

## NSF-NNI 2006 Conference, Agenda

**Monday, May 15th, 2006**

**Objectives: to review key NSF-NNI programs in the USA initiated since the year 2000**

7:00 - 18:00	<b>registration, all day</b>	
7:00 - 8:20	<b>continental breakfast</b>	
		<b>Speaker</b>
8:20 - 8:30	Opening and Overview	Mike Roco, NSF-NNI
	<b>Session 1: Overview of U.S. Government R&amp;D Programs on Nanotechnology chaired by James Rudd</b>	
8:30 - 8:55	"NSF and NNI: Long-term View for Nanotechnology Research and Development"	Mike Roco, NSF-NNI
8:55 - 9:20	Department of Defense (DOD) Overview	Richard Colton, DOD
9:20 - 9:45	"National Institute for Occupational Safety and Health (NIOSH) at 5 Years of NNI"	John Howard, NIOSH
9:45 - 10:10	"Nanoscience Centers and Activities at the US Department of Energy: Present and Future Directions"	Kristin Bennett, DOE
10:10 - 10:30	<b>break</b>	
10:30 - 10:55	"Nanotechnology at the National Institute of Standards and Technology (NIST)"	Michael Postek, NIST
10:55 - 11:20	"Nanotechnology Research at EPA: Applications and Implications for the Environment and Human Health."	Stephen Lingle, EPA
11:20- 11:45	National Aeronautics Space Agency (NASA) Overview	Minoo Dastour, NASA
11:45-12:05	Biomedical Nanotechnologies	Jeff Schloss, NIH
12:05-12:30	"Nanotechnology in Food, Agriculture, and Forestry"	Hongda Chen, USDA
12:30 - 14:00	<b>lunch</b>	
	<b>Session 2: National User and Research Networks, Chaired by Larry Goldberg</b>	
14:00-14:05	Introduction	Mike Roco, NSF-NNI
14:05 - 14:30	National Nanotechnology Infrastructure Network	Sandip Tiwari, Cornell University
14:30 - 14:55	"A Cyber Community and Cyber Resource"	Mark Lundstrom, Purdue University
14:55 - 15:20	"The Network of Nanoscale Science and Engineering Centers"	James Yardley, Columbia University
15:20- 15:40	<b>break</b>	
	<b>Session 3: Centers on Education and Societal Implications, chaired by Priscilla Regan</b>	

15:40 - 16:05	Nanotechnology in Society	David Guston, ASU
16:05 - 16:30	"Nanoscale Informal Science Education"	Larry Bell, Boston Museum
	<b>Session 4: Centers on Nano-manufacturing by NSF, chaired by Kevin Lyons</b>	
16:30 - 16:55	Nano-manufacturing at UCLA	X. Zhang, UCLA
16:55 - 17:20	Nano-manufacturing at UIUC	Placid Ferreira, UIUC
17:20- 17:45	Nano-manufacturing at Northeastern University	Ahmed Busnaia, Northeastern University
~17:45	<b>Closing</b>	Mike Roco, NSF-NNI
17:45-18:00	Break	
18:00 - 19:00	Evening Reception Keynote: "Public Engagement in Nanotechnology"	David Rejeski, Woodrow Wilson Center
18:00 - 20:00	<b>INC2 Welcome Reception</b>	

