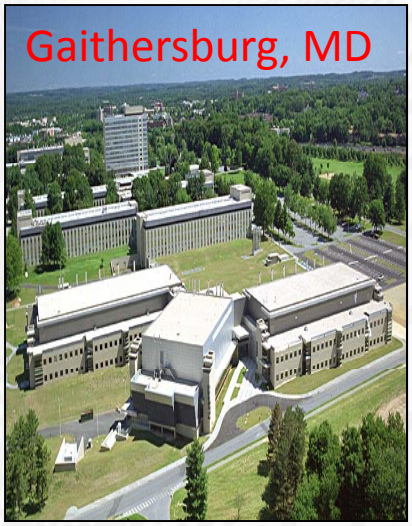
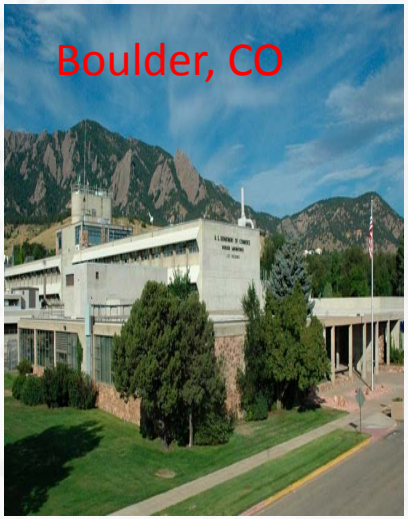
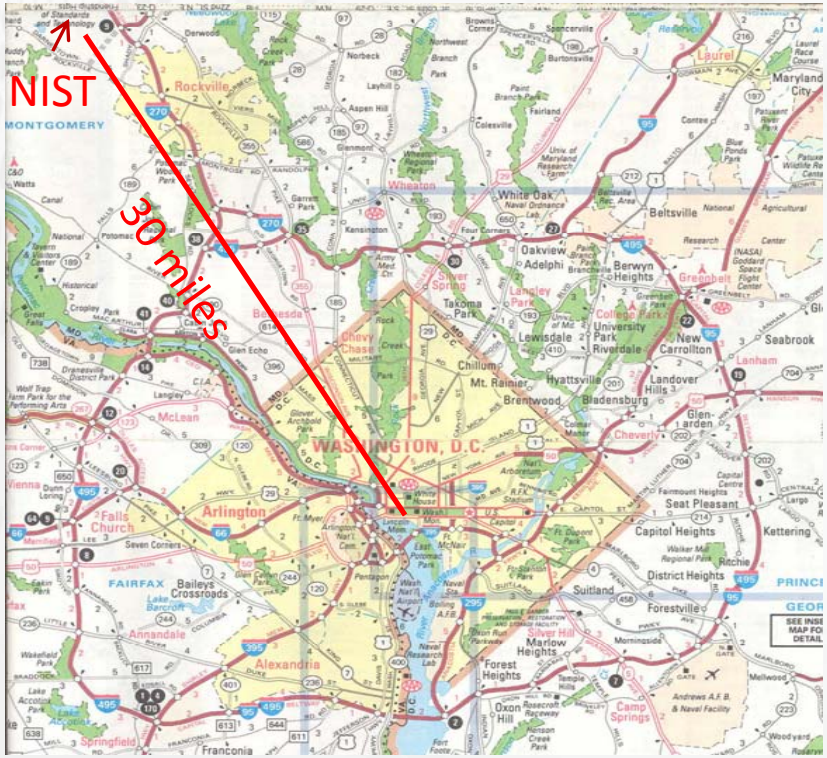
NIST Overview

Engineering & Material Measurement Laboratories
National Institute of Standards and Technology
Gaithersburg, MD





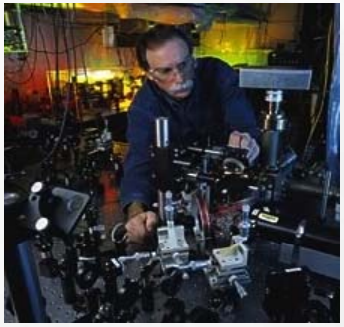


NIST Mission

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

- measurement science,
- standards, and
- technology

to enhance economic security and improve our quality of life



NIST Products and Services

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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

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 laboratories

NIST at a Glance

•Major Assets

- ~ 3000 employees ~ (50/50 technical/admin)
- ~ 2600 associates and facilities users

•Major Programs

- NIST Laboratories
- Baldrige Performance Excellence Program: Promote and recognize performance excellence
- Hollings Manufacturing Extension Partnership: help smaller manufacturers compete globally
- Technology Innovation Program (TIP): Supports development of cutting edge technologies by the private sector.

