


Bibliometric and Impact Analyses by Librarians at the National Institute of Standards and Technology

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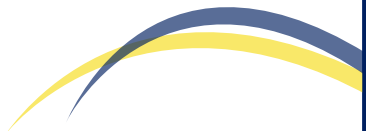
Bibliometrics by Librarians and Information Professionals
January 31, 2013


Presentation Outline



- Overview of NIST and ISO
 - Discussion of analyses conducted
 - Lab-level
 - Institution as a whole
 - ISO impact
 - How we conduct analyses – best practices
 - Analysis tools used
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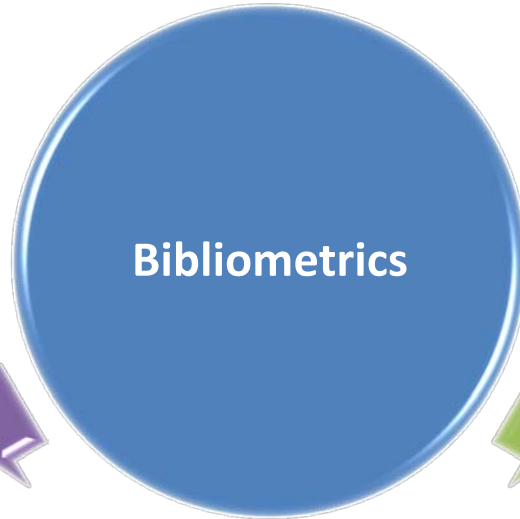
National Institute of Standards and Technology



- Federal agency made up of about 3,000 science and technology researchers
 - NIST promotes U.S. innovation and industrial competitiveness by advancing measurement science, standards, and technology
 - The Information Services Office supports and enhances research activities of the NIST scientific community through a comprehensive program of knowledge management
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**Analysis
Studies for
the Labs**



**Analysis Studies to
Assess ISO Impact**




**Analysis Studies for
the Institution as a
Whole**



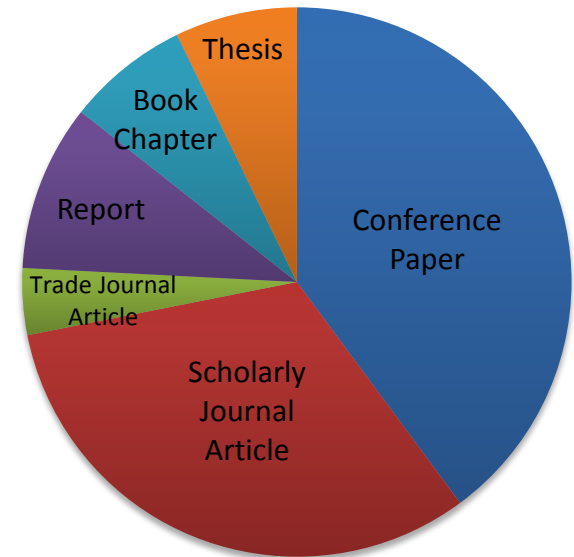


Analysis Studies for the Labs

- Calculate individual h-indexes for promotion packages
 - Quantify impact of a report on its intended audience
 - Help promote NIST conference with bibliometric analysis of past conferences
 - Analyze division output over extended time periods for group h-index, citation counts, and more
 - Recommend journal and conference venues for publishing
 - Individual publications
 - Proactively for group, program, or division
- 

Quantify Impact of a Report

- Technical Report published in 2004 targeted to practitioners in design, construction, and operation and maintenance
- Bibliometric analysis of scholarly publications and gray literature, full-text download analysis, and news, trade literature, and blog analysis