### INC2 Conference, Agenda

**Tuesday, May 16th, 2006**

**Objectives: to share overview of nanotechnology programs and future directions in Europe, Japan, and the USA**

7:00 - 18:00	<b>registration, all day</b>	
7:00 - 8:00	<b>continental breakfast</b>	
		<b>Affiliation</b>
8:00 - 8:10	INC2 Opening, Greetings by Europe, Japan, USA	Dirk Beernaert, European Commission (EC) Tatsuo Morimoto, CSTP Mike Roco, NSF-NNI
8:10 - 8:40	INC2 Conference Keynote Address, "Science and Technology of Carbon Nanotubes"	Peter Ecklund, Penn State
	<b>Session 1 - Regional Overviews</b>	
	<b>Chairs: Dirk Beernaert (EC), Tatsuo Morimoto (CSTP, Japan), and Cliff Lau (IDA, USA)</b>	
8:40 - 8:55	"EU Approach to Nanotechnology"	Renzo Tomellini, European Commission
8:55 - 9:10	"Nano-electronics: Capitalising on the Past and Preparing for the Future"	Dirk Beernaert, European Commission
9:10 - 9:40	ENIAC, The European Technology Platform for Nanoelectronics	Fred van Roosmalen, ENIAC/Philips
9:40 - 10:00	<b>break</b>	
10:00 - 10:30	"Japan's R&D Strategy of Nanotechnology"	Kazuharu Shimizu Japan Cabinet Office, CSTP

10:30 - 11:00	Japan talk #2	Koichi Nagasawa, Renesas
11:00- 11:30	"New Frontiers in Nanotechnology"	Mike Roco, NSF-NNI
11:30 - 12:00	"US Industry's Nanotechnology Initiatives"	Paolo Gargini, SIA-TSC, Intel
12:00 - 13:00	Session 1 Q&A and panel: all session 1 speakers to participate ( 7 participants )	
13:00 - 14:30	<b>lunch</b>	
	<b>Session 2 Nano-Electronics and Nano-Manufacturing</b> <b>Chairs: Steinhoeagl Werner (EC) and Ralph Cavin (SRC, USA)</b>	
14:30 - 14:50	"Nanoelectronics - Prospects and Challenges"	Rainer Waser, RWTH, Aachen, DE
14:50 - 15:10	"NanoBridge Technology for Reconfigurable LSI"	Toshitsugu Sakamoto, NEC Corporation
15:10 - 15:30	"Channel Materials Engineering for Continuous MOSFET Performance Increase with Device Scaling"	Dimitri Antoniadis, MIT
15:30 - 15:50	"Room Temperature Ferromagnetic Spintronic Logic Gates"	Russell Cowburn, Imperial College London, UK
15:50 - 16:10	"Spintronics – New discovery and application"	Kohei M. Itoh, Keio University and CREST-JST
16:10 - 16:30	US on non-charge devices	Kang Wang, UCLA
16:30 - 16:50	<b>break</b>	
16:50 - 17:05	Nano-Electronics International Technical Working Group (ITWG) report	Ralph Cavin, SRC
17:05 - 18:00	Session 2 Q&A and panel: all session 2 speakers to participate ( ~7 panelists) Topics: transition from CMOS to beyond CMOS and system aspects, Nano-Electronics inter-regional cooperation	
18:30 - 20:30	INC2 Conference reception	
<b>Wednesday, May 17th, 2006</b>		
7:00 - 17:00	<b>registration, all day</b>	
7:00 - 8:00	<b>continental breakfast</b>	
8:00 - 8:30	Introductory Talk	George Whitesides, Harvard University
	<b>Session 3: Bridging to Nano-Biotechnology [theme: "bridging and interfacing competencies with nano-electronics and nano-systems " Using advanced nanoelectronics methods and tools to study biomaterials or using biotechnology ideas, e.g. biomolecules as templates, for building devices]</b> <b>Chairs: Shozo Fujita (Fujitsu) and Lynn Hudson (NIH/OD, USA)</b>	
8:30 - 8:50	"Self-assembled Nanostructures in Nature and Routes to Biomimicry"	Suzi Jarvis Science Foundation Ireland, Trinity College Dublin, Ireland
8:50 - 9:10	"Protein Detection Technology Based on Nanometer-scale Functional DNA Units"	Shozo Fujita, Fujitsu Laboratories Limited

