - **Ricardo Dolmetsch, Stanford/Allen Institute**, “Using human stem cells to study neurodevelopment and autism”

9:40 am - **Dan Minor, UC San Francisco**, “Ion channels - structure-function and the search for small molecule modulators”

10:00 am - **Tobias Meyer, Stanford**, “Membrane curvature and cell migration”

10:20 am – Discussion

10:30 am – 11:00 am – Break in the Hazel Wolf Gallery

MATERIALS & WIRELESS INTERFACES - Session Chair: Alex Zettl

11:00 am - **Ali Javey, UC Berkeley**, “Artificial electronic skin”

11:20 am - **Ana Arias, UC Berkeley**, “Printed flexible electronics based on solution processed materials”

11:40 am – **Ada Poon, Stanford**, “Emerging wireless applications in Biomedicine”

12:00 pm - **Jan Rabaey, UC Berkeley**, “Neuro-electronics - where nanotechnology and neuroscience meet”

12:20 pm – Discussion

12:30 pm – 1:30 pm – Lunch in the Hazel Wolf Gallery

OPTICAL SWITCHES & OPTICAL PROBES OF CELLULAR FUNCTION - Session Chair: Ehud Isacoff

1:30 pm – **Richard Kramer, UC Berkeley**, “Inventing optical nanoswitches for controlling nervous system function with light”

1:50 pm – **Luke Lee, UC Berkeley**, “Photonic gene circuits”

2:10 pm – **Shimon Weiss, UCLA**, “Towards 'optogenetics' with non-genetic inorganic nanoparticles”

2:30 pm – **Yi Cui, Stanford**, “Nanopillars as electrical and optical probes interfacing with cells”

2:50 pm – Discussion

3:00 pm – 3:30 pm – Break in the Hazel Wolf Gallery

NEURAL CIRCUITS: BASIC PROPERTIES & APPLICATIONS - Session Chair: Marla Feller

3:30 pm – **Hillel Adesnik, UC Berkeley**, “Cracking the neural codes of perception”

3:50 pm – **Yang Dan, UC Berkeley**, “Basal forebrain modulation of brain state and visual processing”

4:10 pm – **Jose Carmena, UC Berkeley**, “Neural adaptations to a brain-machine interface”

4:30 pm – **Michael DeWeese, UC Berkeley**, “Prospects for and potential benefits of massively parallel recordings in the brain using nano-scale wires

4:50 pm – **Edward Chang, UC San Francisco**, “Functional microdissection of human speech cortex circuitry”

5:10 pm – Discussion

5:30 pm – 7:00 pm – Reception in the Hazel Wolf Gallery

Friday, January 11, 2013

8:30 am - 9:00 am - Breakfast in the Hazel Wolf Gallery

NEURAL THEORY, COMPUTATION & MODELING - Session Chair: Frederic Theunissen

9:00 am - **Stanley Williams, Hewlett Packard**, "Cognizant Systems: Brain-inspired software and hardware from the cognome and connectome"

9:20 am - **Jeff Hawkins, Numenta**, "Progress in machine intelligence based on cortical modeling: implications for new hardware architectures"

9:40 am - **Friedrich Sommer, UC Berkeley**, "Leveraging nano-tech powered brain activity mapping and parallel computing"

10:00 am - **Jack Gallant, UC Berkeley**, "The coming age of big data in systems and cognitive neuroscience"

10:20 am - **Philip Wong, Stanford**, "Electronic synaptic devices"

10:40 am - Discussion

10:50 am - 11:20 am Break in the Hazel Wolf Gallery

IMAGING - Session Chair: Benjamin Inglis

11:20 am - **David Feinberg, UC Berkeley**, "Ultra-fast MRI of the human brain for the Human Connectome Project"

11:40 am - **Steven Conolly, UC Berkeley**, "Magnetic nano-particle imaging for kidney-safe diagnosis of cardiovascular disease, stroke and cancer"

12:00 pm - **Mark Schnitzer, Stanford**, "Visualizing the neuronal orchestra: Imaging large-scale neural dynamics in freely behaving mice"

12:20 pm - **Carolyn Larabell, Lawrence Berkeley Laboratory**, "Putting molecules in context using correlated fluorescence and x-ray tomography"

12:40 pm - Discussion

12:50 pm - 1:45 pm - Lunch in the Hazel Wolf Gallery

1:45 pm - 3:45 pm - Breakout groups

3:45 pm - 4:00 pm - Break in Hazel Wolf Gallery

4:00 pm - 5:00 pm - Closing Discussion

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January 10-11, 2013

Registered Attendees

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Registered Attendees

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