NIST's Unique Role in Intramural Technology Transfer

Presentation to the NIST Visiting Committee on Advanced Technology
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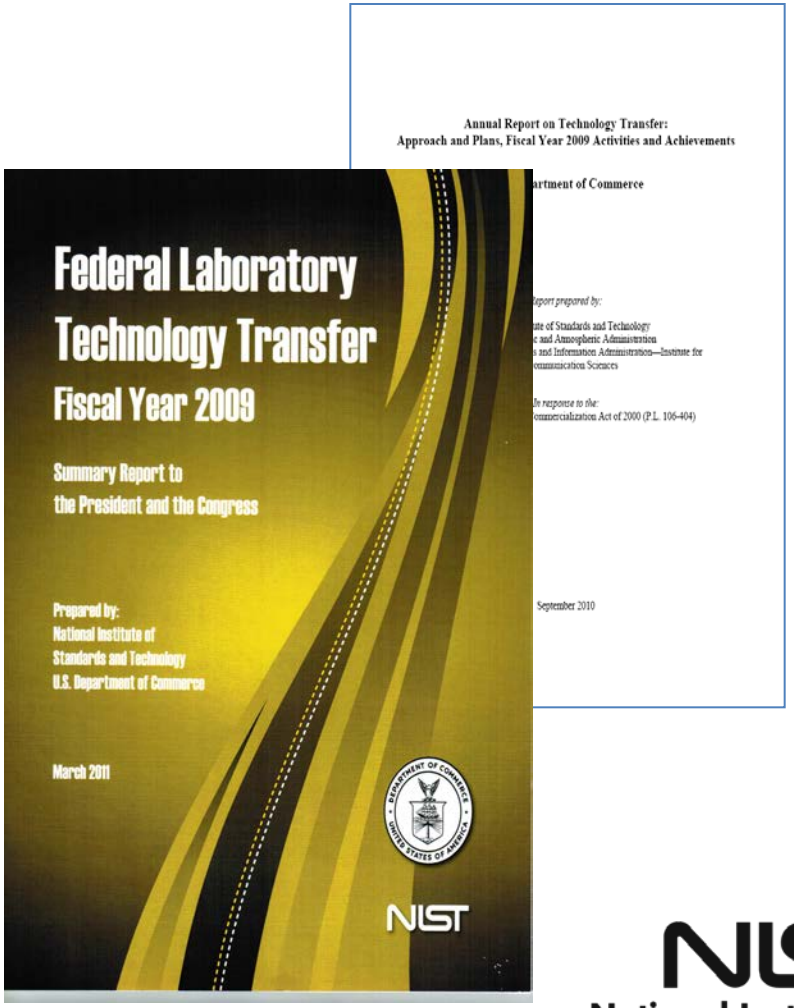
National Institute of Standards and Technology
U.S. Department of Commerce

NIST Policy Leadership

- On behalf of the Department of Commerce, NIST has a unique role in promoting and reporting on the overall strength of federal efforts in technology transfer
- Policy coordination, promulgation of technology transfer regulations, including Bayh-Dole
- Chairs the Interagency Workgroup for Technology Transfer (11 agencies)
- Annual reports for the President, the Congress, and OMB on utilization of technology transfer by DOC and across all agencies
- Statutory role to provide support to the Federal Laboratory Consortium for Technology Transfer (~300 labs)

Technology Transfer Reporting

- Annual Report to OMB on DOC Technology Transfer
- Includes NIST, NOAA, ITS
- Annual Report to President and Congress on Federal Laboratory
- Produced by NIST through the Interagency Workgroup for Technology Transfer



National Institute of Standards and Technology
U.S. Department of Commerce

October 28, 2011

MEMORANDUM FOR THE HEADS OF EXECUTIVE DEPARTMENTS AND AGENCIES

SUBJECT: Accelerating Technology Transfer and Commercialization of Federal Research in Support of High-Growth Businesses

