



W1: Information Does Exist Beyond the First Page of Your Google® Search!

American Academy of Forensic Sciences
Las Vegas, NV (February 22, 2016)



Tools for Searching and Analyzing the Forensic Science Literature

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National Institute of Standards and Technology



National Institute of Standards and Technology

- Non-regulatory 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 (ISO) supports and enhances research activities of the NIST scientific community through a comprehensive program of knowledge management

Overview

- Tools and search strategies for finding forensic publications
 - Web of Science – multidisciplinary sciences
 - SciFinder – chemistry and related areas
 - Compendex – engineering, computer science, etc.
 - LexisNexis – legal and news
- Impact assessment
- 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.

Database Search Tips – Getting Started

- Write down the **key concepts** you want to focus on
- Limit to past **5 years, English** language articles, as an initial way to focus and narrow results
- As you search, **write down** synonyms, keywords, controlled vocabulary, classification codes
- Look at the number of search results – if too many, **try to narrow**
- Use **abstract and assigned keywords** to determine potential relevance

Web of Science

- An online subscription-based resource that indexes the science and technology literature, including citations and abstracts to peer-reviewed journal articles and some conference proceedings
- Fully covers over 8,300 journals across 150 scientific disciplines; 1900 to present
- Analyze the sci-tech literature using “Analyze Results” and “Create Citation Report” features

Web of Science

- When to use
 - Good starting point for any forensics topic because of its interdisciplinary coverage
 - Covers the peer-reviewed journal literature
 - Author searches to determine credibility/expertise
 - Historical coverage back to 1900
 - Early forensics research
 - Unusual topics that might not be covered in other subject-specific databases; examples include:
 - Wildlife forensics
 - Latent prints

Web of Science – Begin Search

Basic Search

<input type="text" value="forensic*"/>	<input type="text" value="Topic"/>		
<input type="text" value="AND"/>	<input type="text" value="ballistics or firearm* or gun*"/>	<input type="text" value="Topic"/>	

[+ Add Another Field](#) | [Reset Form](#)

TIMESPAN

All years 

From  to 

- Identify key concepts – forensics AND ballistics
- Identify synonyms – firearms and guns, in addition to ballistics
- Truncate terms to pick up word variations – gun* retrieves gunshot, gunpowder, gun, guns, etc.
- Select time span – how current do you want your papers?

Web of Science – Select Spot-on Paper

Results: 480
(from Web of Science Core Collection)

You searched for: TOPIC: (forensic*) AND TOPIC: (ballistics or firearm* or gun*) ...More

Create Alert

Refine Results

Search within results for...

Web of Science Categories

- MEDICINE LEGAL (318)
- PATHOLOGY (57)
- CHEMISTRY ANALYTICAL (29)
- OPTICS (22)
- ENGINEERING ELECTRICAL ELECTRONIC (16)

more options / values... Refine

Document Types

- ARTICLE (412)

Sort by: Publication Date -- newest to oldest

Page 1 of 48

Select Page | Save to EndNote online | Add to Marked List

1. **The influence of 1.5 and 3 T magnetic resonance unit magnetic fields on the movement of steel-jacketed projectiles in ordnance gelatin**
By: Eggert, Sebastian; Kubik-Huch, Rahel A.; Lory, Martin; et al.
FORENSIC SCIENCE MEDICINE AND PATHOLOGY Volume: 11 Issue: 4 Pages: 544-551 Published: DEC 2015
Links View Abstract

2. **Fantastic plastic? Experimental evaluation of polyurethane bone substitutes as proxies for human bone in trauma simulations**
By: Smith, Martin J.; James, Stephen; Pover, Tim; et al.
LEGAL MEDICINE Volume: 17 Issue: 5 Pages: 427-435 Published: SEP 2015
Links View Abstract

3. **Variation of gunshot injury patterns in mortality associated with human rights abuses and armed conflict: an exploratory study**
By: Pablo Baraybar, Jose
SCIENCE & JUSTICE Volume: 55 Issue: 5 Pages: 355-362 Published: SEP 2015
Links View Abstract

4. **Imaging for homicide investigations**
By: Wozniak, Krzysztof; Moskala, Artur; Rzepecka-Wozniak, Ewa
RADIOLOGIA MEDICA Volume: 120 Issue: 9 Special Issue: SI Pages: 846-855 Published: SEP 2015

Analyze Results
Create Citation Report

Times Cited: 0
(from Web of Science Core Collection)
Usage Count

Times Cited: 0
(from Web of Science Core Collection)
Usage Count

Times Cited: 0
(from Web of Science Core Collection)
Usage Count

Times Cited: 0
(from Web of Science Core Collection)

