Standards: Enabler of Sustainability
AN ACADEMIC-INDUSTRY WORKSHOP

Sponsored and organized by
The National Institute of Standards and Technology
Michigan State University, NSF International, and Northwestern University

May 17, 2017
E. Lansing Michigan
Why are we here?
Goal of NIST workshops

Upgrade the recognition and coverage of standards which are growing in importance and the teaching of standards and standardization in academia by

• presenting standards in the context of pressing problems and fields,

• engaging faculty, industry and SDO’s together

• demonstrating pedagogy (the discipline that deals with the theory and practice of education; the study of how best to teach.)

And as a bonus

• stimulating the evolution of an industry-academic community or relationships that would continue the dialogue and help to advance work on this topic
Past workshops

• Workshop 1 at Northwestern gave equal attention to smart grid, cloud computing and related supply chain.
• Workshop 2 at UCLA focused on smart manufacturing,
• Workshop 3 at University of Pittsburgh targeted cybersecurity
• Workshop 4 at Georgetown University considered global supply chain;
• and Workshop 5 this past September at Harvard addressed the digital economy.
• Total participation: 240 including from 45 companies and associations and over 50 universities (multiple departments and schools in each) as well as a few government
NIST Mission

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.

<table>
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<tr>
<th>measurement science</th>
<th>Creating the experimental and theoretical tools – methods, metrics, instruments, and data – that enable innovation.</th>
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<tbody>
<tr>
<td>standards</td>
<td>Disseminating physical standards and providing technical expertise to documentary standards that enable comparison, ensure interoperability, and support commerce.</td>
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<tr>
<td>technology</td>
<td>Driving innovation through knowledge dissemination and public-private partnerships that bridge the gap between discovery and the marketplace.</td>
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NIST at a Glance

- **3400+ Employees**
- **Focus on Advanced Manufacturing**
- **2 Campuses**
  - Gaithersburg, MD [HQ]
  - Boulder, CO
- **Focus on Quantum Science**
- **4 Nobel Prizes**
- **Focus on Health & Bioscience**
- **Focus on Advanced Communications**
- **400+ Business Using NIST Facilities**
- **Focus on Cybersecurity**
- **3800+ Associates & Facilities Users**
- **Focus on Disaster Resilience**
- **9 Collaborative Institutes**
# NIST Laboratory Programs

**Metrology Laboratories**
- Material Measurement Laboratory
- Physical Measurement Laboratory

**Technology Laboratories**
- Engineering Laboratory
- Information Technology Laboratory
- Communication Technology Laboratory

**National User Facilities**
- Center for Nanoscale Science and Technology
- NIST Center for Neutron Research

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Driving innovation through Measurement Science and Standards

Accelerating the adoption and deployment of advanced technology solutions

Providing world class, unique, cutting-edge research facilities
Standards Coordination Office (SCO)

SCO provides standards and conformity assessment expertise and services in support of government and industry.

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<th>Coordination</th>
<th>Guidance</th>
<th>Information Services</th>
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Standards Terminology: Key Terms

STANDARD
Technical specification for a product, service, person, process or system with which *compliance is voluntary*.

TECHNICAL REGULATION
Technical specification for a product, service, person, process or system with which *compliance is mandatory*.

CONFORMITY ASSESSMENT
Processes used to verify the compliance of a product, service, person, process or system to either a standard or a regulation (e.g., testing, certification, inspection)
WHO IS HERE TODAY?
WHO IS HERE TODAY

As registered:

good mix with

• 55% academic institutions (multiple schools and departments),
• 31% industrial organizations,
• 14% standards organizations and government agencies represented