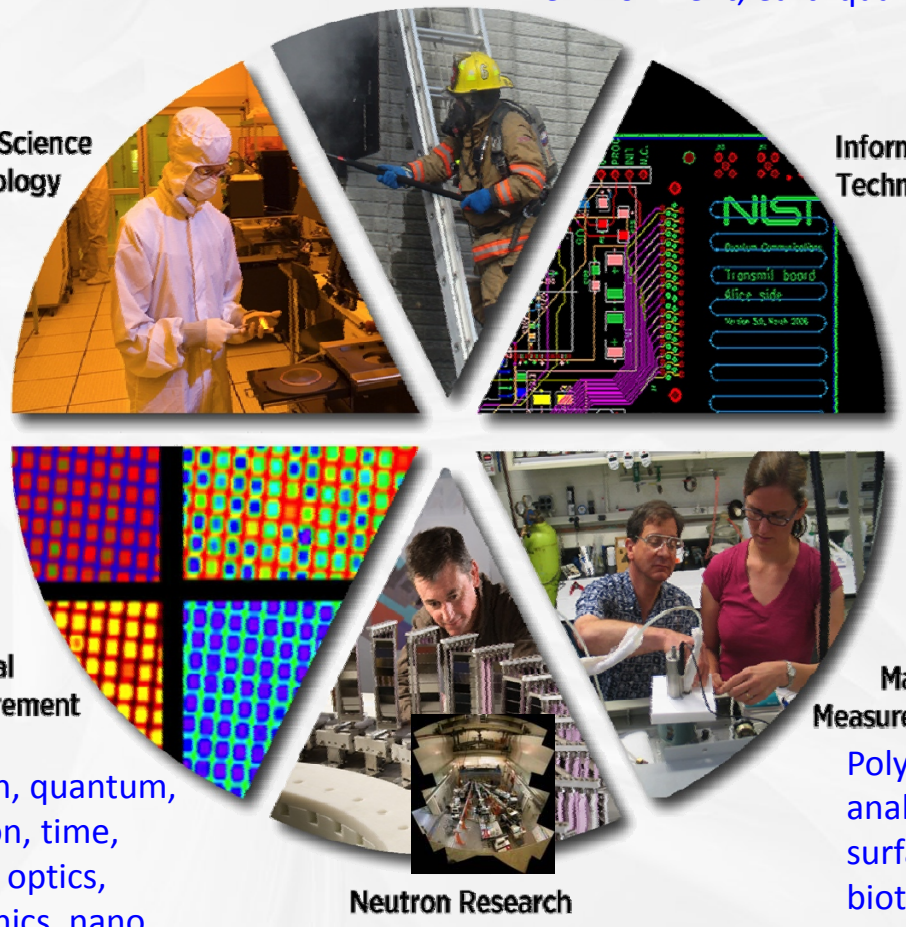
The NIST Laboratories

NIST's work enables

- **Science**
- **Technology innovation**
- **Trade**
- **Public benefit**

NIST works with

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



Technology Development and NIST

Discovery / Proof of Principle

- Peer-reviewed journal articles
- Intellectual property, SBIR
- Contact: NIST PIs

Cooperation / Consortia

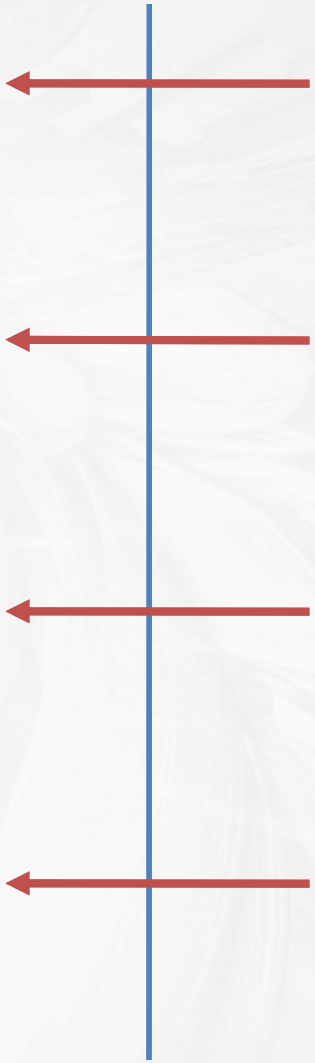
- Alliance for Regenerative Medicine
- IBBR with Univ. of Maryland
- Contact: NIST Laboratories / TIP

Rapid growth of an industry

- Industry-wide standard practices
- Transition to manufacturing
- Contact: NIST Programs / TIP

Mature industry

- Greater focus on efficiency
- Integrated network of stakeholders
- Contact: All of the above