Section 1. Policy. Innovation fuels economic growth, the creation of new industries, companies, jobs, products and services, and the global competitiveness of U.S. industries. One driver of successful innovation is technology transfer, in which the private sector adapts Federal research for use in the marketplace. One of the goals of my Administration's "Startup America" initiative, which supports high-growth entrepreneurship, is to foster innovation by increasing the rate of technology transfer and the economic and societal impact from Federal research and development (R&D) investments. This will be accomplished by committing each executive department and agency (agency) that conducts R&D to improve the results from its technology transfer and commercialization activities. The aim is to increase the successful outcomes of these activities significantly over the next 5 years,

http://www.whitehouse.gov/the-press-office/2011/10/28/presidential-memorandum-accelerating-technology-transfer-and-commerciali

Presidential Memorandum

Section 1. Policy
- Commits each agency to improve the results from its tech transfer and commercialization activities
- Increase the successful outcomes of these activities significantly over the next 5 years.

Sec. 2. Establish Goals and Measure Progress
- Agencies
  - Develop plans that establish performance goals and measures within 180 days
  - Plans cover the 5 year period from 2013 through 2017
  - Plans are agency specific based on mission
  - Agency heads encouraged to include tech transfer overall laboratory evaluation.
- The Interagency Workgroup on Technology Transfer
  - Recommend opportunities for improving Federal tech transfer
  - Improve and expand collection of metrics

Sec. 3. Streamline the Federal Government's Technology Transfer and Commercialization Process
- Review licensing/CRADA procedures
- CIO/CTO, in coordination with other agencies: List all federal inventions on a public Government database; increase the usefulness and accessibility of this data
- SBIR and STTR

Sec. 4. Facilitate Commercialization through Local and Regional Partnerships
- Collaborate/participate in regional technology innovation clusters
- Applied research and business support programs on or near Federal laboratories
- Strengthen the commercialization activities in local region.

Technology Transfer

In response to the President's Memo on *Accelerating Technology Transfer and Commercialization of Federal Research in Support of High-Growth Businesses (Oct. 2011),* NIST will:

- Develop five-year plan to increase technology transfer activities with external partners.
- Define full range of NIST's technology transfer mechanisms and execute a coordinated effort to track the outcomes and impacts of such activities.
- Convene and lead *Interagency Work Group on Tech Transfer* to identify opportunities for improving technology transfer from Federal laboratories.
- Improve and expand the collection of metrics and develop rigorous economic impact models and tools.