Types of Citing Publications

Quantify Impact of a Report

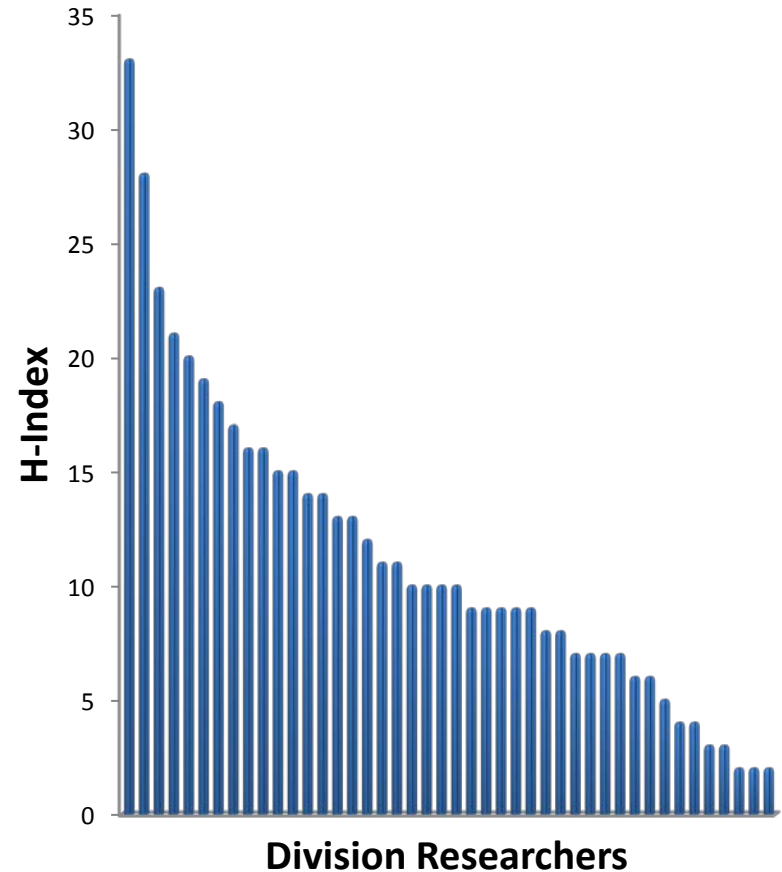
- Cited frequently in literature; downloaded even more frequently
- Impacted literature in subject fields and geography beyond intended audience
- News and trade literature show impact on practitioners in field



Locations of Citing Conference Papers

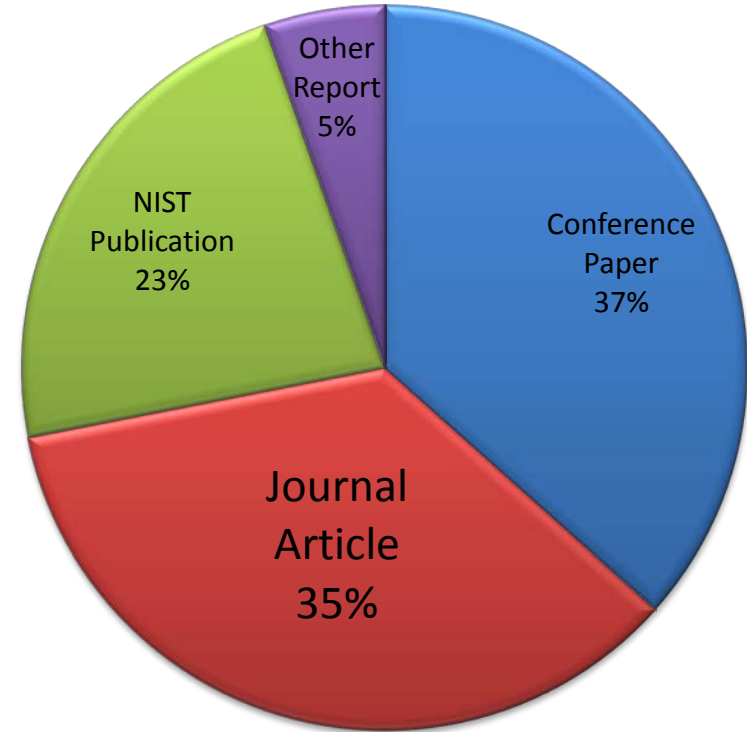
Analyze Division Outputs

- Engineering division wanted h-index values for 44 researchers
- H-index values ranged from 2 to 33



Analyze Division Outputs


- Challenge was creating a complete publications list and finding citation counts
- 65% of division publications were “gray literature”
- Determined Google Scholar was best resource



Types of Division Publications

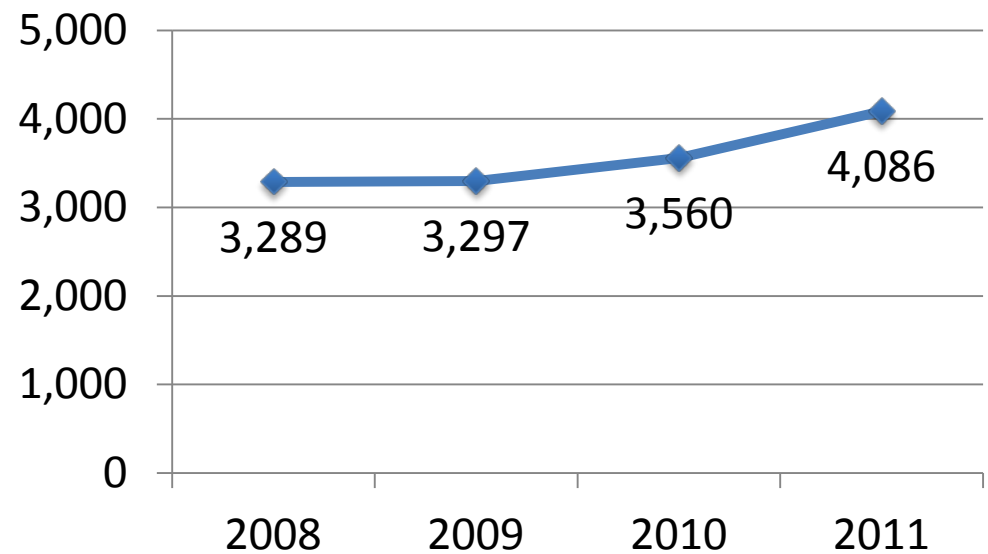
Analysis Studies for the Institution as a Whole



