

AFOSR / ONR Joint Graphene Program Review

Dr. Harold Weinstein | November 4-7, 2013 | Arlington, VA

Basic Research Innovation Collaboration Center (BRICC)
900 North Glebe Road | 2nd Floor – Ballston Room
Arlington, VA 22203

Agenda Day 1 - Monday, November 4, 2013

Time	Topic	Speaker
7:00-8:00	Registration	
8:00-8:35	Berkeley/Rice MURI Overview	Mike Crommie UC Berkeley
8:35-9:00	Rebar Graphene and Controlled Multilayer Graphene Structures	Jim Tour Rice University
9:00-9:25	Manipulation and Imaging of Graphene Terminations and Interfaces	Alex Zettl UC Berkeley
9:25-9:50	Growth and Structure of Non-Flat Graphene	Boris Yakobson Rice University
9:50-10:20	BREAK	
10:20-10:45	Optical Spectroscopy of Graphene on BN	Feng Wang UC Berkeley
10:45-11:10	Screening in Graphene	Alessandra Lanzara UC Berkeley
11:10-11:35	Theory of Electronic and Optical Properties of Graphene and Graphene Structures	Steven Louie UC Berkeley
11:35-12:00	Graphene-based Hybrid Atomic Layers and their Characterization	Pulickel Ajayan Rice University
12:00-12:25	Graphene as a Tunable Molecular Platform	Mike Crommie UC Berkeley
12:25-1:30	LUNCH	
1:30-1:48	Maryland/Columbia/Stanford/Florida MURI Overview	Michael Fuhrer University of Maryland
1:48-2:16	The Theoretical Renormalizability and the Experimental Observability of Graphene Many-body Effects	Sankar Das Sarma University of Maryland
2:16-2:44	Recent Progress on Graphene Nanoribbons	Hong Jie Dai Stanford University
2:44-3:12	Device Simulations of Nanostructured Graphene	Jing Guo University of Florida
3:12-3:42	BREAK	
3:42-4:10	Synthesis and Characterization of Graphene Layers	Aron Pinczuk Columbia University
4:10-4:38	Chemical Nanopatterning of Graphene Structures	David Goldhaber-Gordon Stanford
4:38-5:06	Scanned-probe Studies of Physical and Chemical Modification of 2D Materials	Bill Cullen University of Maryland
5:06-5:34	Spectroscopic Studies of Interactions in Graphene	Tony Heinz Columbia University

5:34-6:02	Electron Transport in Graphene Nanostructures	Philip Kim Columbia University
6:02-6:30	Graphene Photonics	Michael Fuhrer University of Maryland
6:30-7:00	Government Caucus/Feedback	Michael Fuhrer University of Maryland
7:00	MEETING ADJOURNED FOR THE DAY (dinner on your own)	

Agenda Day 2 - Tuesday, November 5, 2013		
Time	Topic	Speaker
7:00-8:00	Registration	
8:00-8:20	MIT/Harvard/BU MURI Overview	Michael Strano MIT (PI)
8:20-8:45	CVD Growth of Graphene	Jing Kong MIT
8:45-9:10	Graphene Characterization	Millie Dresselhaus MIT
9:10-9:35	Chemistry and Applications of Graphene Layered Composite Structures	Michael Strano MIT (PI)
9:35-10:00	Graphene on hBN Devices	Pablo Jarillo-Herrero MIT
10:00-10:30	BREAK	
10:30-10:55	Graphene Theory	Antonio Castro-Neto Boston University (NUS)
10:55-11:20	Novel Devices based on Graphene Heterostructures	Tomas Palacios MIT
11:20-11:45	Photo-thermoelectric Response of an Ambipolar Graphene Infrared Thermoco	Pablo Jarillo-Herrero MIT (for Charlie Marcus)
11:45-12:10	Effects of Interactions in Bilayers on hBN	Amir Yacoby Harvard University
12:10-12:20	Summary and wrap-up	Michael Strano MIT (PI)
12:20-1:30	LUNCH	
1:30-1:50	Columbia/Cornell MURI Overview	Rick Osgood Columbia University (PI)
1:50-2:20	Graphene/NbSe ₂ Heterojunctions	Philip Kim Cornell University
2:20-2:50	Van der Waals Epitaxy of Graphene on BN	Mike Spencer Columbia University
2:50-3:10	Probing Ultrafast Dynamics in Graphene by Time-Resolved Spectroscopy	Tony Heinz Columbia University
3:10-3:30	Nonlinear Optical and UHV Studies of Gr and Beyond	Rick Osgood Columbia University
3:30-4:00	BREAK	

