

National Science Foundation Science & Technology Centers Directors Meeting

August 28-29, 2012 ★ Arlington, Virginia

F. Scott Fitzgerald AB Conference Room

AGENDA – August 28

TIME	TOPIC
0700-0800	BREAKFAST
0800-0815	Welcome and Opening Remarks <i>S. Shankar Sastry</i> <i>Professor and Dean of Engineering and Principal Investigator, TRUST Center</i> <i>University of California, Berkeley</i>
0815-0915	Keynote Address & Discussion <i>Dr. Wanda Ward</i> <i>Director, Office of Integrative Activities, National Science Foundation</i>
0915-1045	NSF Programs & Future Directions – Overview and Discussion <i>Rathindra DasGupta I-Corps Innovation Corps Program</i> <i>Tom Russell INSPIRE/CREATIV</i> <i>Randy Phelps MRI</i> <i>Paul Wyn Jennings, Division of Research on Learning</i>
1045-1100	BREAK
1100-1230	NSF STC Class of 2005, 2006 and 2010 Center Highlights <i>STC Class of 2005, 2006 and 2010 Principal Investigators (or Designates)</i>
1230-1330	LUNCH
1330-1430	Panel Discussion with NSF STC Class of 2005 and 2006 <i>STC Class of 2005 and 2006 Principal Investigators (or Designates)</i>
1430-1500	BREAK
1500-1700	Parallel Breakout Sessions <i>Separate Closed-Door Sessions for Directors/Principal Investigators, Executive/Managing</i> <i>Directors, Education/Outreach Directors and Students</i>
1700-1800	NSF STC Student Poster Session <i>Students from All STCs</i>
1800	STC Group Dinner – Presentations from STC Class of 2002 Centers

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AGENDA – August 29

TIME	TOPIC
0730-0845	BREAKFAST
0845-0900	Welcome and Keynote Speaker Introduction <i>S. Shankar Sastry</i> <i>Professor and Dean of Engineering and Principal Investigator, TRUST Center</i> <i>University of California, Berkeley</i>
0900-1000	Keynote Remarks & Panel Discussion <i>Dr. Steven Chu</i> <i>United States Secretary of Energy</i>
1000-1015	BREAK
1015-1115	Parallel Breakout Session Outbriefs <i>Representative STC Directors/Principal Investigators, Executive/Managing Directors, and</i> <i>Education/Outreach Directors</i>
1115-1200	NSF Dialogue with NSF STC Leadership <i>NSF Officers and STC Directors</i>
1200	MEETING ADJOURN (Box Lunch Provided)

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KEYNOTE TALKS

CENTERS DIALOGUE WITH DR. WANDA WARD

Wanda Ward, Ph.D.

*Director, Office of Integrative Activities
National Science Foundation*



Speaker Biography

Dr. Wanda Ward has served as Senior Advisor to the Director for Planning and Assessment since January 2010. Since joining NSF from the University of Oklahoma in 1992 Dr. Ward has served as Program Director, Career Access Programs, Staff Associate, Office of the Assistant Director, EHR, Assistant to the NSF Deputy Director for Human Resource Development, Deputy Assistant Director for Social, Behavioral, and Economic Sciences, and as Deputy Assistant Director, Education and Human Resources. Dr. Ward's considerable expertise at all levels of NSF are especially valuable in serving as Head, OIA.

During her tenure at NSF, Ward has served in a number of science and engineering policy, planning and program capacities in both EHR and the Office of the Director. Ward served as deputy assistant director for NSF's Directorate for Social, Behavioral and Economic Sciences (SBE). In SBE, Ward provided critical leadership for development of several NSF-wide activities, including the Human and Social Dynamics priority area, the Science of Learning Centers program, Cyberinfrastructure and the Social Sciences, and the ADVANCE program. She also directed the launch and development of a major activity in SBE to broaden participation through strategic, regional alliances among the top 25 institutional producers of underrepresented minorities at the B.S. and Ph.D. levels. These endeavors led her to forge key international research and workforce development collaborations in both developed and developing nations.

Ward has also served on the President's National Science and Technology Council subcommittees and interagency working groups in the areas of science education and workforce development, and the social, behavioral and economic sciences.

