

NIST Director's Update

**Visiting Committee on Advanced Technology
October 13-14, 2010**

**Patrick Gallagher
Director**

Overview

- New VCAT Member
- Realignment Update
- Budget Update
- Recovery Act Accomplishments
- Security Update
- Safety Update
- News
- VCAT Meeting Overview

New VCAT Member



Uma Chowdhry

Chief Science and Technology Officer Emeritus

DuPont

- Served as Senior VP and Chief Science and Technology Officer of DuPont from 2006 – Sept. 2010
- Appointed VP of Central Research & Development (CR&D) in 2002 and director of DuPont Engineering Technology in 1999
- Joined DuPont as a research scientist in the CR&D Department in 1977
- Elected to the American Academy of Arts and Sciences in 2003
- Elected to the National Academy of Engineering in 1996
- Elected "Fellow" of the American Ceramic Society in 1989



NIST Realignment Status



NIST Budget – Position for the Future

NIST is well-positioned in relation to Administration priorities

- Manufacturing
- Technology Standards – Smart Grid, Health IT, Cloud Computing
- Cybersecurity

Doubling of the NIST budget remains an Administration priority – although financial pressures are increasing

NIST planning and budget requests continue to target priorities outlined in three year plan

Strengthen and focus NIST's Laboratories and facilities to ensure U.S. leadership in measurement science and standards

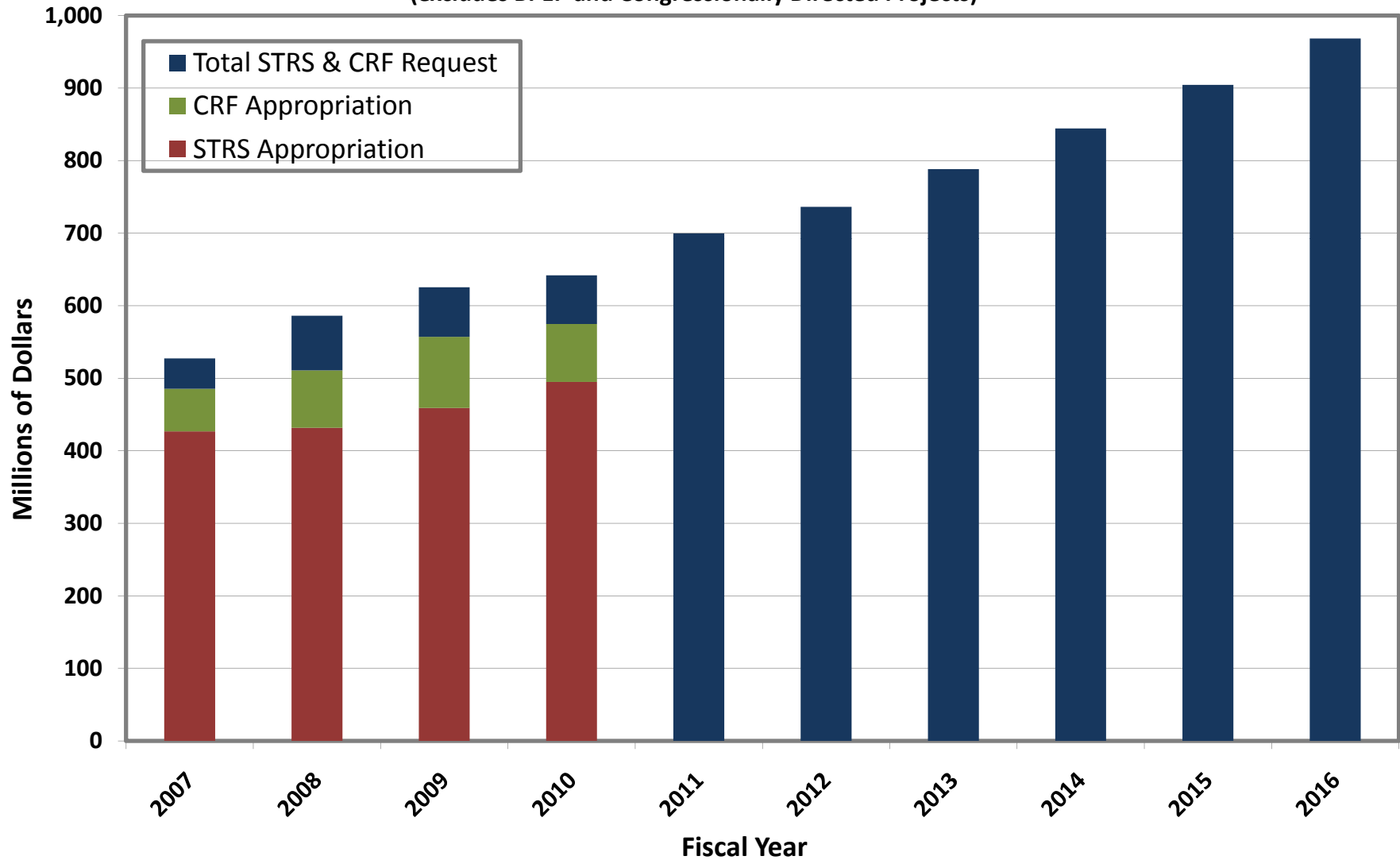
- Improve NIST measurement and standards services.
- Enhance the facilities and equipment that enable cutting-edge research.
- Promote leadership at the frontiers of science and technology.

