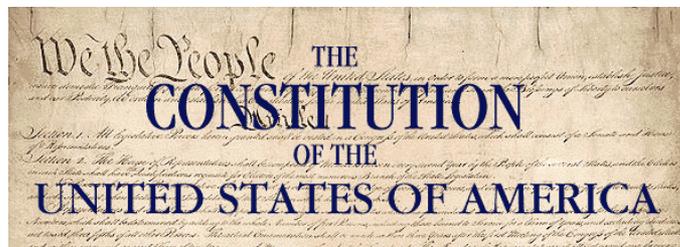


The Computer Security Division

Measurement Science for IT  *IT for Measurement Science*



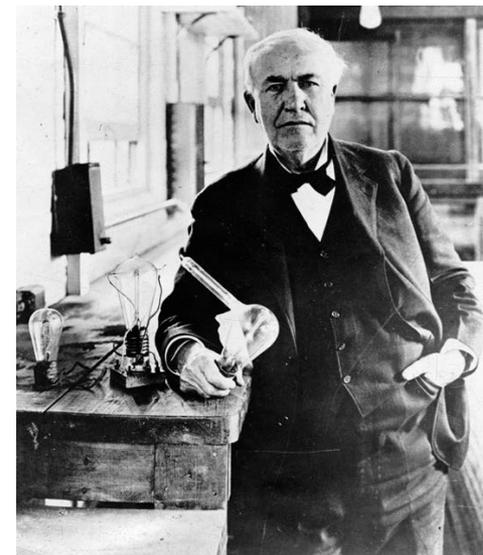
The Importance of Standards



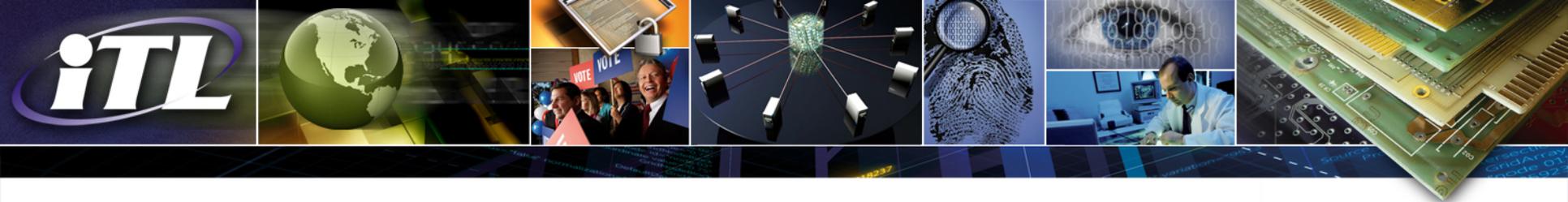
Article I, Section 8: The Congress shall have the power to...*fix the standard of weights and measures*

- National Bureau of Standards established by Congress in 1901
- Eight different “authoritative” values for the gallon
- Electrical industry needed standards
- American instruments sent abroad for calibration
- Consumer products and construction materials uneven in quality and unreliable

Estimated that 80% of global merchandise trade is influenced by testing and other measurement-related requirements of regulations and standards



National Archives



NIST Mission and Programs

“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 Laboratories

U.S. Industry's National Lab

- Create critical measurement solutions and promote equitable standards to stimulate innovation, foster industrial competitiveness, and improve the quality of life.

Hollings Manufacturing Extension Partnership

- Nationwide network of resources helping smaller manufacturers compete globally

Baldrige Performance Excellence Program

Promoting and recognizing performance excellence via information and Presidential awards in manufacturing, service, small business, education, health care, and the nonprofit sector

Technology Innovation Program

Supports development of cutting edge technologies by the private sector and universities to address critical national needs and key societal challenges