Prior to joining NSF, Ward was an associate professor of psychology and founding director of the Center for Research on Multi-Ethnic Education at the University of Oklahoma, Norman. She has also held visiting academic appointments at the University of Illinois at Urbana-Champaign and Johns Hopkins University. She received a B.A. in psychology as well as the Afro-American Studies Certificate from Princeton University and a Ph.D. in psychology from Stanford University.

Ward was awarded a Ford Foundation Fellowship and the 2005 American Psychological Association (APA) Presidential Citation, the most distinguished honor given by the APA president. The APA award recognized her steadfast support of the advancement of behavioral science and her devotion to enhancing the diversity of the science and engineering workforce.

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KEYNOTE TALKS

A CONVERSATION WITH DR. STEVEN CHU

Steven Chu, Ph.D.

United States Secretary of Energy



Speaker Biography

As United States Secretary of Energy, Dr. Steven Chu is charged with helping implement President Obama's ambitious agenda to invest in clean energy, reduce our dependence on foreign oil, address the global climate crisis, and create millions of new jobs.

Dr. Chu is the co-recipient of the Nobel Prize for Physics (1997) and has received numerous other awards. He has devoted his recent scientific career to the search for new solutions to our energy and climate challenges - a mission he continues with even greater urgency as Secretary of Energy.

Prior to his appointment, Dr. Chu was the Director of the Department of Energy's Lawrence Berkeley National Lab, where he led the lab in pursuit of alternative and renewable energy technologies. He also taught at the University of California as a Professor of Physics and Professor of Molecular and Cell Biology. Previously, he held positions at Stanford University and AT&T Bell Laboratories.

Dr. Chu's research in atomic physics, quantum electronics, polymer and biophysics includes tests of fundamental theories in physics, the development of methods to laser cool and trap atoms, atom interferometry, and the study of polymers and biological systems at the single molecule level. While at Stanford, he helped start Bio-X, a multi-disciplinary initiative that brings together the physical and biological sciences with engineering and medicine.

The holder of 10 patents, Dr. Chu has published ~250 scientific and technical papers. He remains active with his research group and has recently published work on general relativity, single molecule biology, biophysics and biomedicine, and on scientific challenges and opportunities in clean energy. Over 30 alumni of his research group have gone on to become distinguished professors and have been recognized by dozens of prizes and awards.

Dr. Chu is a member of numerous honorific societies including the National Academy of Sciences, the American Philosophical Society, the Royal Academy of Engineering, the Academia Sinica, the Korean Academy of Sciences and Technology, and is an honorary member of the Institute of Physics, the Chinese Academy of Sciences, and a Lifetime Member of the Optical Society of America. He received an A.B. degree in mathematics, a B.S. degree in physics from the University of Rochester, and a Ph.D. in physics from the University of California, Berkeley, as well as 23 honorary degrees.

Dr. Chu was born in Saint Louis, Missouri in 1948. He is married to Dr. Jean Chu, who holds a D.Phil. in Physics from Oxford and has served as chief of staff to two Stanford University Presidents as well as Dean of Admissions. Secretary Chu has two grown sons, Geoffrey and Michael, by a previous marriage.

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NATIONAL SCIENCE FOUNDATION DISCUSSION LEADERS

Rathindra DasGupta, I-Corps Innovation Corps Program

Rathindra DasGupta joined the National Science Foundation (NSF) in June 2006 as a Program Director in the Division of Industrial Innovation and Partnerships, Small Business Innovation Research Program. He is currently the lead program director for the Industry University Cooperative Research Center (I/UCRC) program as well as being one of the three cognizant program directors for the I-Corps program at NSF. Before joining NSF, Babu DasGupta was the chief scientist for a large automotive manufacturing company (CONTECH Division, SPX Corporation). Prior to joining the industry, he was the Raymond D. Peters Endowed Professor in Materials Science at the Milwaukee School of Engineering.