- World-class measurements
- World-class science
- High impact publications
- Nobel laureates, National Academy

- Multidisciplinary programs
- Alignment with roadmaps
- *Technology Innovation Program*
- *Cooperative Agreements*

- Lead standards development
- Measurement solutions; Tech transfer
- *Material Measurement Lab*

- Standards and standard practices
- Calibrations services
- *ISO / ASTM*
- *Manufacturing Extension Partnership*

Materials and Construction Research Division

Jon Martin, Chief

Polymeric Materials

Joannie Chin

- Nanoparticle Release During Life Cycle of Nanostructured Polymeric Materials
- Photoreactivity of Narrow Band Gap Metal Oxide Nanostructures
- Service Life Prediction for Pipe Materials and Building Sealants
- Service Life Prediction of Photovoltaic Packaging Materials
- Surface and Interface Characterization of Polymers

Structures

Fahim Sadek

- Fire Resistance Design and Rehabilitation of Structures
- Prevention of Disproportionate Structural Collapse
- Wind Engineering and Multi-Hazard Failure Analysis

Construction Metrology & Automation

Geraldine S. Cheok, Acting

- Performance and Use of 3D Imaging Systems
- The Intelligent and Automated Construction Job Site Testbed
- Construction Control Using 3D Imaging and Building Information Models

Inorganic Materials

Ken Snyder

- Doubling Concrete Service Life
- Quantitative Characterization of Concrete-Making Materials for Performance Prediction and Increased Fly Ash Utilization in Concrete
- Rheology-Based Processing of Concrete

http://www.nist.gov/el/building_materials/index.cfm

Polymers Division

Eric K. Lin, Chief

Sustainable Polymers

Kathryn L. Beers

- Renewable polymers
- Membranes for Clean Water
- Biocomposites
- Soft Body Armor

Energy & Electronics

Christopher L. Soles

- Nanoscale dimensional metrology
- Organic electronics and PV
- Energy Storage and Delivery

Biomaterials

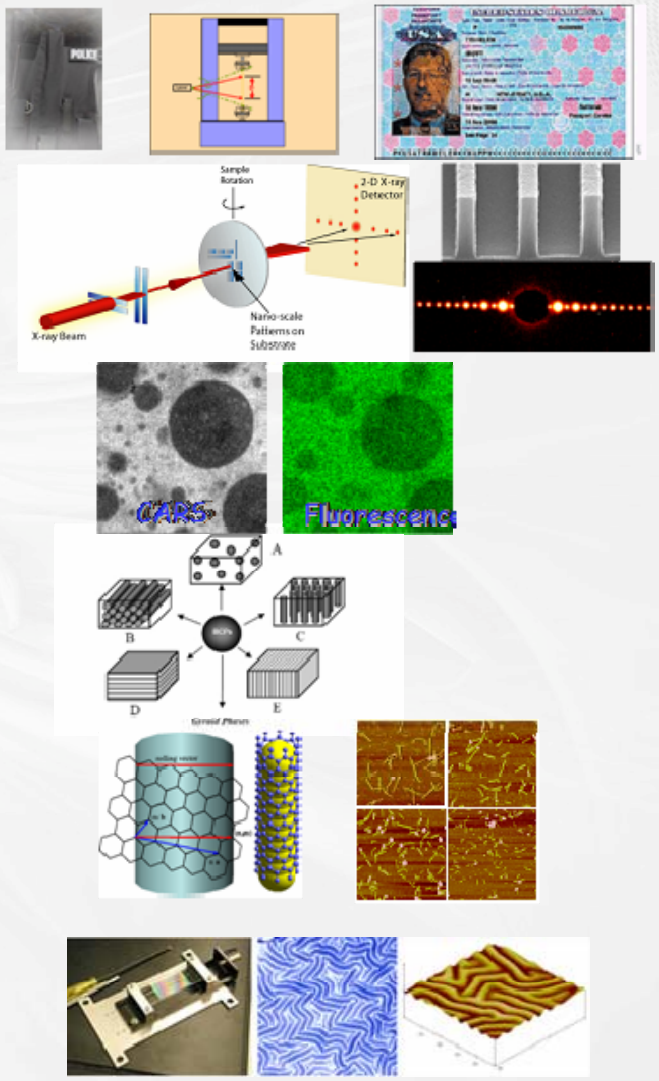
Sheng Lin-Gibson, Acting

- Dental materials
- 3D Tissue scaffolds
- Bioimaging
- Protein Preservation

Complex Fluids

Kalman B. Migler

- Carbon nanotubes
- Micro-rheology
- Nanoparticle assembly



http://www.nist.gov/mml/polymers