9:10 - 9:30	"International Network on Nano/Bio Probes"	Dawn Bonnell University of Pennsylvania, Materials Science & Engineering
	<b>Session 4: Supporting Innovation in Materials Science and Chemical Processes and Nano-chemical [theme: "bridging and interfacing competencies with nano-electronics and nano-systems" Nano Materials, Designing &amp; controlling chemical reactions, assembly, and catalyst at the nanometer scale]</b> <b>Chairs: Roger Dekeersmaecker (IMEC, Belgium) and Jun Ogawa (Showa Denko)</b>	
9:30 - 9:50	"Molecular-scale Electronics: Status and Perspectives"	Dominique Vuillaume, CNRS, IEMN, France
9:50 - 10:10	"Nano Materials of Showa Denko"	Jun Ogawa, Showa Denko K.K.
10:10 - 10:30	"Assembling Materials from Nanoscale Building Blocks"	Richard Siegel, MPI
10:30 - 10:50	<b>break</b>	
10:50 - 12:00	Sessions 3 and 4 joint Q&A and panel: Introductory Talk addressee, all speakers (7 panelists)	
12:00 - 13:30	<b>lunch</b>	
	<b>Session 5 MEMS (Micro Electro Mechanical Systems) Theme: From MEMS to NEMS (Nano Electro Mechanical Systems), MEMS using nanotechnology</b> <b>Chairs: Dirk Beernaert (EC), Takahito Ono (Tohoku University)</b>	
13:30 - 13:50	"Carbon-nanotube-based Nanorelay"	Jari Kinaret Chalmers University of Technology Gothenburg, Sweden
13:50 - 14:10	"Si based Micro/Nanomechanical Devices for Nanoscience and Nanoengineering"	Takahito Ono Tohoku University Graduate School of Engineering
14:10 - 14:30	US	Alex Zettl University of California at Berkeley Department of Physics
	<b>Session 6 Self-Assembly, Modeling and Simulation of Quantum Effects</b> <b>Chairs: Ichiro Yamashita (Matsushita Electric, Panasonic), Mark Lundstrom (Purdue University, USA)</b>	
14:30 - 14:50	"The Silicon Technology and the Limits of Computation"	Gianfranco Cerofolini ST Microelectronics, Agrate Brianza, Italy
14:50 - 15:10	"Bio Nano Process: Making nanoelectronic devices by biological path"	Ichiro Yamashita, Ayumu Tsuji-mura, Kentaro Setsune Matsushita Electric (Panasonic)
15:10 - 15:30	US	Robert Westervelt Harvard University, Department of Physics
15:30 - 15:50	<b>break</b>	
15:50 - 17:00	Sessions 5 and 6 joint Q&A and panel: all speakers (= 6 panelists)	
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Thursday, May 18th, 2006

7:00 - 8:00	registration and continental breakfast	
	<b>Session 7 Societal Implications of Nanotechnology</b> <b>Chairs: Renzo Tomellini (EC) and JAPAN</b>	
8:00 - 8:20	Europe	Arie Rip, University of Twente The Netherlands
8:20 - 8:40	Japan	
8:40 - 9:00	US	Vivian Weil Illinois Institute of Technology Center for the Study of Ethics in the Professions
9:00 - 9:15	Session 7 Q&A: all speakers to participate	
	<b>Session 8 Economic Implications of Nanotechnology</b> <b>Chairs: Fred van Roosmalen (ENIAC, Philips) and Mike Roco (NSF-NNI, USA)</b>	
9:15 - 9:35	"Materials Research Today - Much Ado About Nano?"	Marcos Gomez, BASF, Germany
9:35 - 9:55	"Commercialization of Nanotechnology in Japan: It's a Big Small World"	Shin-ichi Kamei, Mitsubishi Research Institute, Inc.
9:55 - 10:15	"How Nanotechnology Is Changing Business and Organizations: New Models for Engagement "	Martha Collins and Richard Chapas Industrial Research Institute
10:15 - 10:30	Session 8 Q&A: all speakers to participate	
10:30 - 10:50	<b>break</b>	
	Panel Moderator: To Be Announced	
10:50 - 11:50	INC2 Conference Panel on Inter-Regional Communication and Cooperation (2 per region to participate)	Dirk Beernaert, Renzo Tomellini, EC, Europe #3 Mike Roco, NSF-NNI, Paolo Gargini, SIA TSC/Intel
11:50 - 12:00	INC2 Closing, INC3 announcement	Mike Roco, NSF-NNI Gilbert Declerck, IMEC Renzo Tomellini, EC