NIST is the nation's innovation agency

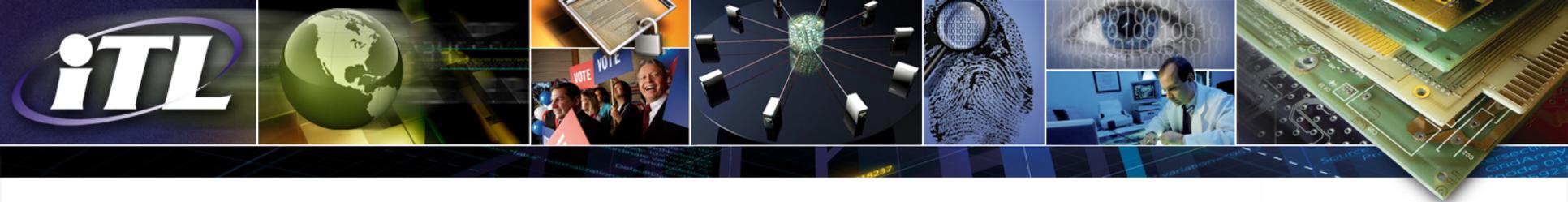


Courtesy Stoner Inc.



Courtesy Steuben





NIST has... ..four joint institutes



JILA
NIST + University of Colorado

**Institute for Bioscience and
Biotechnology Research**
NIST + University of Maryland
College Park + The University of
Maryland Baltimore



Joint Quantum Institute
NIST + University of Maryland + NSA
Hollings Marine Laboratory
NIST + NOAA + South Carolina
+ College of Charleston
+ Medical University of South Carolina





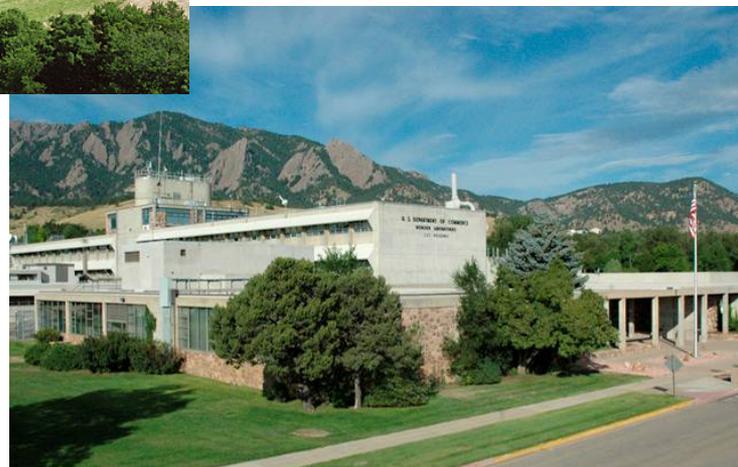
NIST has... .. two main campuses

Gaithersburg, MD

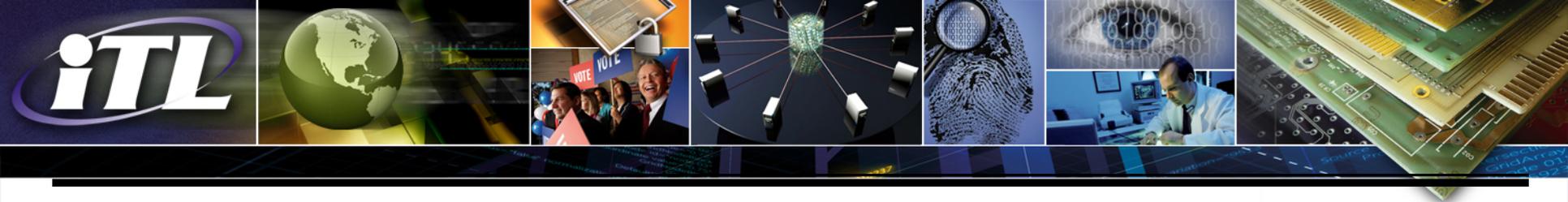


Courtesy HDR Architecture, Inc./Steve Hall © Hedrich Blessing

Boulder, CO



© Geoffrey Wheeler



NIST Products and Services Measurement Research

- ~ 2,200 publications per year

Standard Reference Data

- ~ 100 different types
- ~ 6,000 units sold per year
- ~ 226 million data downloads per year