Focus new NIST activities to address critical national priorities

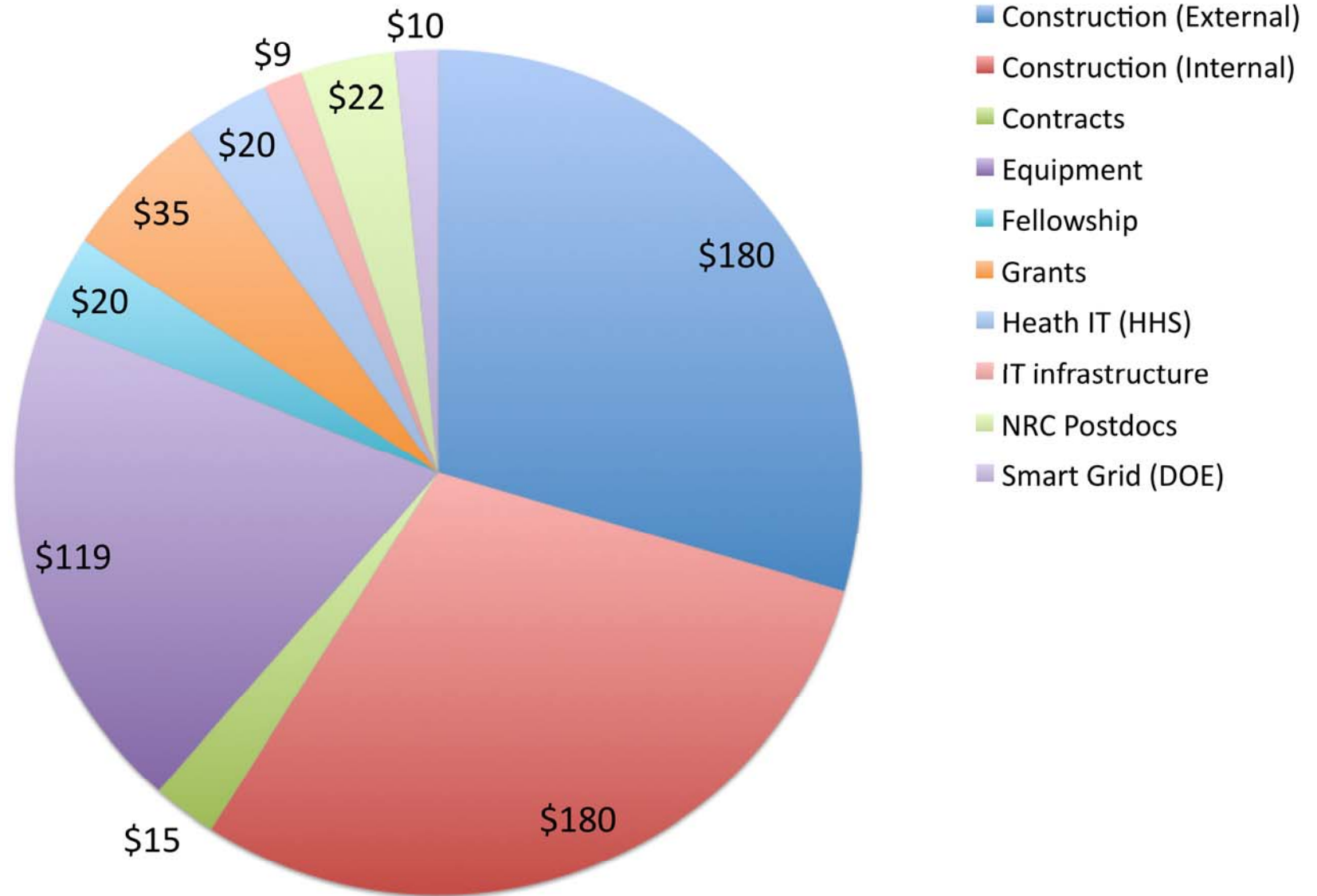
- Energy
- Environment
- Healthcare
- Information Tech.
- Manufacturing
- Physical Infrastructure