Pat Gallagher, March 23 Manager Meeting

NIST Tech Transfer

Traditional Tech Transfer but also…

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

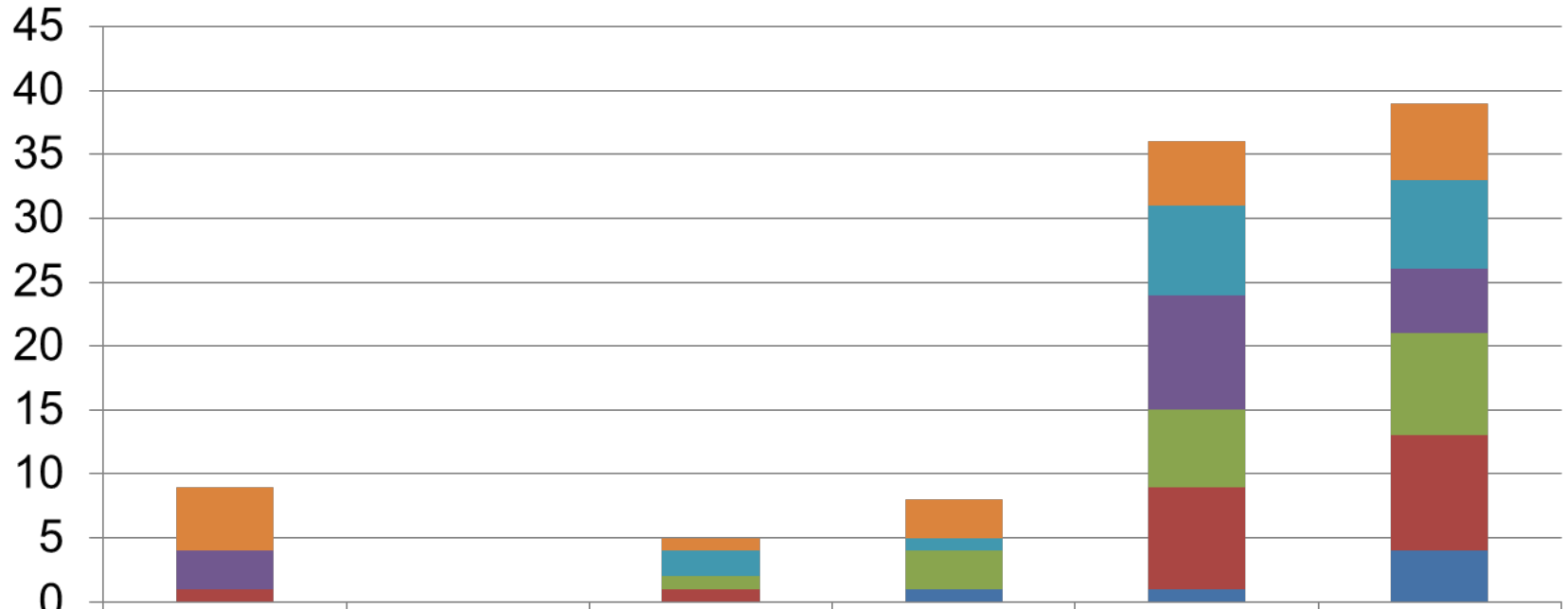
NIST Technology Transfer Plan

Technology transfer is the overall process by which NIST knowledge, facilities, or capabilities in measurement science, standards and technology promote U.S. innovation and industrial competitiveness in order to enhance economic security and improve quality of life.

- Goal: Improve Transfer of NIST Technology and Work Products
  - Revised patent policy and criteria (Celebrate invention, focus on commercialization and US manufacture)
  - New license programs to promote transfer and assist small business
- Goal: Improve NIST Technology Transfer Through Collaborations
  - Streamline and simplify NIST CRADAs
  - Refocus and enhance SBIR program
  - Improve outreach

