“Computer science is largely concerned with an understanding of how low-level details make it possible to achieve high-level goals.”

—Don Knuth, Turing Award Winner.
NIST MISSION

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: Basic Stats and Facts

**Major asset**

- ~ 2800 federal employees
- ~ 2600 associates and facilities users/year
- ~ 1600 field staff in partner organizations (Manufacturing Extension Partnership)
- Two main locations, MD and CO
- Four collaborative Institutes (basic physics, biotech, quantum, marine)

**FY 2010 Appropriations $862 M**

- **$520 M** Scientific and Technical Research Services
- **$195 M** Industrial Technology Services
- **$147 M** Construction of Research Facilities

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ITL Mission

To promote U.S. innovation and industrial competitiveness by advancing

measurement science,
standards, and

technology

through research and
development in

information technology,
mathematics, and

statistics.
ITL Strategic Goals

• Accelerate, through standards, tests and metrics, the development, deployment and use of secure, usable, interoperable and reliable information systems that make American businesses more innovative and more competitive.

• Enable world-class measurement and testing through research innovations in the areas of computer science and systems engineering, mathematics and statistics.
Strategic/Exploratory
- Complex Systems
- Pervasive IT
- Virtual Measurements
- Shape Metrology

National Priorities in Information Technology
- Cloud Computing
- Health IT
- Identity Management
- National Initiative for Cybersecurity Education
- National Strategy for Trusted Identities in Cyberspace—National Program Office
- Security Automation
- Supply Chain—Cyber
- Voting Standards
National Priorities with Critical IT Aspects

- Biosciences And Bioimaging
- Cyber Physical Systems
- Forensics
- Greenhouse Gas Measurement
- Optical Medical Imaging
- Public Safety Communications
- Quantum Information
- Smart Grid
- Trusted Networking (Ipv6, DNSsec)
Emerging Growth Areas

  – Ensuring a Secure and Robust Cyber Infrastructure
    • NICE
    • NSTIC
    • Scalable Cybersecurity for Emerging Technologies and Threats
  – Interoperability Standards for Emerging Technologies
    • Cloud Computing
    • Health IT
    • Smart Grid
  – Advanced Materials for Industry
    • IT Aspects of Advanced Materials for Industry
  – Public Safety Innovation Fund: Research to Revolutionize Public Safety Communications
    • Public Safety Broadband Network

• **Other Strategic Opportunities**
  – Cybersecurity Center of Excellence
  – **Data/Information/Knowledge (Ontologies, Analysis, Visualization, etc.)**
  – Materials by Design
  – Broadband Interoperability
  – Risk: Measurement and Management
  – Technology Mediated Social Participation