Scan list of articles to find a spot-on paper

Web of Science – Expand Search

Fantastic plastic? Experimental evaluation of polyurethane bone substitutes as proxies for human bone in trauma simulations

By: Smith, MJ (Smith, Martin J.)^[1]; James, S (James, Stephen)^[2]; Pover, T (Pover, Tim)^[3]; Ball, N (Ball, Nina)^[1]; Barnetson, V (Barnetson, Victoria)^[1]; Foster, B (Foster, Bethany)^[1]; Guy, C (Guy, Carl)^[1]; Rickman, J (Rickman, John)^[1]; Walton, V (Walton, Virginia)^[1]

LEGAL MEDICINE

Volume: 17 Issue: 5 Pages: 427-435

DOI: 10.1016/j.legalmed.2015.06.007

Published: SEP 2015

[View Journal Information](#)

Abstract

Recent years have seen steady improvements in the recognition and interpretation of violence related injuries in human skeletal remains. Such work has at times benefited from the involvement of biological anthropologists in forensic casework and has often relied upon comparison of documented examples with trauma observed in skeletal remains. In cases where no such example exists investigators must turn to experimentation. The selection of experimental samples is problematic as animal proxies may be too dissimilar to humans and human cadavers may be undesirable for a raft of reasons. The current article examines a third alternative in the form of polyurethane plates and spheres marketed as viable proxies for human bone in ballistic experiments. Through subjecting these samples to a range of impacts from both modern and archaic missile weapons it was established that such material generally responds similarly to bone on a broad, macroscopic scale but when examined in closer detail exhibits a range of dissimilarities that call for caution in extrapolating such results to real bone. (C) 2015 Elsevier Ireland Ltd. All rights reserved.

Keywords

Author Keywords: Forensic Anthropology; Trauma; Gunshot; Head injury; Synthetic bone substitutes

KeyWords Plus: SKULL-BRAIN MODEL; GUNSHOT WOUNDS; BALLISTIC GELATIN; INJURIES; HEAD

Citation Network

0 Times Cited

43 Cited References

[View Related Records](#)

[View Citation Map](#)

[Create Citation Alert](#)

(data from Web of Science™ Core Co

All Times Cited Counts

0 in All Databases

0 in Web of Science Core Collec

0 in BIOSIS Citation Index

0 in Chinese Science Citation Database

0 in Data Citation Index

0 in Russian Science Citation In

0 in SciELO Citation Index

Usage Count

Last 180 Days: 7

Since 2013: 7

- Scan article record for other keywords and search terms
- Check the paper's references and "Related Records"

SciFinder

- A research discovery application that provides integrated access to references, substances, and reactions in chemistry and related sciences
 - Search for references by research topic, author, company, document identifier, journal, or patent
 - Search for chemical substances by chemical structure, molecular formula, property, or substance identifier
- Requires a username and password
- SciFinder training page offers tutorials and other materials

SciFinder

- When to use SciFinder
 - Chemistry-related forensics topics
 - Coverage beyond peer-reviewed journal articles
 - Conference papers
 - Patent literature
 - Chemical compound information
- Topic areas
 - Forensic toxicology
 - Forensic chemistry
 - Forensic medicine

SciFinder – Welcome Screen



Sign In

Username

Password

Remember me
(Do not use on a shared computer)

Sign In

[Forgot Username](#) or [Password?](#)

Your SciFinder username and password are assigned to you alone and may not be shared with anyone else.

New to SciFinder?

[Learn more about gaining access to SciFinder.](#)



News & Updates

Welcome to SciFinder

CHEMCATS Chemical Supplier Program
Chemical supplier? Be part of the world's preferred chemistry research solution. Learn more [now](#).

Introducing the PatentPak Interactive Patent Chemistry Viewer

The new [PatentPak interactive patent chemistry viewer](#) significantly reduces the time spent locating the important chemistry in a patent by using CAS scientists' direct links to key substances in the source patent.

New Commercial Source Logos

You may notice supplier logos in [Commercial Sources](#) listings.

Have you visited the SciFinder training page lately?

Our [new materials and updated tutorials](#) will help you become a SciFinder expert. See our new recorded e-seminars on polymer and patent searching (see [Special Topics](#)) and updated substance, reaction and reference searching tutorials (now also in Spanish).