- Identify NIST publications in “top tier” journals using Impact Factor rankings (NIST Balanced Score Card metric)
 - Analyze outside NIST collaborators on NIST publications to assess NIST’s impact
 - Study institutions utilizing or citing NIST patents to determine impact of patents
 - Track detailed bibliometrics of NIST-published journal, *Journal of Research of the National Institute of Standards and Technology* to help guide editorial decisions
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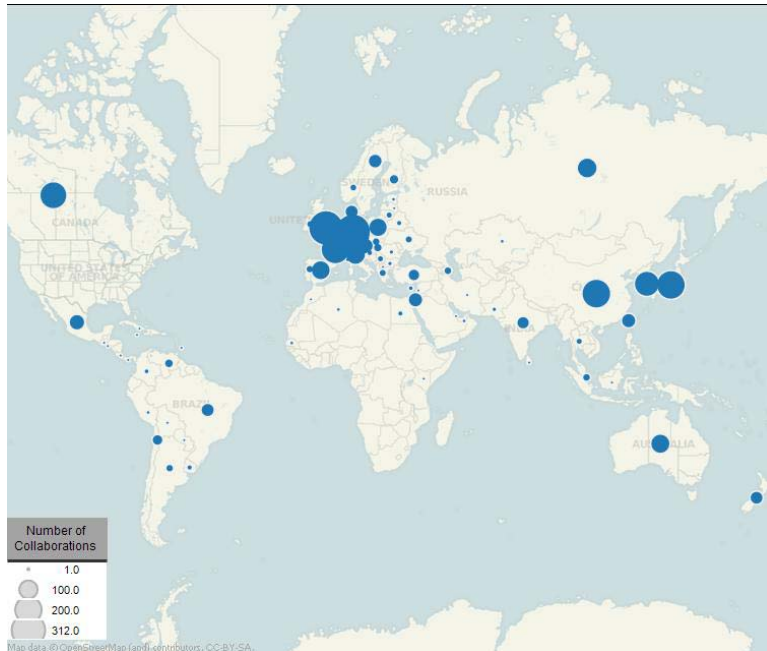
Collaborations with Outside Organizations

- Determined number of unique non-NIST co-authors and number of unique institutions collaborating with NIST
- Used by NIST Management to assess the extent of NIST's impact



Number of non-NIST Researchers Co-authoring on NIST Publications, 2008-2011

Collaborations with Outside Organizations




- Studied top countries and organizations with whom NIST collaborates
- Used data visualization tools to convey and demonstrate impact