© Robert Rathe



Standard Reference Materials

- ~ 1,300 products available
- ~ 30,000 units sold per year

Calibration Tests

- ~ 18,000 tests per year

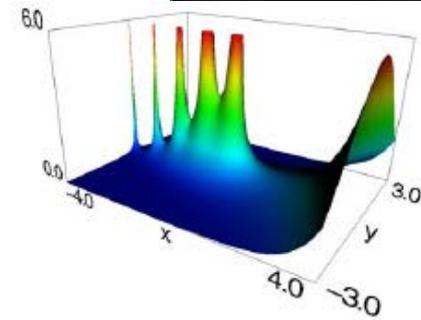
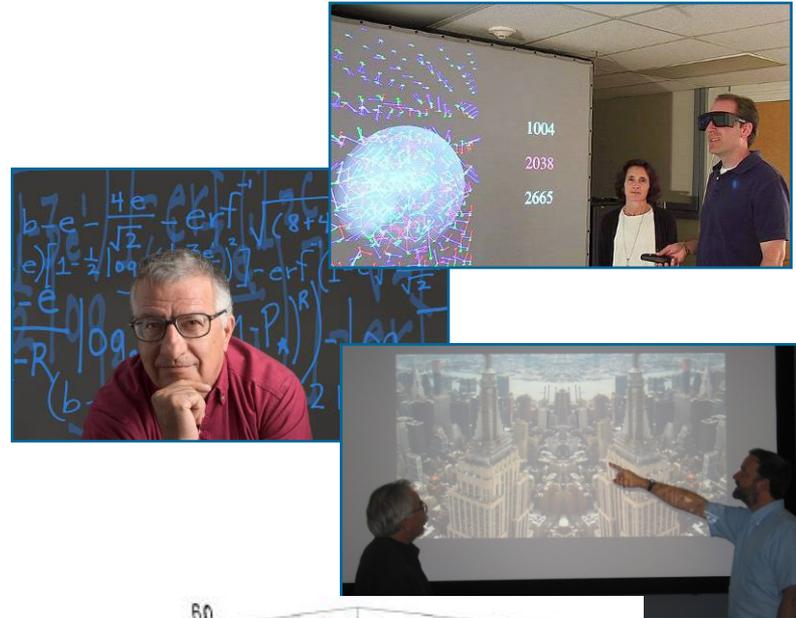
Laboratory Accreditation

- ~ 800 accreditations of testing and calibration labs



ITL Mission

ITL promotes innovation and industrial competitiveness through research and development at the intersection of measurement science and information technology.





Charles H. Romine, Director



Chief Cybersecurity Advisor
Donna Dodson, Actg.



Senior Internet Policy Advisor
Adam Sedgewick



**Associate Director for
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Kamie Roberts



Deputy Director
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Assistant Director for Boulder
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Applied & Computational Mathematics
Ron Boisvert

Advanced Network Technologies
Abdella Battou

Computer Security
Matthew Scholl



Information Access
Ashit Talukder



Software and Systems
Ram Sriram



Statistical Engineering
Antonio Possolo



CSD Organization

- Cryptographic Technology Group – Lily Chen
- Security Components and Mechanisms Group- Lee Badger
- Secure Systems and Applications Group – Dave Ferraiolo
- Security Outreach and Integration Group- Kevin Stine
- Security Testing, Validation, and Measurement Group – Mike Cooper



New Items Under Draft

- Risk Management
- PIV Docs
- Crypto Docs
- Automation Docs
- Technology Docs
- Tools and Test References



Where Things Are Going? Where we need to provide guidance, Where Standards can help

- Information Sharing
- CPS/IOT
- Mobility
- Active Defenses-Self Healing Systems
- Big Data
- Social Media
- Cloud and Fog
- Connectivity
- Post Quantum
- Privacy



What We Are Doing?

- Standards Bodies With Industry for the COTS we need
- Updates (or removals) of Older Guidance
- Update the Presentation of our References
- Process Improvement. Transparency, Traceability and Trust
- Executive Order
- NCCoE