



# **NIST Director's Update**

**Visiting Committee on Advanced Technology  
Feb 1-2, 2011**

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**Under Secretary of Commerce for Standards and Technology and  
NIST Director**

# Overview

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- Context
  - Overview of current budget situation
  - Administration's agenda
  - Congressional agenda
- Review of past years activities and discussion of key points
  - Documentary standards activities
  - Measurement services
  - Management and operational issues
- Looking forward – a preview of key programs and themes

# Current Budget Situation

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## FY2011 Budget

- President's request submitted Feb 2010
- Government on Continuing Resolution until March
- Uncertain plans for passing a budget or partial budget

## FY2012 Request

- Request submitted to OMB in October
- OMB "Passback" in early December
- President's request due to be released mid-February

## FY2013 Request

- Planning for FY2013 has begun with development of new program plans by OUs
- Director Reviews will provide additional input on priorities
- NIST Request to DOC will be finalized by late April

# Administration's agenda

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President's State of the Union Address :

- Innovation
- Education
- Infrastructure
- Freeze non-security domestic discretionary spending
- Reform: regulation, taxes, earmarks

And ongoing priorities...

- Framework for American Innovation
- "Cloud First" strategy
- Cybersecurity strategy



## Congressional agenda

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### 111<sup>th</sup> Congress:

- America COMPETES reauthorization
- Health care (including HITECH Act)
- Economy: American Recovery & Reinvestment Act
- Energy – Smart Grid

### 112<sup>th</sup> Congress:

- **Spending!**
- Oversight
- Government role
- Economic growth: jobs
- Research & Development



# Overview– NIST and COMPETES Act (HR 5116)

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## Relevant Impacts and Changes to NIST Authorization

### Administrative

- Authorizes NIST programs for 2011-2013
- Creates Under Secretary of Commerce for Standards and Technology (new and additional title for the NIST Director)
- Eliminates NAS as sole source provider for Post-Doc program
- Removes cap for Fellowships
- Eliminates COMSCI program

### Collaboration and Outreach

- Authorizes research initiative for Emergency Communications and Track Technologies for trapped individuals in confined spaces
- Broadens opportunities at NIST for underrepresented minorities in fellowship and teacher programs
- Authorizes a green manufacturing and construction initiative for high performance building standards
- Directs NIST to collaborate with industry on Cloud Computing Standards

### Manufacturing

- Authorizes changes to MEP program
- Authorizes MEP centers to provide input on DoC Loan Guarantee program
- Broadens MEP competitive grant program to construction and green energy industries

# Review of Current Year Focus – Documentary Standards

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## Review of NIST Standards Efforts

### Standards Policy

#### Smart Grid

- NIST-led SGIP made significant progress with first set of standards released
- Ongoing work on interface between standards efforts and FERC

#### Healthcare IT

- NIST released new HIT test methods and related software

#### Cloud Computing

- NIST launches effort to develop roadmap for cloud computing

# Inter-agency Leadership in Coordinating Standards

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2009 VCAT Recommendation: *Serve as the principal inter-agency convener for documentary standards affecting national, international, and/or inter-agency interests.....*

## ***Progress to-date:***

- Establish and lead the National Science and Technology Council's Sub-committee on Standards
- Dialog on federal government's role in standards to address national priorities:
  - RFI – issued Dec. 8, 2010 (3 month deadline)
  - Jan. 26<sup>th</sup> Standards Roundtable
    - CTO level industry panel
    - Senior administration engagement
    - Extensive industry and govt. interest





# Review of Current Year Focus – Measurement Services

## Roles:

- Definition
- Innovation
- Stewardship



## Stakeholders:

- Federal Agencies
- State Weights and Measures Offices
- U.S. Industry
- International metrology organizations



## Issues:

- Planning
- Interplay between service & research
- Customer service

SRM



## Review of Current Year Focus – Measurement Services

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The VCAT was asked to explore:

1. How does NIST identify its customers and their needs, and define its role and approach in addressing those needs?
2. How does NIST position its long-term research portfolio to continuously evolve it's capabilities to address changing measurement service needs?
3. How does NIST assess that the services it currently provides are best meeting the customer needs?
4. How does NIST assess the overall quality and relevance of its measurement service programs?