Current NIST Budget and Projected Budget Growth

FY2007 – FY2016 STRS & CRF Budget
(excludes BPEP and Congressionally Directed Projects)



NIST Recovery Act Funds – (in millions)

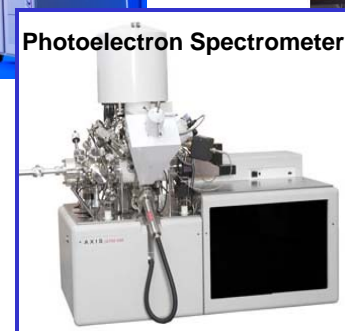
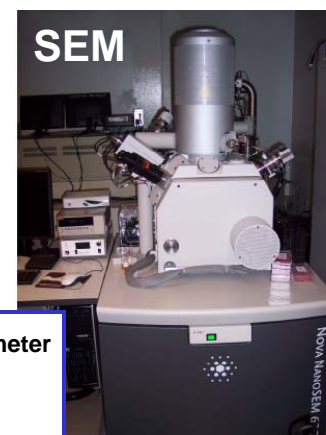


ARRA – what it has brought to NIST

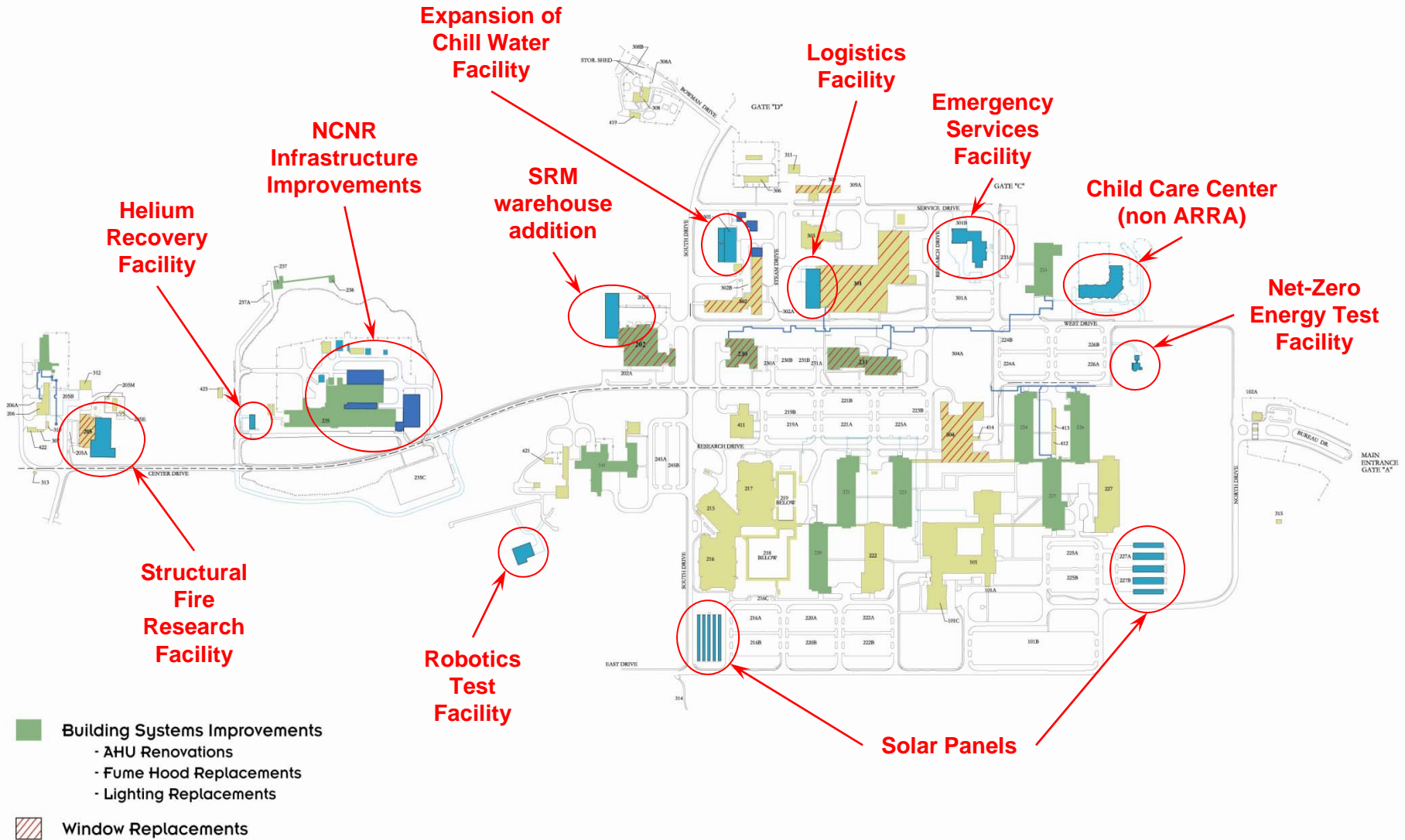
- \$22 M for a total of 161 NRC postdoctoral associates
 - 54 postdoctoral associates (NIST employees)
 - 44 postdoctoral associates (NIST guest researchers)
 - 63 postdoctoral associates extended
- \$20 M awarded to University of MD and University of Colorado-Boulder, resulting in new vehicle for associate support
 - 13 senior fellows
 - 19 postdoctoral fellows
 - 22 Additional SURF students
 - 10 Undergraduate Research Assistants
- Funded Equipment – to date, 45 items at a total cost of \$119 M
- Construction – \$180 M distributed over Gaithersburg and Boulder



