Department of Commerce
Technology Administration
FY 2006 Budget
Request to Congress

February 8, 2005

Technology Administration
FY 2006 Budget Request to Congress

TA works with U.S. industry to accelerate innovation and maximize technology's contribution to U.S. economic growth.

- National Institute of Standards and Technology (NIST) – Develops and provides measurements, standards, and technology to promote innovation, facilitate trade, ensure public safety and security, and help create jobs.
- National Technical Information Service (NTIS) – Central clearinghouse of scientific and technical information.

Smart But Tough Budget Choices

The President's FY 2006 budget for TA is a smart budget that includes impressive increases for research and development programs.

- NIST's Laboratories program reflects an increase of $47.2M, or 12.7 percent over the FY 2005 appropriation.
- The proposed budget for TA reflects the same kind of difficult budgetary choices that have been made throughout the U.S. government.
- These tough choices necessitate the elimination of the Advanced Technology Program and the reduction of the Office of the Under Secretary and the Hollings Manufacturing Extension Partnership Program.

Technology Administration
FY 2006 Budget Request ($M)

	FY 2004 Enacted*	FY 2005 Enacted *	FY 2006 Changes	FY 2006 Request
TA/Under Secretary	6.3	6.5	(2.3)	4.2
National Institute of Standards and Technology	621.5	699.2	(167.2)	532.0
National Technical Information Service	0	0	0	0
Total	627.8	705.7	(169.5)	536.2

*Post rescission, excluding unobligated balances rescissions

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The Under Secretary will continue to lead the development of the policies and initiatives that enable technology to best contribute to America's competitiveness.

- The Digital Freedom Initiative
- Advanced Manufacturing R&D Initiative
- Interagency Working Group on Advanced Technologies for Education
- President's National Science and Technology Council's Committee on Technology
- Intergovernmental RFID Council
- Commerce Coordinating Council for Technology

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The Under Secretary will continue its advocacy and policy development roles in diverse areas such as:

- Biotechnology
- Nanotechnology
- Advanced Educational Technologies
- Globalization
- IT Workforce Education and Training
- Technology Transfer
- Electronics Recycling
- Internet Privacy and Security

NIST…Enabling the Future

FY 2006 Requirements to Enhance

Innovation…

Trade…

Security…

Jobs

NIST Strengthens the Innovation Infrastructure...

- to advance manufacturing, services and science throughout the U.S. economy, ranging from the electronics, chemicals and construction industry to health care, communications, and financial services.

- to facilitate international trade.

- to improve public safety and security through research in metal detectors, wireless interoperability, trace explosive detection, biometrics and other key homeland security technologies.

- to improve the quality of life through research leading to improved clinical measurements, environmental measurements, and more effective use of energy.

NIST FY 2006 Budget Request ($M)