4:00-4:20	Graphene Micro- and Nano-Plasmonics	Farhan Rana Cornell University
4:20-4:35	Electron Correlation and Charge Transfer in Graphene	Louis Brus Columbia University
4:35-4:50	Nitrogen Dopant Distribution in Graphene on Copper	George Flynn Columbia University
4:50-5:10	Progress in Graphene-Based Electronics	Ken Shepard Columbia University
5:10-5:30	Graphene: Technology, Devices, and Circuits	Sandip Tiwari Cornell University
5:30-5:50	Complementary and Tunnel FET Circuits by All-Graphene Nanoribbons and	Edwin Kan Cornell University
5:50-6:10	Graphene: Mechanics, NEMS, and 2D Heterostructures	Jim Hone Columbia University
6:10-6:30	Direct Measurement of the Bending Stiffness of Graphene	Paul McEuen Cornell University
6:30-7:00	Government Caucus/Feedback	
7:00	MEETING ADJOURNED FOR THE DAY (dinner on your own)	

Agenda Day 3 - Wednesday, November 6, 2013		
Time	Topic	Speaker
7:00-7:55	Registration	
7:55-8:00	Introduction	Harold Weinstock AFOSR
8:00-8:30	Single Channel Room-temperature Ballistic Transport in Epitaxial Graphene Nanoribbons	Walt de Heer Georgia Tech
8:30-9:00	Nano Electronics on Atomically Controlled van der Waals Quantum Heterostructures	Philip Kim, Columbia University
9:00-9:50	Graphene and Boron Nitride for Atomically Thin Circuitry (PECASE award) Stacking and Twisting for 2D Quantum Heterostructures (US-Korea joint project)	Jiwoong Park Cornell
9:50-10:35	BREAK	
10:35-11:05	All-Carbon Graphene Bioelectronics	SungWoo Nam UIUC
11:05-11:35	Epitaxial Growth of Graphene on SiC using Carbon Sources	John Boeckl AFRL
11:35-12:05	Microscopic Electronic Properties of Ultrathin Transition Metal Dichalcogenides	Abhay Pasupathy Columbia University
12:05-1:20	LUNCH	
1:20-1:50	Electrodynamic Circuits with Graphene	Donhee Ham Harvard

1:50-2:20	Ultrathin sp ³ -bonded Carbon Films and New Opportunities for Quantum Computing	Rod Ruoff UT Austin
2:20-3:10	Quantum Transport and Optoelectronics	Pablo Jarillo-Herrero MIT
3:10-3:55	BREAK	
3:55-4:00	Introduction	Chagaan Baatar (ONR)
4:00-4:30	Pittsburgh/Columbia/Wisconsin/UCSB/Harvard Team Overview	Jeremy Levy University of Pittsburgh
4:30-5:00	Graphene	Philip Kim Columbia University
5:00-5:30	Complex Oxide Heterostructures	Chang-Beom Eom University of Wisconsin - Madison
5:30-6:00	Plasmonics	Donhee Ham Harvard University
6:00-6:30	Terahertz	Mark Sherwin UCSB
6:30	MEETING ADJOURNED FOR THE DAY	

Agenda Day 4 - Thursday, November 6, 2013		
Time	Topic	Speaker
7:00-8:00	Registration	
8:00-8:30	Graphene Plasmonics for Lasers and IR/THz Devices	Farhan Rana Cornell University
8:30-9:00	Ultrafast Carrier Dynamics and Plasmomechanics in Graphene	Paul McEuen Cornell University
9:00-9:10	Maryland/Monash/Georgetown/NRL Team Introduction and Overview	Tom Murphy University of Maryland
9:10-9:35	THz Detection with Graphene Devices	Michael Fuhrer Monash University /University of Maryland
9:35-10:00	Tunable Plasmonics for THz Emission and Detection	Dennis Drew University of Maryland
10:00-10:45	BREAK	
10:45-11:10	Carbon-based Quantum dot THz Detectors	Paola Barbara Georgetown University
11:10-11:35	Ultrafast Characterization of Graphene Devices	Tom Murphy University of Maryland
11:35-12:00	Plasmonic FET Detector and Graphene Material Development	Kurt Gaskill NRL
12:00-1:30	LUNCH	
1:30-2:00	Optoelectronics in Clean Monolayer Molybdenum Disulfide	Kirill Bolotin Vanderbilt University

2:00-2:30	Injection of 2D Electron Gas into Graphene	Hong Koo Kim University of Pittsburgh
2:30-3:00	Program Overview and Recent results on Ultra-fast Control of Plasmons in Graphene	Dimitri Basov UCSD
3:00-3:30	Theory and Modeling of Plasmonic Response of Graphene	Misha Fogler UCSD
3:30-4:15	BREAK	
4:15-4:45	Ultrafast Carrier Dynamics and Charge Transfer Processes in Graphene Probed by THz spectroscopy	Tony Heinz Columbia University
4:45-5:15	Photo-doping Effects in Grapheme on BN and Pump-probe Studies of Graphene	Feng Wang UC Berkeley
5:15-5:45	Large Interaction-induced Gap in Trilayer Graphene	Jeanie Lau UC Riverside
5:45	MEETING AJOURNED	