

NIST Overview Briefing to ISPAB

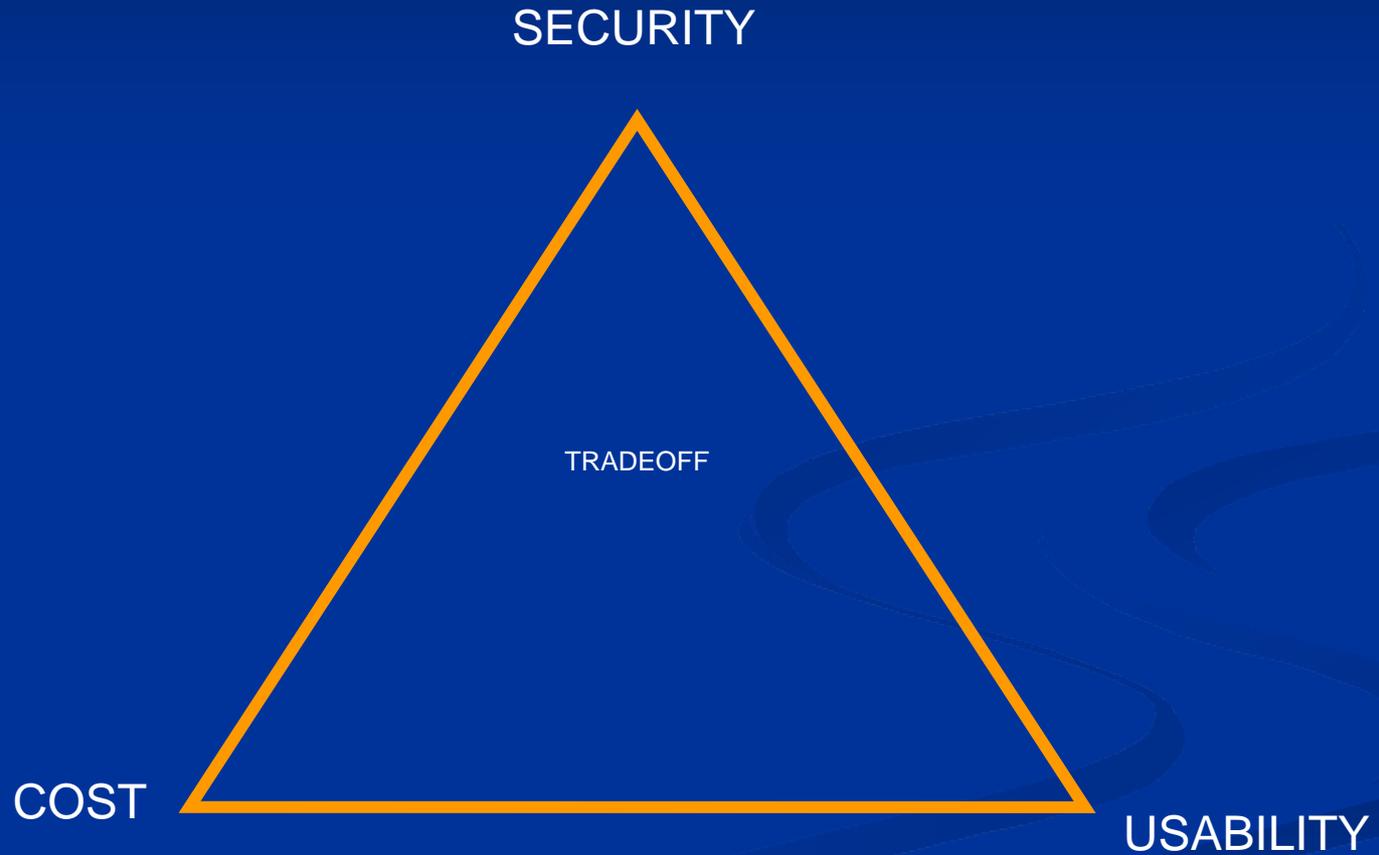
Dr. James Turner
NIST Deputy Director
June 7, 2007

Agenda

- The Challenge
 - NIST Programs
- 2007 and 2008 Budget Initiatives
- NIST Information Security Activities
 - Computer Security Division Update
 - Curt Barker – Division Chief



The Challenge



NIST At A Glance

- 2,800 employees
(Gaithersburg, Maryland; Boulder, Colorado;
Charleston, South Carolina)
- 1,800 guest researchers
- 1,500 field agents
- 850 users of facilities
- NIST Laboratories
- Advanced Technology Program
- Hollings Manufacturing Extension
Partnership Program
- Baldrige National Quality Program