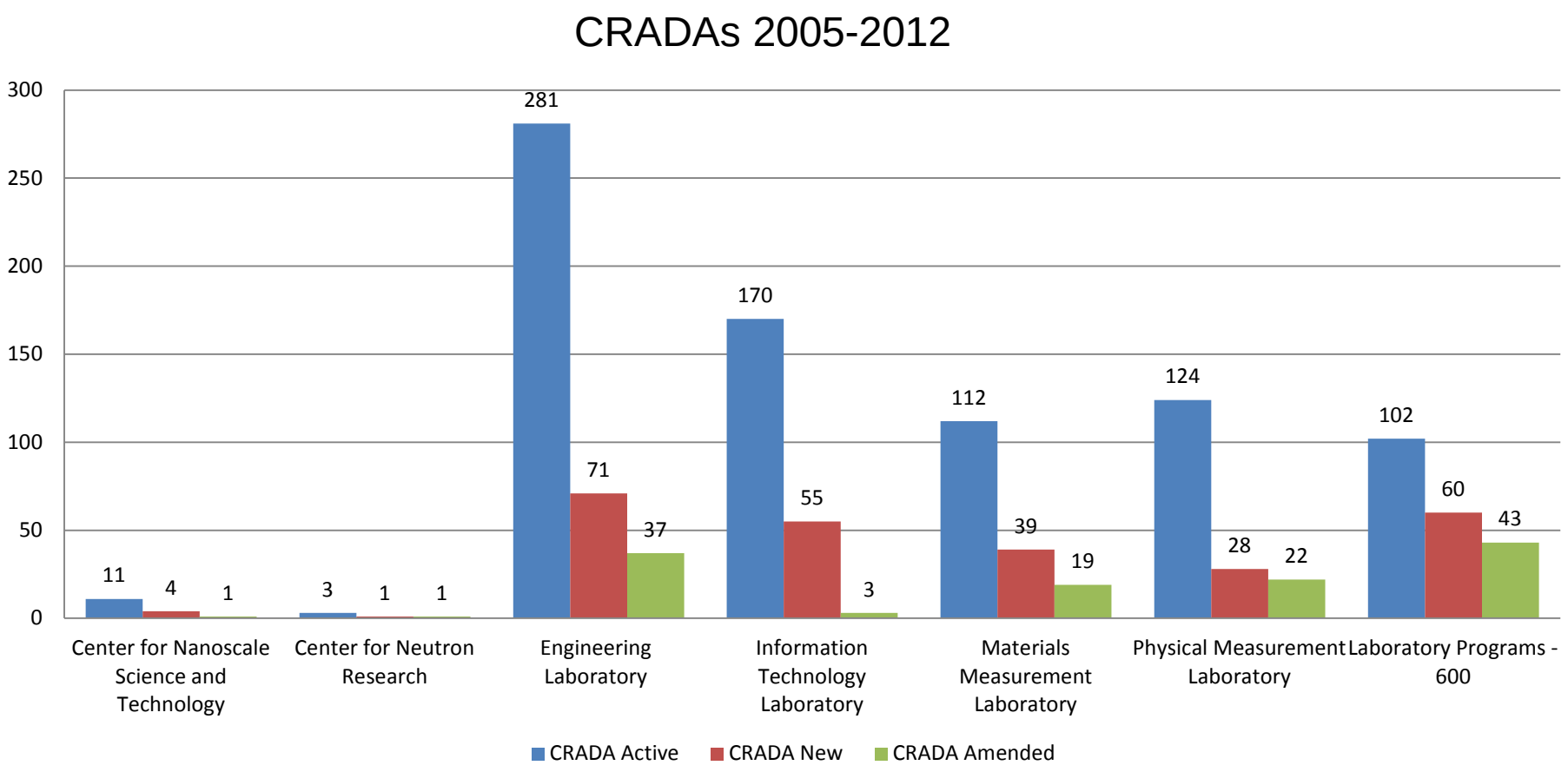
Retained Metrics	Expanded metrics	New Metrics
1. Publications 2. Calibrations 3. Training 4. STEM Education 5. Accreditations	1. Standard Reference Data Products 2. Standard Reference Materials 3. Patents and Licenses 4. User Facility Research Participants 5. Collaborations 6. Documentary Standards	1. Software 2. Post-Doctoral Researchers 3. Start-ups and Young Technology Companies 4. Technology Transfer through Non-NIST Employees and Informal Collaborations

