Unique Role of NIST Laboratory Research Programs

Measurements and Standards

- Emphasis on infrastructural metrology and non-proprietary, standardized metrology methods that address a broad class of measurement challenges
- Emphasis on rigorous and generic procedures to characterize measurement uncertainty that comply with international standards
- Long-term commitment, expertise, and neutrality essential for harmonized and unbiased national and international standards
- Leverage NIST core competences in measurement science, rigorous traceability, and development and use of standards -- as well as specific expertise in measurements and standards for manufacturing systems, processes, and equipment

Primary Outputs of NIST Research Laboratories

- Measurement methods
- Performance test methods and metrics
- Calibration services
- Documentary standards
- Standard reference materials
- Standard reference data
- Technology transfer: technical publications, industry workshops, collaborations

NIST Focus on Measurement Science

Measurement science research and services include:

- Development of performance metrics, measurement and testing methods, predictive modeling and simulation tools, knowledge modeling, protocols, technical data, and reference materials and artifacts
- Conduct of inter-comparison studies and calibrations
- Evaluation of technologies, systems, and practices, including uncertainty analysis
- Development of the technical basis for standards, codes, and practices—in many instances via testbeds, consortia, standards development organizations, and/or other partnerships with industry and academia