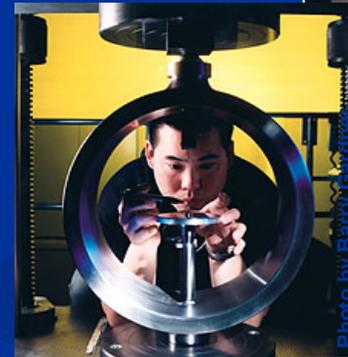


Photo by Barry Gardner

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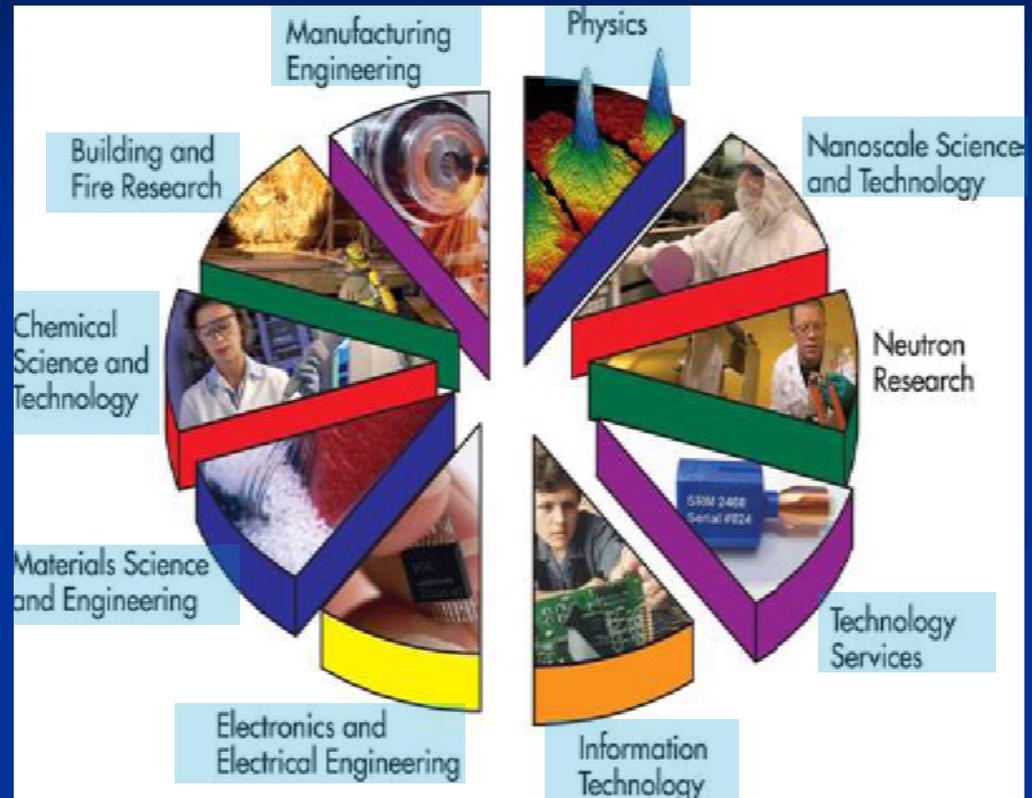
The NIST Laboratories

NIST's work enables

- Science
- Technology innovation
- Trade
- Public benefit

NIST works with

- Industry
- Academia
- Government agencies
- Measurement laboratories
- Standards organizations



*Blue highlight indicates a connection to information security research

FY 2007 NIST Initiative Appropriations and FY 2008 Request (*STRS*)

- **Cyber Security: Innovative Technologies for National Security** (\$1.4 million '07) (\$600K '08 request)
- **Enabling Nanotechnology from Discovery to Manufacture** (\$15 million) (\$11M '08 request)
- **NIST Center for Neutron Research (NCNR) Expansion and Reliability Improvements: A National Need** (\$10 million) ('08 no request)
- **Enabling the Hydrogen Economy** (\$6 million) (\$4M '08 request)
- **Manufacturing Innovation through Supply Chain Integration** (\$1 million) (\$1M '08 request)
- **Quantum Information Science - Infrastructure for 21st Century Innovation** (\$6 million) (\$7M '08 request)
- **National Earthquake Hazard Reduction Program** (+\$3.25M)

FY 2007 NIST Initiative Appropriations and FY 2008 Request (*STRS*) *cont...*

- Structural Safety in Hurricanes, Fires, and Earthquakes (\$2 million) (\$4M '08 request)
- International Standards and Innovation: Opening Markets for American Workers and Exporters (\$1 million) (\$1M '08 request)
- Innovations in Measurement Science (\$1 million) (\$3M '08 request)
- **Bioimaging: A 21st Century Toolbox for Medical Technology (\$3 million) (\$1M '08 request)**
- Synchrotron Measurement Science and Technology: Enabling Next Generation Materials Innovation (\$3.5 million) (\$1.5M '08 request)
- **Biometrics: Identifying Friend or Foe? (\$0M) (\$2M '08 request)**
- Measurements and Standards for the Climate Change Science Program (\$5M '08 request)

Examples of NIST current or planned Information Security work

- NIST FY 2006 Budget estimate for Cyber Security & Information Assurance - \$9.1M¹

- FISMA
 - Successful workshops pulling together the IG and CIO communities to help ensure clarity between the FISMA “graders” and the “doers”
 - Developing metrics as performance measurement tools to assist in FISMA compliance reporting and in agency internal improvement efforts.
 - Designed to facilitate decision making and demonstrate the value of information security.
 - Helps management decide where to invest in additional information security resources.
 - Provides linkage between implementation of agency programs to agency-level strategic planning efforts.
 - DNI and DoD interested in working with NIST to develop common trust levels using current NIST standards as a baseline