# Review of Current Year Focus – Measurement Services

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## Identified Concerns with Measurement Services

- Needs assessment and planning
- Program design (how does NIST services fit into the measurement system)
- Program execution
- Pricing, delivery, and other service considerations
- Staffing
- Performance metrics
- Independent assessment

## Recommendation areas

- *Planning process*
- *Program design*
- *Strengthen & align research efforts with measurement service role;*
- *Effective assessment & metrics*

### *Active areas:*

- *Forensic sciences*
- *Measurement barriers to bio-manufacturing*
- *Diagnostic tests*
- *Greenhouse gas measurements*
- *Advanced PV & other energy technologies*
- *Nano EHS*

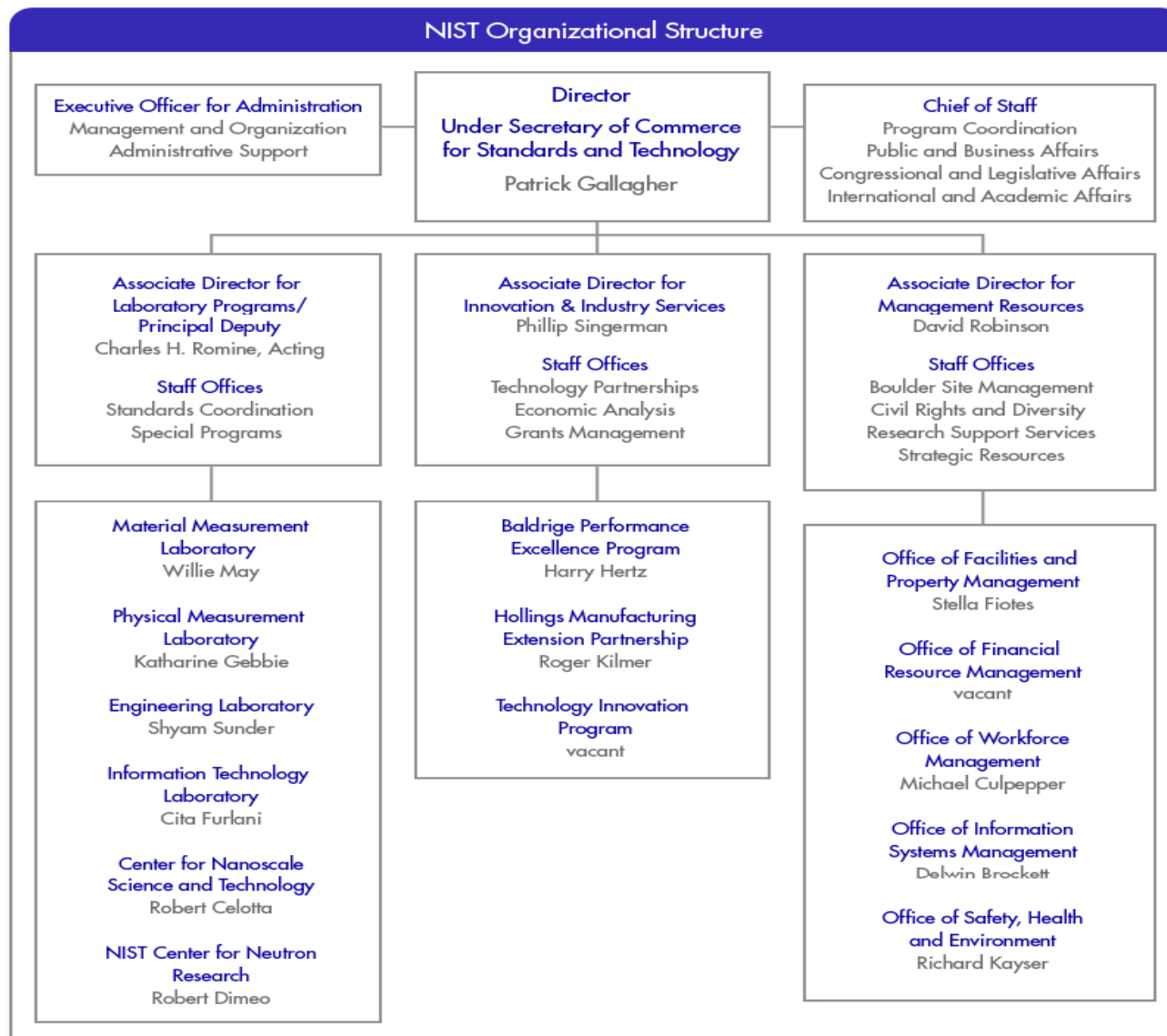
## **Review of Current Year Focus – Management Issues**