**Locations of Authors/Institutions
Collaborating on NIST Publications, 2008-2011**

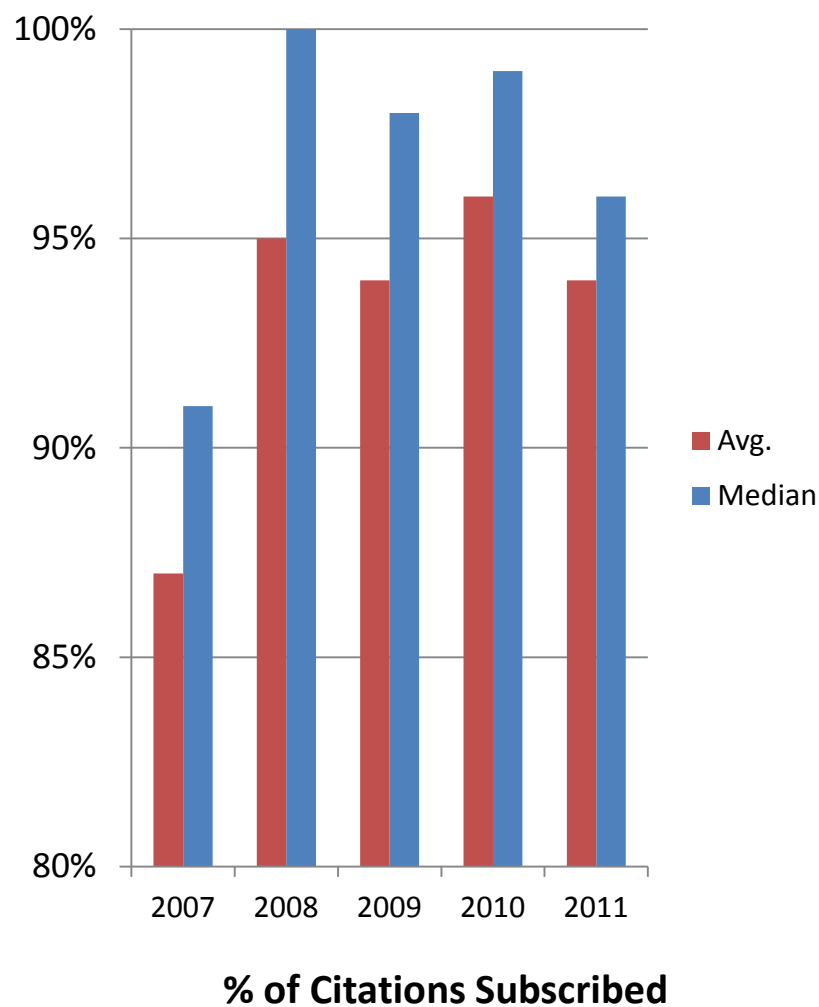


Analysis Studies to Assess ISO Impact

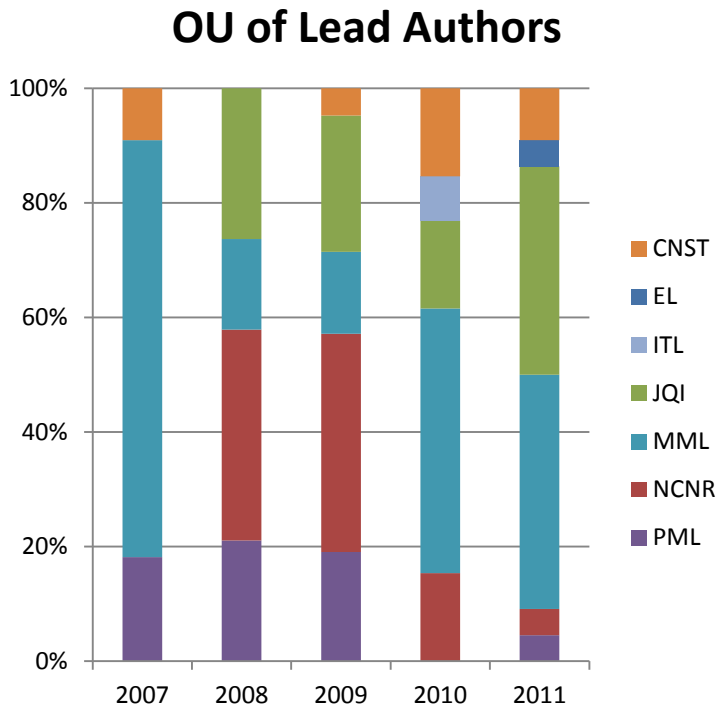
- Assess impact of journal collection
 - Perform evidence-based collection development using bibliometrics
 - Journal collection
 - Book collection
- 

Assess Impact of Journal Collection

- Annual study of 50 most-cited NIST publications from previous year
- Acquire citations of each paper
- Compare to journal collection




Assess Impact of Journal Collection



- Evaluate authorship of articles
 - Labs of lead authors
 - Labs of collaborating authors
 - Collaborating outside institutions
- Valuable to ISO, researchers, and to NIST Management
- Assists in journal collection development

How We Do Analyses: Best Practices



- Conduct extensive interview with customers
 - Use established internal review process through different stages of analysis
 - Collaborate with Lab Liaison team members with the right expertise – program analyst, metadata librarians, etc.
 - Use formalized report structure and template
 - Share with Lab Liaison team
 - Lab Liaisons meet regularly to share experiences
 - Final reports posted to SharePoint site
- 



Analysis Tools

- Web of Science
- Journal Citation Reports (JCR)
- Google Scholar
- InCites
- MS Excel and Access
- Data Visualization Tools

Note: The identification of any commercial product or trade name does not imply endorsement or recommendation by the National Institute of Standards and Technology.





Questions?



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session

Other bibliometric presentations
available at:

<http://www.nist.gov/nvl>