Ongoing

Beginning

Ongoing

Examples of NIST current or planned Information Security work

- Security for Quantum Computing
 - Quantum communications and key management
 - Quantum Resistant public key cryptography
- FY 2007 Initiative - Cyber Security: Innovative Technologies for National Security
 - Math Division - Foundations of Measurement Science for Information Systems
 - May 25, 2007 workshop - One of the recommendations: *Need for NIST-level precision to infuse reality into current studies of abstract network models.*
- Internet Infrastructure Protection
 - *The National Strategy to Secure Cyber Space¹*
 - Priorities include: Secure the Domain Name System, Promote Improved Internet Routing, Improve the Security and Resilience of Key Internet Protocols.
 - NIST work – Domain Name System Security, Routing Security, IPv6 Profile and testing
- Biometrics and Cryptographic Identity Verification - Standards and Testing for US-VISIT, Law Enforcement, Federal Identify Verification, Industry

Ongoing

Beginning

Beginning

Ongoing

Ongoing

Future and Ongoing Challenges

- Long Term Research
 - Advanced Cryptography (e.g., hash, public key, quantum, light footprint)
 - Inherently Secure, High Assurance, and Provably Secure Systems and Architectures
 - Composable and Scalable Secure Systems
 - Autonomic Systems
 - Ad-hoc Networks and Wireless Security
 - Network Measurement and Visualization Tools
 - Secure Distributed Systems
 - Infrastructure for Information Security R&D

Questions?

BACKUP SLIDES

NIST Mission

- NIST's mission is to promote U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology in ways that enhance economic security and improve our quality of life.

NIST Mission and Programs

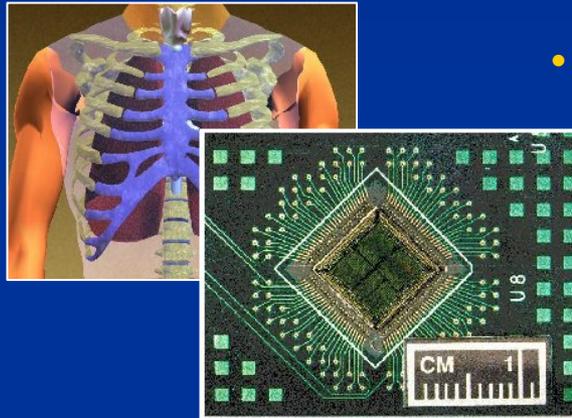
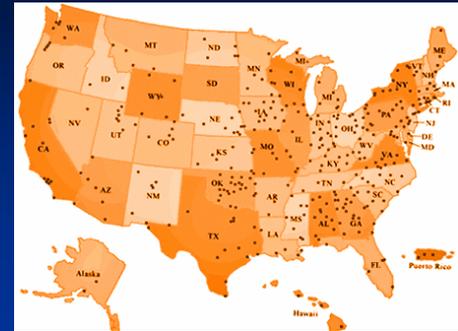
NIST carries out its mission in four cooperative programs:

- [NIST Laboratories](#), conducting research that advances the nation's technology infrastructure and is needed by U.S. industry to continually improve products and services;
- [Baldrige National Quality Program](#), which promotes performance excellence among U.S. manufacturers, service companies, educational institutions, and health care providers; conducts outreach programs and manages the annual Malcolm Baldrige National Quality Award which recognizes performance excellence and quality achievement;
- [Hollings Manufacturing Extension Partnership](#), a nationwide network of local centers offering technical and business assistance to smaller manufacturers; and
- [Advanced Technology Program](#), which accelerates the development of innovative technologies for broad national benefit by co-funding R&D partnerships with the private sector.

NIST Programs

- **Hollings Manufacturing Extension Partnership**

- The MEP is a nationwide network that provides hands-on help to smaller manufacturers.



- **Advanced Technology Program**

- Co-funding of private sector R&D to accelerate the development of high-risk, broadly enabling technologies, such as IT, electronics, materials, biotechnology, tissue engineering, DNA chips, etc.

- **Baldrige National Quality Program**

- Premier U.S. program for performance excellence and quality achievement.
- Awards in manufacturing, service, small business, education, health care, and non-profit organizations.
- More than 1 million copies of Criteria for Performance Excellence downloaded annually



President's 10-Year American Competitiveness Initiative

- **Announced in the State of the Union address 2006**
- **Doubles, over 10 years, investment in:**
 - NIST laboratory and construction (STRS and CRF)
 - National Science Foundation
 - DOE Office of Science
- **Commits \$50 billion of new funding to these key agencies**
- **Makes permanent and updates the R&D Tax Credit**
- **Increases math and science education (K-12) and increases the number of math and science teachers**
- **Increases worker training and retraining opportunities**
- **Reforms immigration policies to attract and retain the best and brightest from around the world**

American Competitiveness Initiative

- Proposed in FY 2007 and continued in FY 2008 budget
- Doubles, over 10 years, investment in:
 - NIST core (laboratory and infrastructure)
 - National Science Foundation
 - DOE Office of Science