Patents

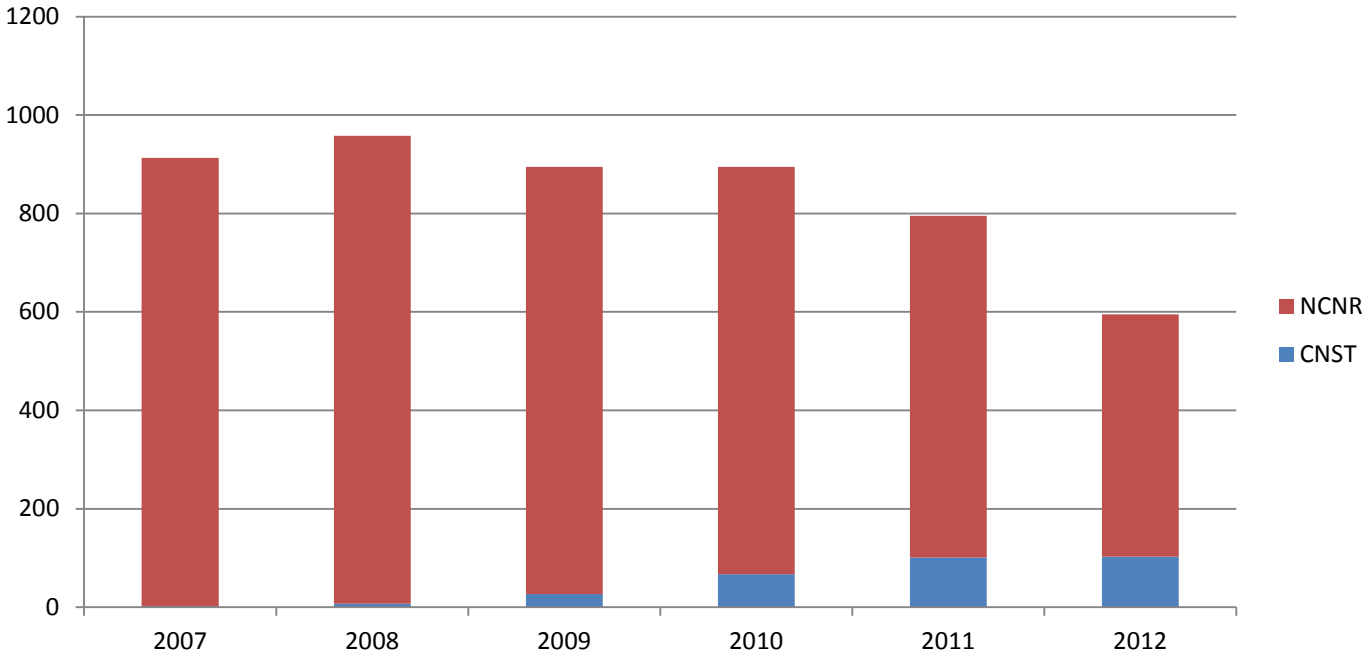


	CNST	NCNR	EL	ITL	MML	PML
2012	5		1	3	5	6
2011			2	1	7	7
2010	3				9	5
2009			1	3	6	8
2008	1		1		8	9
2007				1	1	4

CRADA Metrics

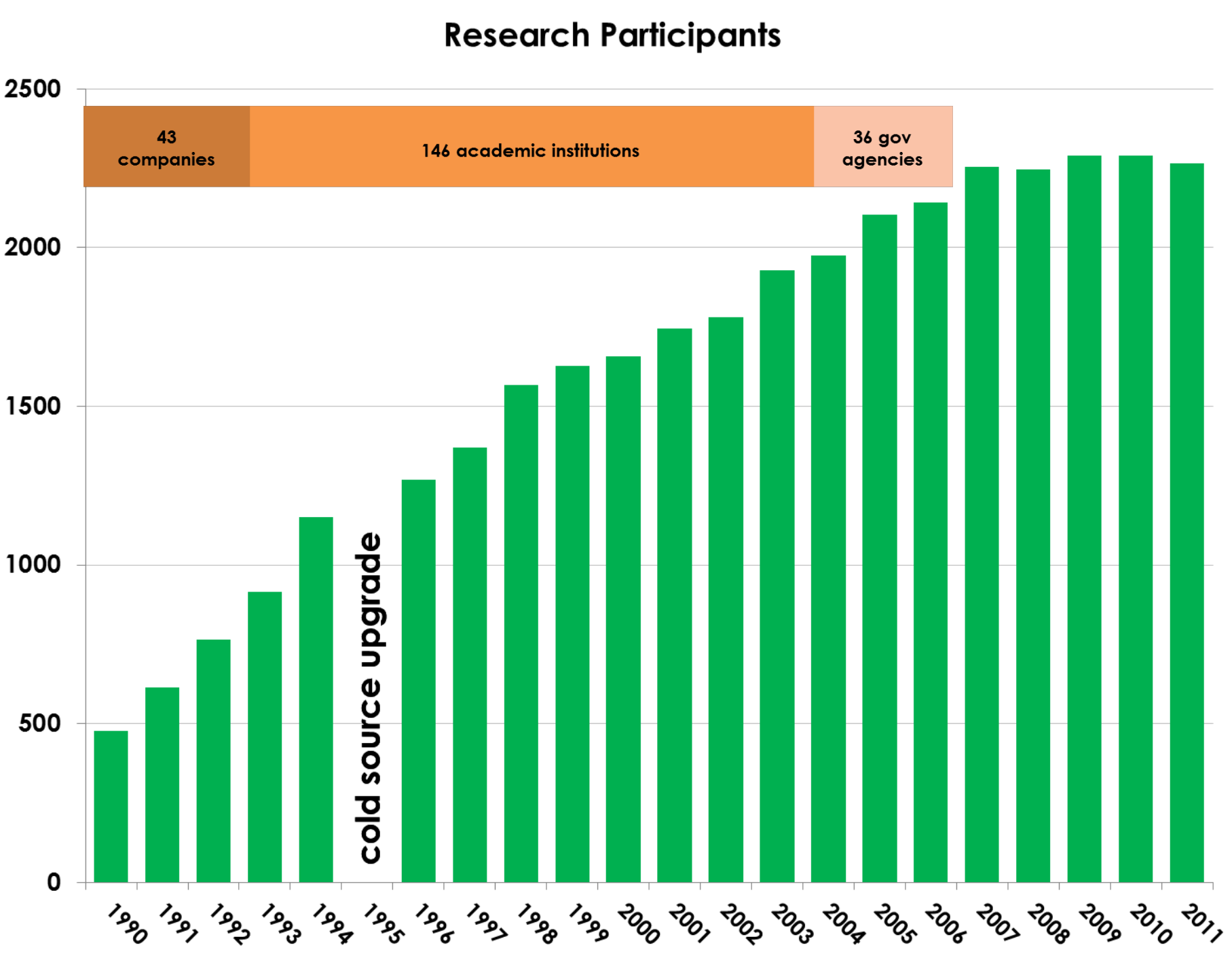


Facility Users from NAIS



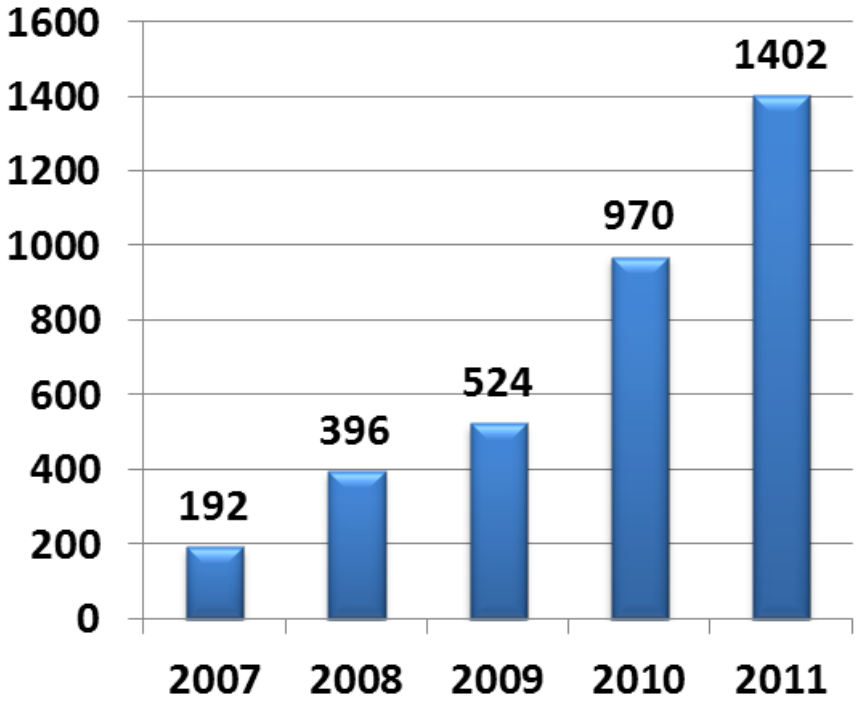
Year	CNST	NCNR
2007	2	911
2008	7	951
2009	27	868
2010	67	828
2011	101	694
2012	103	492

NCNR


Research Participants
43 companies
146 academic institutions
36 gov agencies
2500
2000
1500
1000
500
0
cold source upgrade
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011