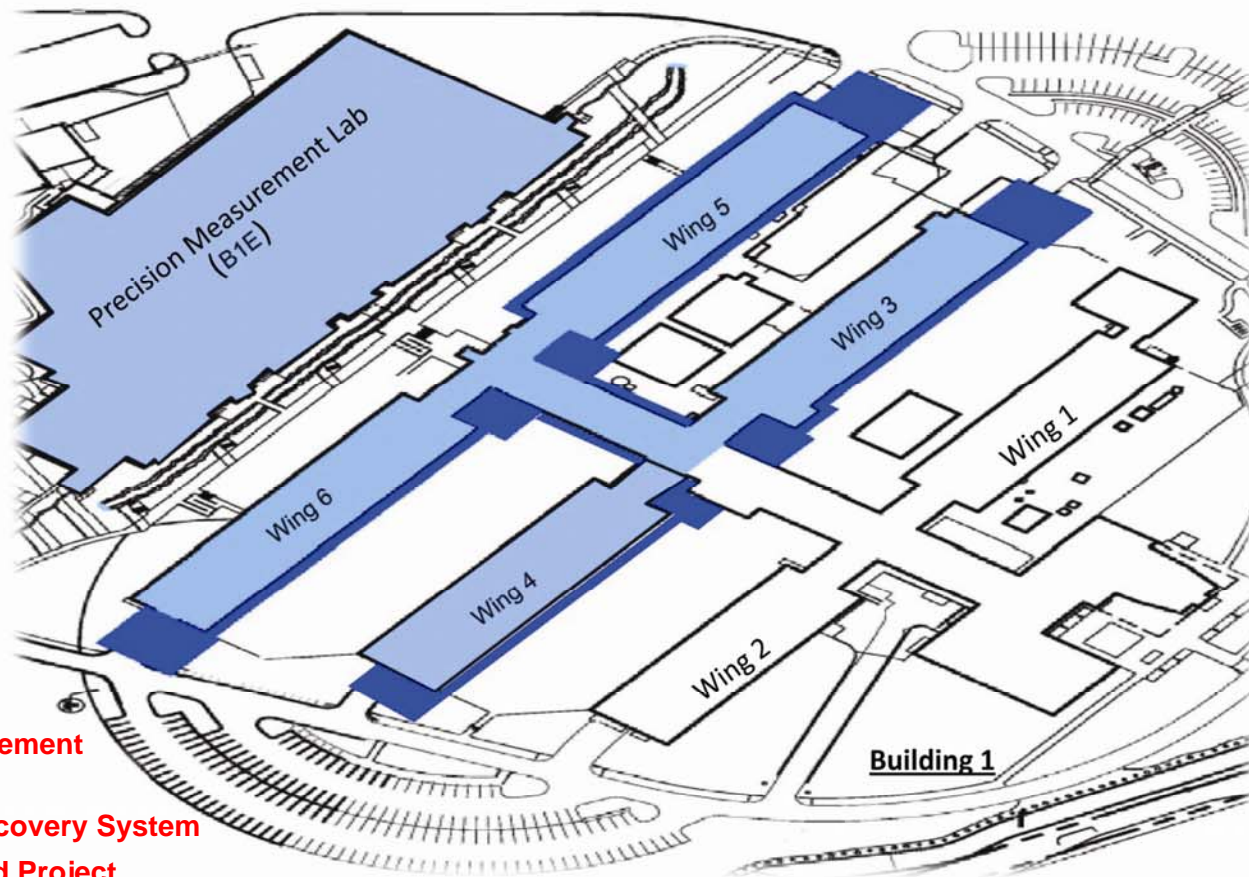
© Robert Rathe



Construction at NIST (Gaithersburg)



Construction at NIST (Boulder)



- Precision Measurement Laboratory
- Liquid Helium Recovery System
- 2nd Electrical Feed Project
- Elevator Replacement
- Auditorium Renovation

Foreign National Guest Researchers at NIST

Update since last VCAT Meeting

- Aug. 2010 – High level meeting at DOC between NIST, NOAA, Office of Security (OSY), and the Assistant Secretary for Administration to lay foundation for moving forward
- Sept. 2010 – Working Group reconvened to re-write DAO as a policy document that reflects a risk-based management approach to addressing Foreign Nationals access in the context of protecting agency assets (Sep. 2010)

Roles and Responsibilities:

Office of Security

- Establish security policy , performance requirements and guidelines
- Offer security services (including: training, vetting Foreign Nationals, and intelligence)
- Oversee Bureau performance