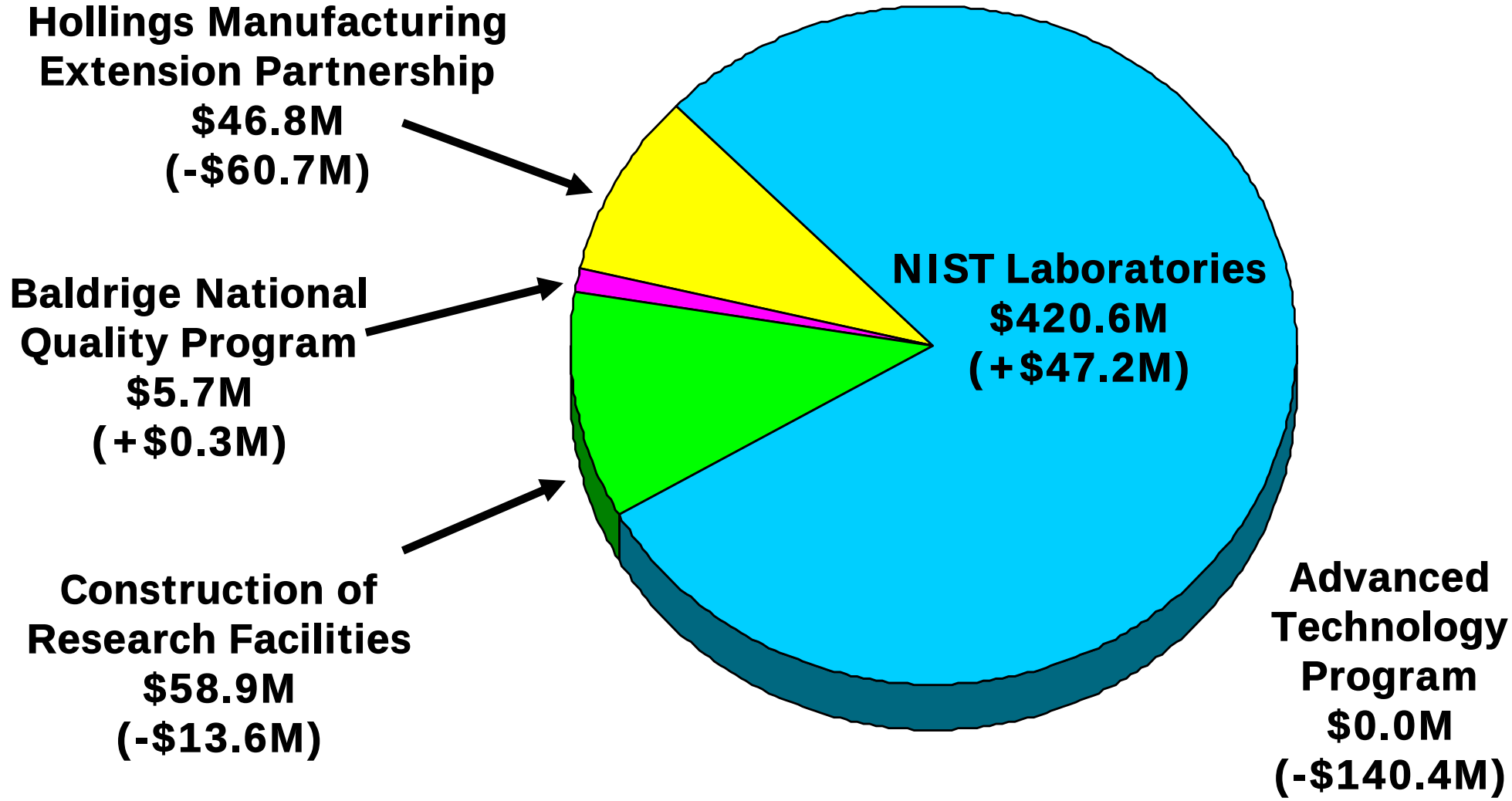
Appropriation:	FY 2004 Enacted	FY 2005 Enacted	FY 2006 Request
Scientific & Technical Research & Services (STRS):			
NIST Laboratories	**335.1***	**373.4 ***	**420.6**
Baldrige National Quality Program	**5.6**	**5.4**	**5.7**
Subtotal, STRS	**340.7**	**378.8**	**426.3**
Industrial Technology Services (ITS):			
Advanced Technology Program	**177.3**	**140.4**	**0.0**
Hollings Manufacturing Ext. Partnership	**39.2**	**107.5**	**46.8**
Subtotal, ITS	**216.5**	**247.9**	**46.8**
Construction of Research Facilities (CRF):			
Construction and Major Renovations	**20.9**	**6.9**	**23.9**
Modifications and Improvements	**22.6**	**22.7**	**35.0**
Directed Grants	**20.8**	**42.9**	**0.0**
Subtotal, CRF	**64.3**	**72.5**	**58.9**
Total	**621.5**	**699.2**	**532.0**

FY 2004 and FY 2005 amounts do not reflect rescissions of unobligated balances.