Paul Wyn Jennings, EHR/DRL

In 1995, Dr. Jennings moved to the National Science Foundation where he worked in the Chemistry Division for 2 years transferring to the Division of Graduate Education in 1997 where he managed the Graduate Traineeship group including the Integrated Graduate Education and Research Traineeship (IGERT) program. During the 2003 to 2005 time frame, Dr. Jennings was on leave from NSF to work in the new Department of Homeland Security at the University Programs Office to assist in setting up the Centers of Excellence. Subsequently, on return to NSF, he has worked in the Directorate of Education and Human Resources on evaluation and cooperation with NASA. His latest appointment is in the Division of Research on Learning and is in the Cluster of Informal Science

Randy Phelps, MRI

Dr. Phelps is a Staff Associate in the Office of Integrative Activities (OIA) at the National Science Foundation. Currently he coordinates the Foundation's Major Research Instrumentation (MRI) program and is also part of the OIA Science and Technology Center (STC) coordinating team. He was previously the Program Director for Galactic Astronomy and for Education and Special Programs in the Division of Astronomical Sciences while on leave from the California State University, Sacramento where he served as a Full Professor in the Department of Physics and Astronomy. Dr. Phelps is an internationally recognized expert on star cluster research, and has authored or co-authored over 60 papers, including more than 50 in refereed journals. Additionally, his commitment to education was recognized by an appointment to the Astronomy Education Board of the American Astronomical Society.

Tom Russell, INSPIRE/CREATIV

Thomas F. Russell joined OIA in November 2008 to coordinate the planning and execution of NSF's Cyber-Enabled Discovery and Innovation (CDI) program. Dr. Russell comes to OIA from the NSF Division of Mathematical Sciences (DMS), where he has served as a program director for computational mathematics and applied mathematics since 2003. His integrative activities during his years at NSF include leading or participating in the following initiatives: the DMS Vertical Integration of Research and Education; the DMS-GEO Collaborations in Mathematical Geosciences; the Interagency Modeling and Analysis Group, which supports modeling and analysis of biomedical systems; and the NSF-wide, CDI initiative. Previously, Dr. Russell was a professor in the Department of Mathematics at the University of Colorado at Denver from 1987 to 2003.

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POSTER PRESENTATIONS

SPIN READOUT WITH SUPERCONDUCTING CIRCUITS

Natania Antler, University of California, Berkeley

USING CReSIS RADAR DATA TO DETERMINE ICE THICKNESS AT PINE ISLAND GLACIER BY TOPOGRAPHIC IDENTIFICATION OF SURFACE

Nyema Barmore, Elizabeth City State University

SURVEY TO DETECT LONG-TERM VIABILITY IN PINE ISLAND BAY COASTAL ICE USING ARCHIVED LANDSAT IMAGERY

Ya'Shonti Bridgers, Elizabeth City State University

THE DEEP AND SHALLOW HADLEY CIRCULATIONS IN EARTH'S ATMOSPHERE

Alex Gonzalez, Colorado State University

ASYMPTOTIC JOINT NORMALITY OF COUNTS OF UNCORRELATED MOTIFS IN RECURSIVE TREES

Mohan Gopaladesikan, Purdue University

NANOCONFINEMENT OF POSS WITHIN MULTILAYERED POLYMER FILMS

Matthew Herbert, Case Western Reserve University

GROWTH OF NOVEL HETEROJUNCTIONS FOR TUNNELLING DEVICES

Ryan Iutzi, Massachusetts Institute of Technology

VALIDATION OF THE 2003 ANTARCTIC GROUNDLING LINE THROUGH THE USE OF ENVI

Michael Jefferson, Elizabeth City State University

APPLYING COMMON CORE STATE STANDARDS IN 4th-10th USING LEGO ROBOTICS

Darnell Johnson, Elizabeth City State University

USING CReSIS RADAR DATA TO DETERMINE ICE THICKNESS AT PINE ISLAND GLACIER BY TOPOGRAPHIC IDENTIFICATION OF SURFACE

Glen Koch, Elizabeth City State University

CHARACTERIZING THE EMERGENCE OF NEURON CLUSTERS

Chris Liu, University of Illinois

HOW DOES PRECIPITATION AND TEMPERATURE CONTRIBUTE INTO THE DECREASING OF GLACIER MASS BALANCE

Malcolm McConner, Elizabeth City State University

WHEN SLOW AND STEADY WINS THE RACE: SPATIAL STRUCTURE AND ADAPTIVE LANDSCAPES

Joshua Nahum, University of Washington

CREATING NANOFIBERS USING A NOVEL MICROLAYER TECHNIQUE

Jia Wang, Case Western Reserve University

SEXUAL SIGNALING LOSS IN EMPIRICAL, THEORETICAL, AND DIGITAL SYSTEMS

Emily Weigel, Michigan State University