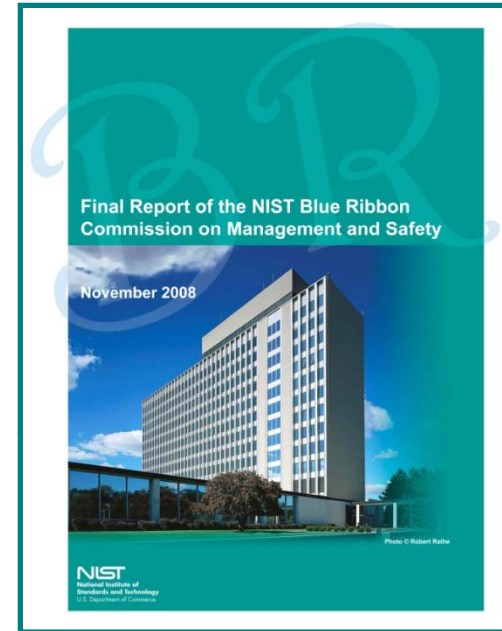
Bureaus

- Develop and implement risk-based management plan
- Conduct inventories and risk assessments of facilities and sites (with OSY assistance)
- Make risk based determinations on work to be performed by FNGs, FNG access levels and appropriate controls

- Jan. 2011 – Target for completion

Safety Management - Blue Ribbon Commission II

- Original Blue Ribbon Commission (BRC) - FACA that met in fall of 2008
- Issued five core findings:
 1. Safety is not a core value at NIST.
 2. Safety is not integrated with the conduct of operations in a meaningful way across organizational units.
 3. NIST has not benchmarked safety protocols and performance against similar organizations with strong safety cultures.
 4. NIST is plagued by a serious lack of resources for safety.
 5. The staff is eager, willing, and ready to embrace a safety culture.
- Charge to BRC II: examine NIST's progress
- Meetings
 - October 12 - Gaithersburg
 - October 20 - Boulder



Standards for Smart Grid Rulemaking

Energy Independence and Security Act of 2007....

“At any time after the Institute’s work has led to sufficient consensus....the Commission shall institute a rulemaking proceeding to adopt such standards....”

- *Five standards identified for FERC to consider in rulemaking*
- *Cover data and information exchange, cyber security of communication protocols*
- *Essential for uniform and interoperable communication systems throughout the grid*
- *First set of standards supporting regulations for the deployment of Smart Grid*



Courtesy: Siemens AG



Credit: J. Messerly



Credit: Jesse Lee

NIST in Support of Cloud Computing

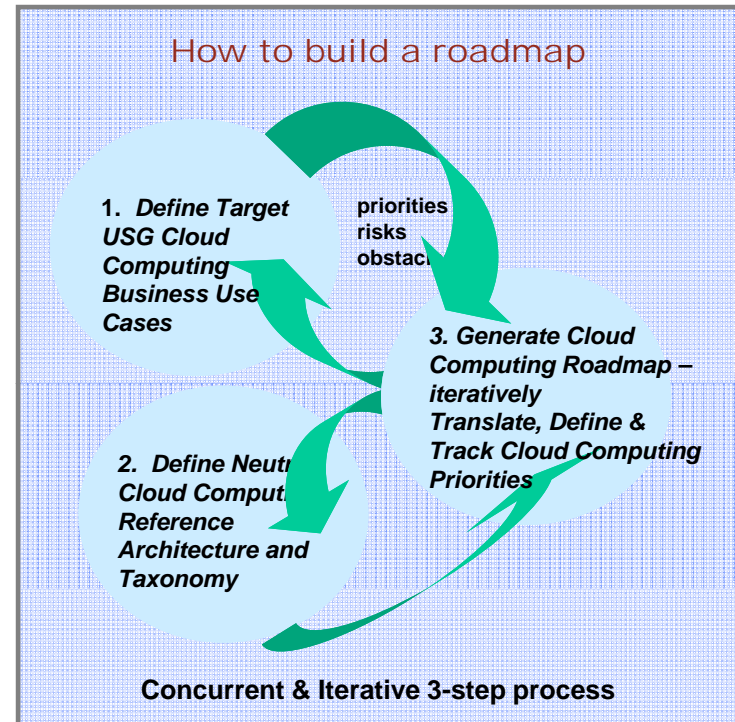
■ Strategic Initiative

Goal: collaborate with Federal Chief Information Officers, Industry and Standards Developing Organizations to define a Cloud Computing Roadmap