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**Over the Course of the year the VCAT was also asked to explore a number of important operational issues including:**

- Organization
- Safety
- Policies affecting foreign national researcher access

# Review of Current Year Focus – NIST Reorganization



# Review of Current Year Focus – Safety

## Review of Safety Discussions

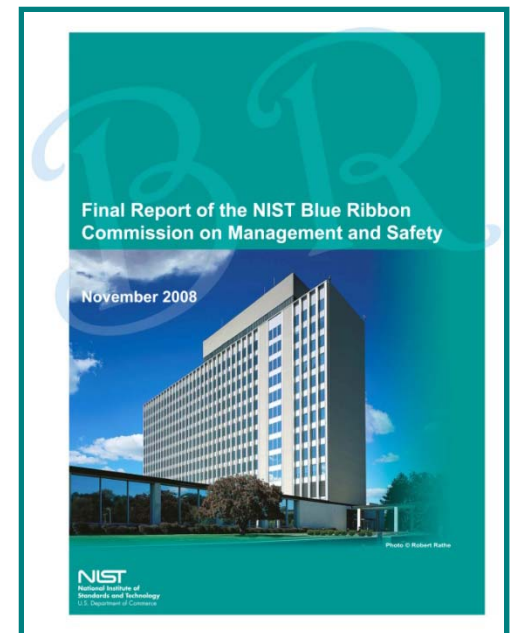
Assess progress since 2008 Blue Ribbon Commission assessment of NIST safety management.

Second Blue Ribbon Commission (BRC II) met in fall of 2010 to examine NIST's progress against the findings of the first BRC

BRC II core findings:

NIST should:

1. *Appoint crucial Associate Director for Laboratory Programs*
2. *Address the “enthusiasm gap” among some laboratory directors*
3. *Establish an (independent) audit mechanism*
4. *Develop a suite of safety metrics to gauge progress and drive improvements*



## Review of Current Year Focus – Security

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### Review of the issue

- Proposed changes to implementation of DOC policies could negatively impact access of foreign national guest researchers to NIST.
- VCAT members were briefed by Office of Security & NIST
- VCAT Chair and Co-Chair directly raised concerns with the Secretary
- NIST has been working with DOC on the development of a rational approach that would promote security and maintain DOC scientific agencies with access to essential talent
- NIST and DOC are working together to identify best practices from other federal agencies

# Looking Forward – Themes

## NIST roles in Administration priority areas:

- National Strategy for Trusted Identities in Cyberspace
  - Overview of Administration strategy by Howard Schmidt White House Cybersecurity Coordinator
  - Overview of NIST Role by Ari Schwartz, Senior Internet Policy Advisor, ITL
- Public Safety Communications Standards and Technology
  - Overview of NIST programs and potential role by Dereck Orr, Program Manger for Public Safety Communications
- Cloud Computing
  - Overview of NIST role by Dawn Leaf, Senior Advisor for Cloud Computing & Senior Advisor, ITL



## Other areas:

- Advanced Manufacturing
- Wireless infrastructure
- Sustainable manufacturing
- Cyber-physical systems
- Green technologies
- Commercialization and tech transfer
- Nanotechnology
- Etc...



# Planning a National Strategy for Cyber-Physical Systems\*

## Possible Planning Elements

- Full spectrum of pre-competitive R&D from basic research to mission-focused R&D, education, and workforce development to meet national needs
- Outcome: Critical knowledge and solution-enabling tools to accelerate commercial applications and minimize risk of early adoption
- Public-Private Partnership:
  - Government-Industry-University
  - Joint Institute(s) with academia; active industry engagement
  - National coordination mechanism

## PCAST Recommendations (2007, 2010):

- New investments to address R&D with greatest effect on important, high-leverage applications
- Develop and implement Federal Plan

## Illustrative Application Domains:

- Smart Grid
- Smart Buildings
- Smart Medical Devices
- Smart Manufacturing
- Smart Transportation

\* CPS: deeply integrate computation, communication, and control into physical (engineered) systems to provide new capabilities.

Courtesy: MIT



## Impact on VCAT

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- High visibility and impact
- More dynamic agenda
- Broader agenda

### Options to consider:

- Membership
- Meeting timing and format
  - Maintain 3 “face to face” meeting structure
  - Move February meeting by 1-2 weeks
  - Between meetings?
- Subcommittees
- Staff support
- Use of external panels
- Communication and reports