- Requires a username and password
- SciFinder training page offers tutorials and other materials

SciFinder – Natural Language Search

The screenshot displays the SciFinder web interface. At the top, there are navigation tabs: 'Explore' (with a dropdown arrow), 'Saved Searches' (with a dropdown arrow), and 'SciPlanner'. Below these, the current search topic is identified as 'Research Topic "the forensics of human identif..."'. On the left side, there are two main categories: 'REFERENCES' and 'SUBSTANCES'. Under 'REFERENCES', several search criteria are listed: 'Research Topic', 'Author Name', 'Company Name', 'Document Identifier', 'Journal', 'Patent', and 'Tags'. Under 'SUBSTANCES', the criteria are 'Chemical Structure', 'Markush', 'Molecular Formula', and 'Property'. The main content area on the right is titled 'REFERENCES: RESEARCH TOPIC' and features a search input field containing the text 'the forensics of human identification'. A red arrow points to this input field. Below the input field, there are 'Examples:' of search results: 'The effect of antibiotic residues on dairy products' and 'Photocyanation of aromatic compounds'. A blue 'Search' button is positioned below the examples, and an 'Advanced Search' link is located at the bottom of the search area.

- Only option is to use “natural language” to conduct a search
- Complex searches are difficult to perform in SciFinder

SciFinder – Select Concept Relationship

Select All Deselect All

1 of 5 Research Topic Candidates Selected

References

<input type="checkbox"/>	1 reference was found containing "the forensics of human identification" as entered.	1
<input checked="" type="checkbox"/>	1398 references were found containing the two concepts "forensics" and "human identification" closely associated with one another.	1398
<input type="checkbox"/>	3722 references were found where the two concepts "forensics" and "human identification" were present anywhere in the reference.	3722
<input type="checkbox"/>	98128 references were found containing the concept "forensics".	98128
<input type="checkbox"/>	589974 references were found containing the concept "human identification".	589974

Get References

- Exact phrase is too specific – yields only one record
- Two concepts present anywhere in the reference is too broad and not always on target
- Two concepts “closely associated with one another” is generally the best answer set

SciFinder – Analyze and Refine Results

Research Topic "the forensics of human identif..." > references (1398)

REFERENCES ?

Get Substances Get Reactions Get Related Citations Tools ▾

Analyze Refine Categorize

Sort by: Accession Number ▾ ↓

0 of 1398 References Selected

Analyze by: ?
Author Name ▾

Budowle Bruce	28
Schneider P M	18
Carracedo A	17
Morling N	14
Ivanov P L	12
Shewale Jaiprakash G	11
Sakurada Koichi	10

1. **Forensic performance of Investigator DIPplex indels genotyping kit in native, immigrant, and admixed popul**
Quick View Other Sources
By Hefke, Gwynneth; Davison, Sean; D'Amato, Maria Eugenia
From Electrophoresis (2015), 36(24), 3018-3025. | Language: English, Database: CAPLUS

The utilization of binary markers in **human individual identification** is gaining ground in **forensic** genetics. We ai indel kit Investigator DIPplex (Qiagen) in 512 individuals from Afrikaner, Indian, admixed Cape Colored, and the nati and evaluated **forensic** and population genetics parameters for their **forensic** application in South Africa. The **forensic** parameters in South Africa are similar to other published data, with lower diversity values for the na expectations were obsd. in HLD97 in Indians, Admixed and Bantus, along with 6.83% null homozygotes in the Bantu p showed a previously reported transition G>A in rs17245568. Strong population structure was detected with Fst, AM method in STRUCTURE. Therefore we evaluated the efficiency of individual assignments to population groups usir STRUCTURE and the Bayesian classification algorithm in Snipper App Suite. Both methods showed low cross-assigr Afrikaners or Indians. The differentiation between populations seems to be driven by four loci under pos. selectio recommendations for the application of this kit in SA.

2. **Advancing forensic RNA typing: On non-target secretions, a nasal mucosa marker, a differential co-extractio RNA profiling**

- Analyze your search by Author, Company, Journal, etc.
- Refine by Research Topic, Author, Company Name, etc.