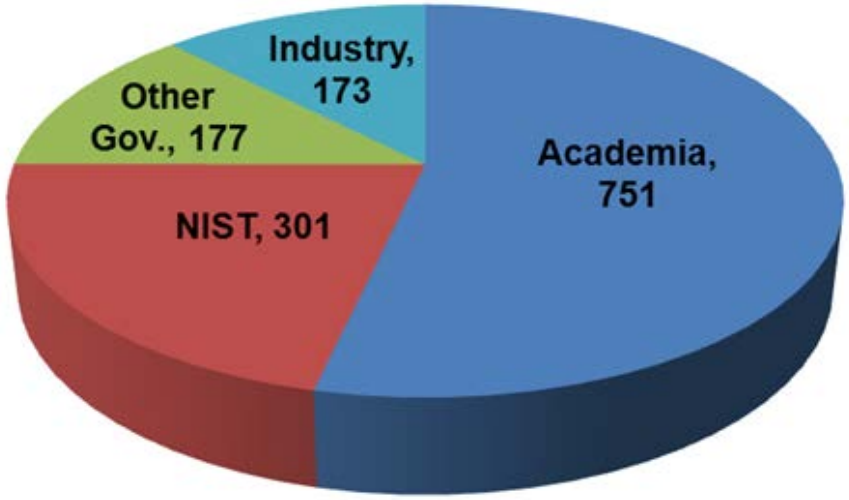
CNST Research Participant Growth

Research Participant Growth



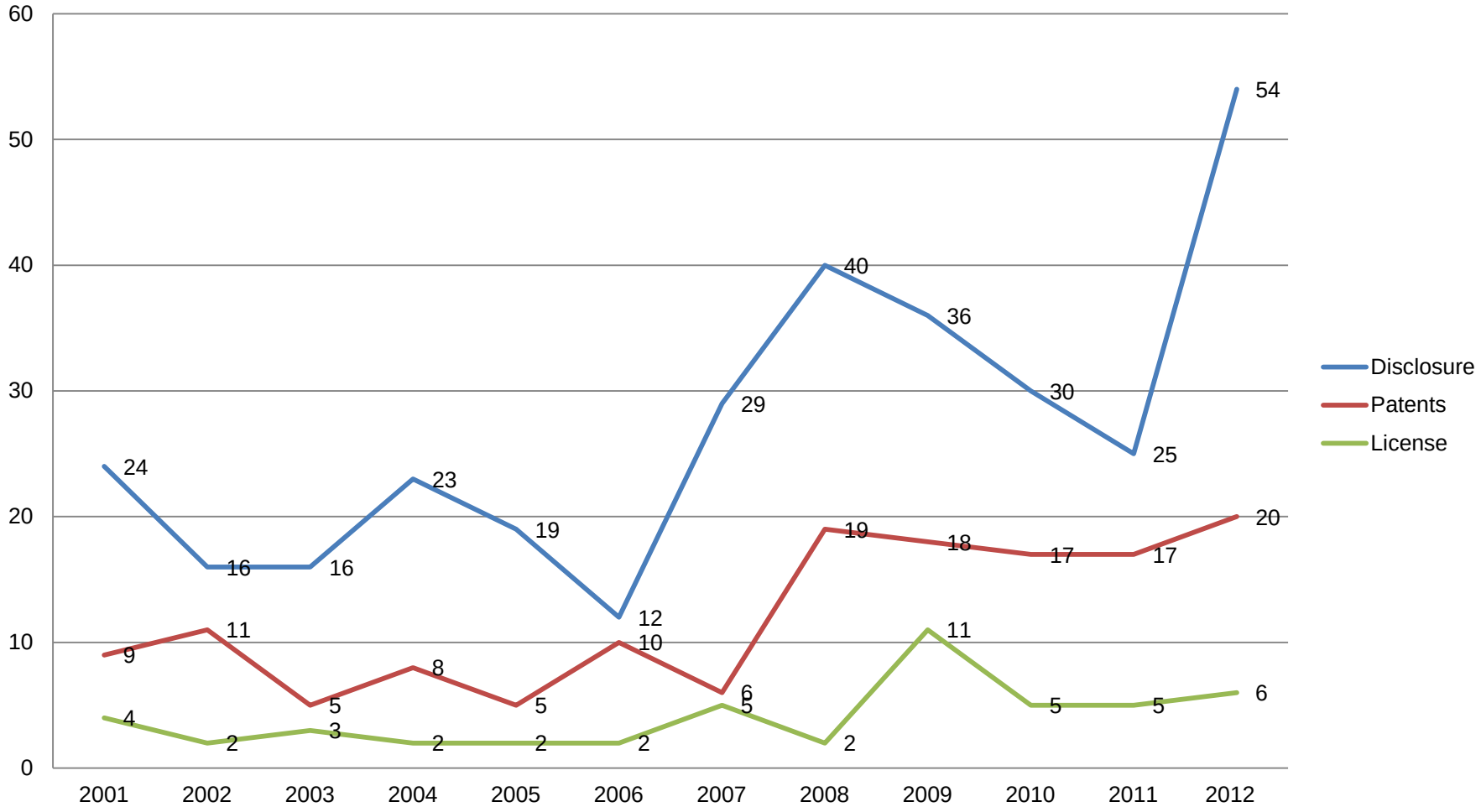
Now over 1520 Research Participants.