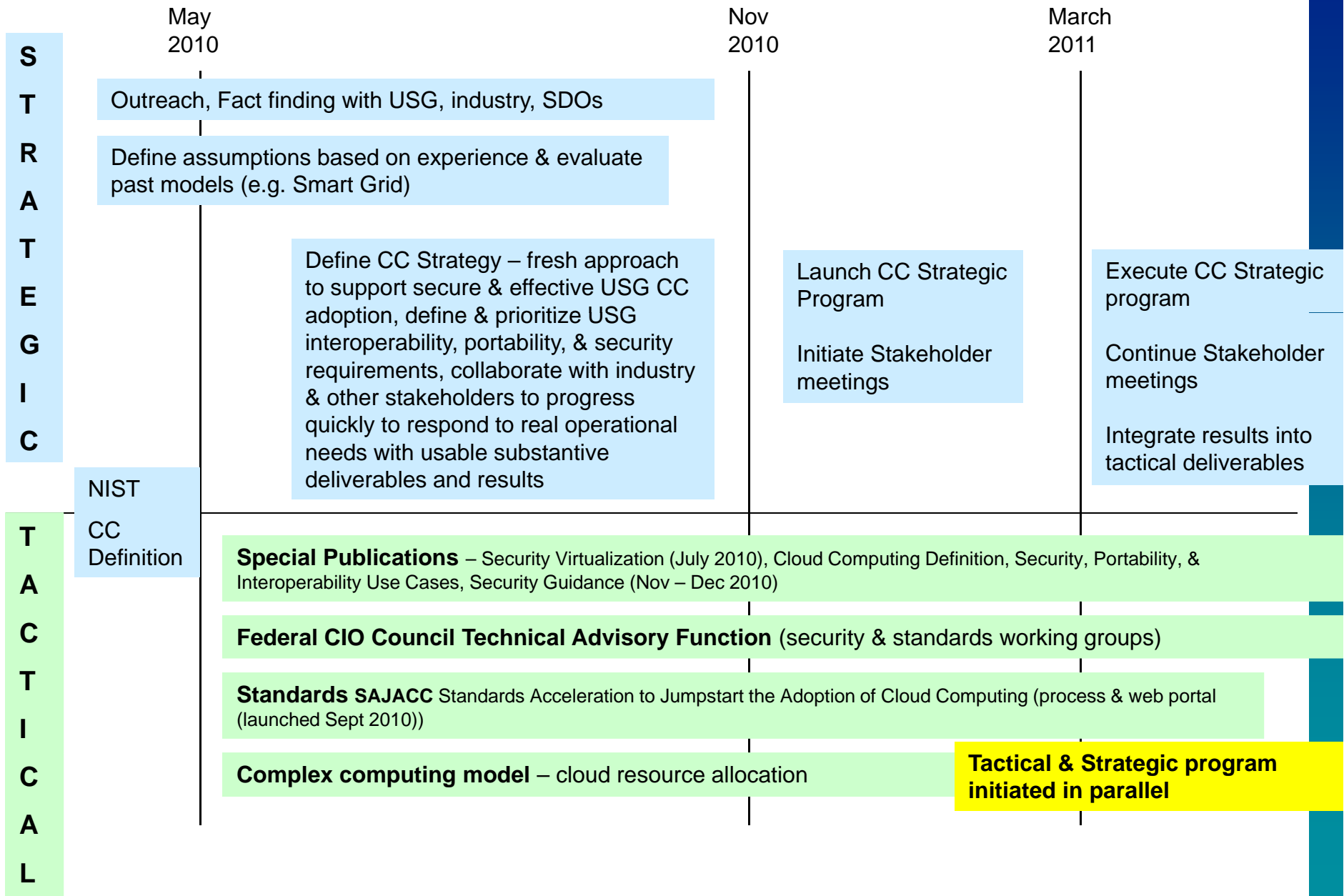
- The strategy was developed from May – September, 2010
- It will be launched with stakeholders in November, 2010