****Congressionally-directed STRS grants included: $13.8M STRS in 2004; $8.8M in 2005.***

NIST FY 2006 Budget Request to Congress (Compared to FY 2005 Enacted)

Total FY 2006 Request: $532.0M



NIST FY 2006 Budget Increases for the NIST Laboratories

- Provide the measurement and standards infrastructure to support **Advances in Manufacturing (+$19.6M)**

- Provide the measurement and standards infrastructure necessary to improve **Measurements and Standards for Homeland Security (+$3.0M)**

- Explore **New Measurement Horizons for the U.S. Economy and Science** to anticipate and respond to the needs of the Nation's scientific and industrial communities in rapidly developing technology areas **(+$17.2M)**

Advances in Manufacturing (+$19.6M)

Advances in measurement technology are needed to support sustained, superior innovation in 21st century manufacturing.

NIST solutions:

Four strategic measurement capabilities and activities with an emphasis on cooperative research with the private sector:

- National Nanomanufacturing and Nanometrology Facility (+$10.0M)
- Nanomanufacturing Research (+$4M)
- Manufacturing Enterprise Integration (+$1.6M)
- Expanding Access to Global Markets through Measurements and Standards (+$4.0M)

Advances in Manufacturing

National Nanomanufacturing and Nanometrology Facility (+$10.0M)

Research and partnerships to translate nanoscience innovation into manufacturing jobs and economic growth.

- Leverage the unique resource provided by the recently completed NIST Advanced Measurement Laboratory
- Develop *Instrumentation Research, Metrology, and Standards for Nanotechnology,* an overarching goal in the National Nanotechnology Initiative Strategic Plan
- Develop nanoscale measurement and fabrication technologies

Advances in Manufacturing

Nanomanufacturing Research(+$4.0M)

- Measurements and standards will be developed in the areas of nanodevices, nanomagnetics, nanomanipulation, and nanocharacterization for the developing nanotechnology industry
- Work will utilize the world's best measurement and nanometrology research facility, the AML
- The AML measurements can be accurately made at the scale of individual atoms
- This program will leverage the AML investments and make its benefits immediately accessible to U.S. nanomanufacturing researchers through the National Nanomanufacturing and Nanometrology Facility (N3F)

Advances in Manufacturing

Manufacturing Enterprise Integration (+$1.6M)

Open new global markets to small manufacturers by enabling them to communicate electronically with business partners.

- Excess costs to U.S. economy due to poor supply chain efficiency:
  - automotive industry: $5.0B/yr
  - electronics industry: $3.9B/yr
  - construction industry: $15.8B/yr
- Work with private sector to enable development of technically sound and unbiased standards critical for e-business
- Provide level of quality required for trust and confidence in transactions

Advances in Manufacturing

Expanding Access to Global Markets through Measurements and Standards (+$4.0M)

Retain and create U.S. manufacturing jobs by meeting the international standards challenge.

- Improve U.S. manufacturing productivity by providing efficient access to NIST measurement traceability
- Align U.S. standards for measuring instruments with international standards for seamless export
- Provide technical leadership and coordination to
  - ease access to foreign markets
  - ensure that U.S. interests are fairly represented

Measurements and Standards for Homeland Security (+$3.0M)

Through interdisciplinary measurements and standards, NIST is helping law enforcement, the military, emergency services and others to protect America from terrorist threats.

NIST solutions:

Two public safety and security programs to ensure delivery of infrastructural support essential to meeting critical safety and homeland security goals:

- Improved standards and guidelines for first responders and buildings (+$2.0M)
- Biometrics (+$1.0M)

Measurements and Standards for Homeland Security

Improved standards and guidelines for first responders and buildings (+$2.0M)

Respond to highest priority national needs.

Enable development and adoption of cost-effective technical solutions to enhance safety and avoid major disasters.

- Improved first responder equipment
- Better evacuation and emergency response procedures
- Risk-sensitive national practices for building safety

Measurements and Standards for Homeland Security

Biometrics (+$1.0M)

Dramatically improve accuracy of biometrics for border security by developing and certifying technical performance standards.