FY2011 Research Participants



FY2011 Institutions Represented (280)	
Companies:	79
Universities:	171
Gov. Labs:	30
States Represented:	41 + DC

Intellectual Property Metrics



Opportunities

- Thirteen agency plans submitted – NIST Reviewed
- Generally include:
  - Sec. 2 - Agency Goals and Measures
  - Section 3 – Streamlining CRADA and licensing, SBIR/STTR
  - Section 4 – Local and Regional Partnerships
- OMB/OSTP Review
  - Scoring rubric based on President's Memo
  - Comments to Agencies mid-August
  - Publication of final plans – November

Metrics

- Goal to minimize burden while providing responsive information
- Attempt to use what agencies already collect
- Look at agency plans
- Info on White House initiatives – Cross-agency Priority (CAP) Goal
- Coordinate with the National Center for Science and Engineering Statistics of the National Science Foundation on data already available – Science and Engineering Indicators
- 15 USC 3710(g)(iii) has an open invitation to propose new metrics

Metrics - New Technology and Scientific Work Products

Intellectual Property

- Retain existing statutory metrics
- New: Number of licenses granted to small businesses
  - Although 35 USC 209 (c) has a clear preference for small businesses in exclusive licensing, no efforts have been made to analyze the component of small businesses licensing Federal inventions.
- New: Number of startups created
  - For the purpose of this report, a startup company is a privately-held, for-profit company operating for less than 5 years and actively seeking financing to commercialize a federal scientific work product.
  - Anecdotes should be reported on selected startups as appropriate.
  - Recommended that agencies develop a process to track the performance of agency-assisted companies.

Metrics - New Technology and Scientific Work Products

- New: Number of patents granted categorized by selected technology areas and by agency.
  - NSF's annual publication SEI based on data obtained from the USPTO's technical review process for patent applications
  - Broken down by agency from NSF

New: Scientific Articles and Publications

- New: U.S Scientific and Engineering (S&E) articles by selected technology areas and agencies.
  - Data on the number of U.S. S&E articles by technology areas is available and published in NSF's SEI report
  - This data will be expanded to include the number of articles by technology area and by agency.
- Citations of U.S. S&E articles in U.S. patents
- By selected S&E field and Agency
- Published by NSF in their annual SEI report

Metrics - Collaborations

- Traditional output metrics to be retained are:
  - Total active CRADAs
  - New CRADAs executed in the fiscal year
  - Non-traditional CRADAs active in the fiscal year
  - Other collaborative R&D relationships active in the fiscal year (this includes Space Act agreements or other agency specific authorities, Material transfer Agreements, or other important collaborations as deemed relevant by the agency)
  - Anecdotal information on the nature, character, and successes of collaborative relationships.
- New – Small business
  - Breakout of the number of agreements and other collaborations involving small businesses.
  - The total number of small businesses involved in agreements.

Thank You

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