■ Tactical efforts: May – October, 2010

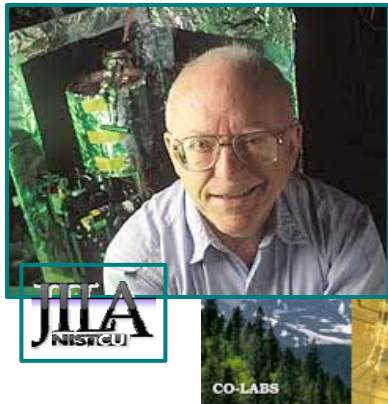
- Special Publications – recommendations & guidance
- Complex Information Systems Analysis – Cloud Computing
- Standards Acceleration to Jumpstart Adoption of Cloud Computing (SAJACC)
- Technical Advisor to Federal CIO Council – Federal Risk & Authorization Management Program (FedRAMP)



NIST in Support of Cloud Computing



News – Staff Awards and Recognition



Jan Hall

2010 CO-LABS Governor's Award
for High-Impact Research

GOVERNOR'S
AWARD
for
HIGH-IMPACT
RESEARCH



Barbara Lippiatt

2010 GreenGov Presidential Award,
Green Innovation Category

"...significantly advanced the state-of-the-art of practices for sustainability measurements of building materials and bio-based products across the Federal Government"

Arthur S. Flemming

THE GEORGE WASHINGTON UNIVERSITY

Steven Brown

for major advances in light measurement and its applications to the environmental remote sensing of the Earth

Marla Dowell

for exceptional leadership of the world's most comprehensive laser metrology program

John Kitching

for outstanding efforts to develop ultra-miniature devices that bring atomic measurement precision to a wide range of applications

Dietrich Leibfried

for research innovations in quantum computing, especially for conceiving and experimentally demonstrating a versatile and productive way to make a quantum bit (qubit), the basic computing element of a quantum computer

Eite Tiesinga

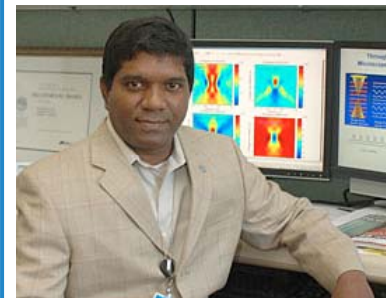
for prolific work on controlling and understanding the interactions of ultracold atoms



Ravikiran Attota

for the development of **through-focus scanning optical microscopy (TSOM)**, a measurement and analysis method that transforms ubiquitous conventional optical microscopes into 3D metrology tools with nanometer scale lateral and vertical sensitivity and a wide scope of applicability. TSOM) has applications that cut across a range

of industries, from biotechnology to semiconductors and photonics.



News – Staff Awards and Recognition



Economy, Energy, and Environment (E3) Initiative wins EPA Silver Medal

MEP's Mark Troppe, Alex Folk, and Mike Simpson will be recognized for their efforts related to the E3 Initiative, a joint DOC, DOE, EPA, DOL, and SBA initiative promoting a new model for collaboration among manufacturers, utilities, local government, and federal resources intended to:

- Invest in local communities
- Address energy and sustainability challenges
- Provide valuable technical training and assessments
- Enable economic growth



Mike Troppe
MEP Strategic Partnerships



Mike Simpson
MEP Director of Systems Operations



Alex Folk
MEP Center Operations Manager

Agenda for this VCAT Meeting

- Introductions, NIST Update, and Challenges for the VCAT
- Measurement Services
 - *Breakout Groups on Measurement Services*
 - *Strengthening Planning and Performance Assessment for Measurement Services*
 - *Discussion on Measurement Services Planning and Management*
- Administration's Priorities in Innovation
by [Aneesh Chopra](#), CTO of the U.S. 
- Measurement and Standards Needs in Forensic Science
 - *Strengthening Forensic Science in the United States*
by [Randall Murch](#), Virginia Tech-National Capital Region 
 - *White House Response to the National Academy's Report on Strengthening Forensic Science*
by [Rick Weiss](#), Office of Science and Technology Policy 
 - *Forensic Science Activities at NIST*
- Blue Ribbon Commission (BRC) II Safety Management Discussion
- External Needs Assessment Activities
- Wrap-up Discussion, Recommendations, and Plans for 2010 VCAT Annual Report



Discussion