- Develop prototypes and tests for advanced systems that simultaneously process facial, fingerprint, and iris data (multi-modal systems)

- Support the requirements of the USA PATRIOT Act by developing tests for accuracy and interoperability of technologies that work in real-time environments

New Measurement Horizons for the U.S. Economy and Science (+$17.2M)

The Nation's scientific and industrial communities are challenged to keep pace with fast-breaking developments at the forefront of science and technology.

NIST solutions:

Advanced measurements, standards, and services to promote innovation in three rapidly developing technology areas:

- Biosystems and Health (+$7.2M)
- Interoperability and Security for Emerging Scientific Systems (+$2.0M)
- Quantum Processing—Beyond High-End Computing (+$4.0M)
- Building Competence for Advanced Measurements (+$4.0M)

New Measurement Horizons for the U.S.Economy and Science

Biosystems and Health (+$7.2M)

Accelerate U.S. global success in bio-innovation, manufacturing, and trade.

- Integrate the quantitative, physical sciences with biosystems and health arena for technology innovation
  - Bioinformatics--marriage of molecular biology with computer science
  - BioImaging--measurement science necessary to collect, analyze and store images reproducibly and securely
  - Measurement tools for gene and protein expression--enabling the discovery of new pharmaceuticals and of the causes of diseases

New Measurement Horizons for the U.S. Economy and Science

Interoperability and Security for Emerging Scientific Systems (+$2.0M)

Build trust, confidence, and usability in future scientific systems.

- Develop fundamental standards and measurements for emerging systems such as UPC code-replacing Radio Frequency Identification (RFID) tags for product identification

- Maximize the performance and security of future components, systems, and networks

New Measurement Horizons for the U.S. Economy and Science

Quantum Processing—Beyond High-End Computing (+$4.0M)

Develop the measurements and standards to enable quantum information science, which will likely revolutionize science and technology and produce tremendously powerful computing capabilities.

- Conduct world-leading research effort
- Develop prototype quantum processors
- Explore new approaches to computer architectures needed for quantum computing
- Develop understanding of quantum processors' memory control and of quantum languages, resulting in new information metrics and protocols

New Measurement Horizons for the U.S. Economy and Science

Building Competence for Advanced Measurements (+$4.0M)

Provide seed funds to explore high-risk, leading-edge research concepts that anticipate entirely new future measurement and standards needs of industry.

- Expand the scope and nature of the awards toward the development of multidisciplinary research projects that have greater visionary scope and impact

- Select and initiate several innovative strategic projects per year so that the total Competence Program represents approximately 5 percent of the total NIST Laboratories' efforts

NIST FY 2006 Budget Request for Industrial Technology Services

Budget constraints have required some tough budget decisions.

- **Advanced Technology Program (- $140.4M):**
  - No funding requested for FY 2006
- **Hollings Manufacturing Extension Partnership (- $60.7M):**
  - Decrease reflects Administration's policy and funding priorities

NIST FY 2006 Budget Request for Construction of Research Facilities Appropriation (+$35.4M)

The single most pressing issue for NIST's CRF program is the growing obsolescence of its aging facilities.

NIST solutions:

- Maintenance for the Advanced Measurement Laboratory (+$3.4M)
- Facilities Improvements (+$32.0M)

Construction of Research Facilities

Maintenance for the Advanced Measurement Laboratory (+$3.4M)

Maintaining and operating one of the most advanced research facilities in the world will be very challenging.

Provide specialized maintenance required by AML mechanical and electrical systems.

- AML houses complex, advanced mechanical and electrical systems
- No other systems in NIST's current inventory are nearly as sophisticated

Construction of Research Facilities

Facilities Improvements (+$32.0M)

World-class work is impeded by obsolete Boulder and Gaithersburg facilities.

President Eisenhower dedicates NIST's Boulder campus in 1954

NIST solutions:

- Boulder Central Utility Plant (+$9.4M)
- Boulder Building 1, Phase 1 Design (+$6.5M)
- Boulder Building 4 Design and Limited Renovation (+$4.0M)
- NIST North Relocation and Remediation (+$4.0M)
- Safety, Capacity, Maintenance, and Major Repairs Base (+$8.1M)