

Spring 2012 Conference - Agenda

BSAC Faculty Exhibition (light refreshments)

Faculty will staff posters covering their research agendas; informal discussions with attendees.

07 March 2012

Tamalpais Room @ David Brower Center, 2150 Allston Way, Berkeley

<u>Time</u>	<u>Speaker, Event / Topic Information</u>
12:00	Arrival; Registration Materials
12:30	Faculty Posters & Discussion BSAC Faculty will present posters on their research agendas.
14:00	Adjourn to Goldman Theater for Miniconference

Miniconference: "The Disappearing Biosensor: Microdevices in the Age of Pervasive Biomonitoring"

A revolution in clinical and point-of-care medical electronic devices leading to preventative and home-maintenance healthcare models is well underway. The implication for massive product/business opportunities is evident. Disposable point-of-care bioassays, closed loop drug dispensing, and pervasive remote biometrics monitoring are in the market and in the headlines.

But new research-phase and developmental technologies promise to create new leaders (and entrench aggressive incumbents) in these expanding markets. Today's remarkable medical electronic devices are largely self-contained systems connected to sensors in the body for monitoring or regulatory purposes via external electrical and physical connections. But high interest from the medical community in general and the medical electronics community in particular are driving the development of new technologies to support the realization of less intrusive, more ubiquitous medical electronics systems.

Over the last decade, nanoengineered materials and nanomanufacturing processes have emerged as key candidate technologies for the implementation of new classes of electronic systems that promise to revolutionize medical electronics, medical diagnostics, and therapeutic electronics. Flexible low cost electronic and microfluidic devices have been demonstrated based on engineered nanomaterials and printing techniques, including a wide range of sensors, diagnostics, computational elements, batteries, actuators, and the associated integration technology. This workshop aims to provide an overview of the breakthrough work from leaders in the field, from engineers working directly in clinical settings to university and industry nanotechnologists developing tomorrow's materials and devices.

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<u>Time</u>	<u>Speaker, Event / Topic Information</u>
14:00	Prof. Michel M. Maharbiz The Disappearing Biosensor: Microdevices in the Age of Pervasive Biomonitoring
14:30	Industry Perspectives: Dr. AmirAli H. Talasaz (Sr. Director of Scientific Research, Illumina) Point-of-Care Platforms: Integrated Sample-to-Answer Bioanalyzers for Urgent Medical Care
15:00	Dr. Srinath Hosur (Texas Instruments) Wireless Body Area Networks and the IEEE 802.15.6 BAN Standard
15:30	Prof. Brian Otis (U.Washington) Miniaturized Chip Design for Wireless Biosensing
16:00	Prof. Ali Niknejad Wireless Healthcare Disposable Radios
16:30	Break
17:00	Prof. Vivek Subramanian Printed Materials, Devices and Systems for Biosensing
17:30	Prof. Luke P. Lee Integrated Molecular Diagnostics (iMDs) for Global Healthcare
18:00	Prof. Shuvo Roy (UCSF) From Fab to Bedside: A Pathway for Rapid Translation of Sensor Technology to Quantify Medicine
18:30	Prof. Elad Alon Body Interface Electronics Powered by Bio-Fuel Cells
19:00	Discussion and Conclusions
19:10	Mixing Reception
20:30	Adjourn

Research Review (Posters and Plenary)

Member-only review of all 100+ BSAC research projects in two extended poster sessions. Twelve projects selected by Faculty are featured in 15-minute plenary talks. One Invited faculty talk on a topic of high impact will be presented. Reception and Awards banquet at the historic Berkeley City Club follow at which best paper/best poster awards from the research review will be announced.

08 March 2012

Goldman Theater @ David Brower Center, 2150 Allston Way, Berkeley

<u>Time</u>	<u>Speaker, Event / Topic Information</u>
07:45	Light Breakfast, Registration, Conference Materials
08:30	John Huggins Open Session & Announcement
08:40	Session I Chair: Prof. Albert P. Pisano
08:45	Plenary 1: Thura Lin Naing 3-GHz CVD Diamond Ring Resonator with Q > 40,000
09:00	Plenary 2: Fabien Chraim Smart Fence
09:15	Plenary 3: Dr. Ayden Maralani Silicon Carbide Semiconductor Devices and ICs for Harsh Environment Sensing
09:30	62 Researchers 45-Second Morning Poster Previews by the Researchers
10:25	MORNING POSTER SESSION Tamalpais Room, Kinzie Room, and Hazel Wolf Gallery
11:55	Session II Chair: Prof. David A. Horsley
12:00	Plenary 4: Mo Li Three axis Lorentz Force Magnetic Sensor
12:15	Plenary 5: Jiyoung Chang Direct-write Multi-functional Nanofibers via Near-field Electrospinning
12:30	Plenary 6: Dr. Ivan Dimov Integrated Amplification and Readout for Multiplexed Biomarker Detection
12:45	SANDWICH LUNCH & Member Info Displays
12:46	DARPA MiNaSIP Review & Lunch (Location: BWRC) Review of MiNaSIP for Current Program Participants
13:55	Session III Chair: Prof. Liwei Lin
14:00	Plenary 7: Maxwell Zheng Direct Growth of High Quality III-V Semiconductors on Metal Foils for Low-cost, High-efficiency PVs
14:15	Plenary 8: Michael Eggleston Optical Antenna Based nanoLED
14:30	Plenary 9: Gerardo Jaramillo Airborne Particulate Monitoring Using a Micromechanical Electrometer
14:45	Plenary 10: Dr. Gabriel Lavella Building Self-Assembled Nanomachines based on Biased Brownian Ratcheting Relevance to Sensing, Molecular Signal Transduction, Diagnostics and Drug Delivery
15:00	61 Researchers 45-Second Afternoon Poster Previews by the Researchers
15:55	AFTERNOON POSTER SESSION Tamalpais Room, Kinzie Room, and Hazel Wolf Gallery
17:25	Prof. Bernhard E. Boser Finish All Plenary and Poster Voting
17:30	Session IV: INVITED FACULTY TALK Introduction: Prof. Bernhard E. Boser
17:35	Distinguished Faculty Talk: Prof. Chenming Calvin Hu The FINFET transistor: Why and How?
18:10	END SESSION: John Huggins End Session Walk to BCC
18:15	Walk to Awards Banquet @ Berkeley City Club, 2315 Durant Ave Berkeley
18:30	PRE-BANQUET RECEPTION
19:15	AWARDS BANQUET & CEREMONY

BSAC Industrial Advisory Board

Closed meeting of Industrial Members and co-Directors to discuss status and directions of the Center.

09 March 2012

Tamalpais Room, David Brower Center

<u>Time</u>	<u>Speaker, Event / Topic Information</u>
07:45	Light Breakfast
08:30	John Huggins Open; agenda
08:40	Albert P. Pisano Paper Ratings & Research Directions Discussion
09:00	Ming C. Wu Wu research group summary
09:20	Clark T.-C. Nguyen Nguyen research group summary
09:40	John Huggins State of Center and Questions Referred to IAB
10:15	Members Closed Session
11:15	Callback of co-Directors Feedback to Center on technical directions and operations
12:00	Adjourn & Box Lunch