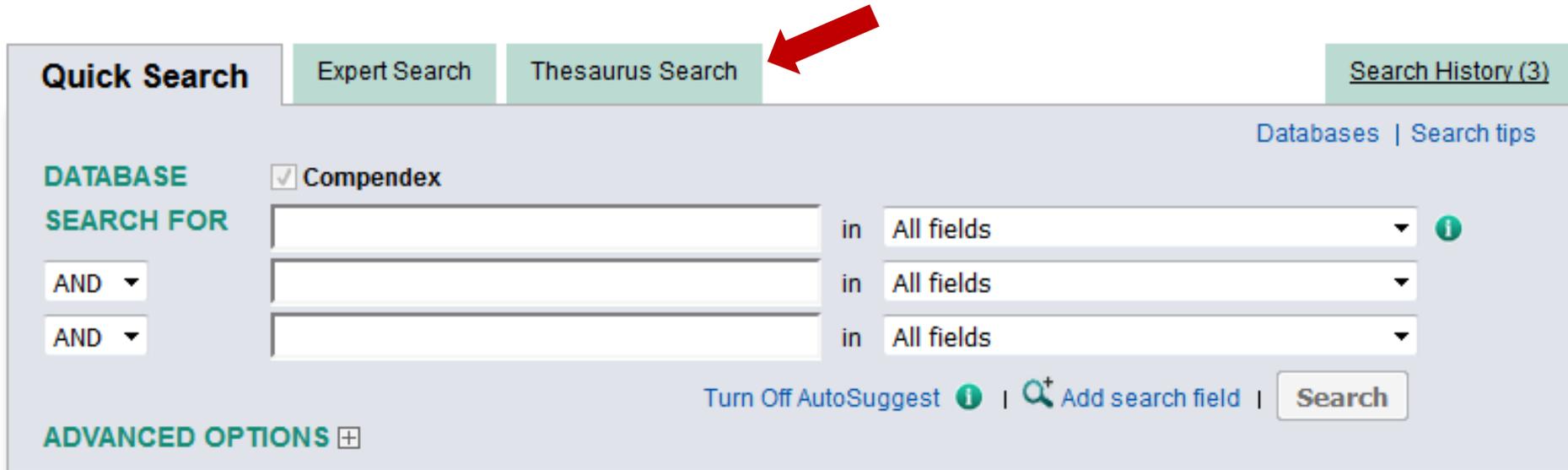
Compendex

- Indexes the engineering literature
- Strong in the applied sciences
- Scope
 - Broad literature database
 - 17+ million papers
 - 80,000 conference proceedings
 - 3,800 journals
- Controlled vocabulary enables you to find the most relevant articles with few false hits

Compendex

- When to use Compendex
 - Computer forensics and related topics
 - Coverage beyond the peer-reviewed journal literature
 - Conference papers
 - Technical reports
- Topic areas
 - Computer forensics
 - Computer crime
 - Digital evidence

Compendex – Use Thesaurus



The screenshot shows the Compendex search interface. At the top, there are four tabs: "Quick Search", "Expert Search", "Thesaurus Search", and "Search History (3)". A red arrow points to the "Thesaurus Search" tab. Below the tabs, there are links for "Databases" and "Search tips". The main search area is titled "DATABASE" and "SEARCH FOR". It includes a checkbox for "Compendex" which is checked. There are three search fields, each with a dropdown menu set to "All fields" and a search button. The search button is labeled "Search". There are also links for "Turn Off AutoSuggest" and "Add search field". At the bottom left, there is a link for "ADVANCED OPTIONS" with a plus sign icon.

- The Thesaurus Search helps to eliminate false hits since each article is indexed using a term or terms from a controlled vocabulary list
- Not all databases/resources have the valuable thesaurus search feature

Compendex – Select Thesaurus Terms

The screenshot displays the 'Thesaurus Search' tab of the Compendex interface. It shows the search process for the term 'forensics' in the 'Compendex' database. The search mode is set to 'Search'. Three terms are listed as results: 'Computer crime', 'Computer forensics', and 'Security of data'. The 'Computer forensics' term is highlighted with a red oval.

Quick Search **Expert Search** **Thesaurus Search**

DATABASE Compendex

SEARCH FOR forensics

Search Exact Term Browse

SEARCH
3 matching terms found for: forensics

Term
<input type="checkbox"/> Computer crime
<input checked="" type="checkbox"/> Computer forensics
<input type="checkbox"/> Security of data

Thesaurus Search results for forensics are limited to computer and digital/data related papers

Compendex – Search Results

Thesaurus Search

440 articles found in Compendex for 1884-2016: ((({Computer forensics} WN CV)))

[New Search](#) [Edit](#) [Save Search](#) [Create Alert](#) [RSS feed](#) [Search history](#)

Refine results

[Limit to](#) [Exclude](#)

Add a term

Author

Author affiliation

Controlled vocabulary

Classification code

Country

Document type

Language

Year

Source title

- Digital Investigation (28)
- Imp Advances In Information And Communication Technology (21)
- Lecture Notes Of The Institute For Computer Sciences, (17)

Display: 25 results per page

Go to page:

Select: Selected Records (0) | Remove all Selected Records

[Email](#) [Print](#) [Download](#)

1. **A cyber forensics needs analysis survey: Revisiting the domain's needs a decade later**

Harichandran, Vikram S. (Cyber Forensics Research and Education Group (UNHcFREG), Tagliatela College of Engineering, University of New Haven United States); Breiting, Frank; Baggili, Ibrahim; Marrington, Andrew **Source:** *Computers and Security*, v 57, p 1-13, March 2016

Database: Compendex

[Detailed](#) | [Show preview](#) | [Full Text](#)

2. **Mobile Forensic Investigation (MFI) life cycle process for digital data discovery (DDD)**

Rajendran, S. (National Institute of Technology, Tiruchirappalli, India); Gopalan, N.P. **Source:** *Advances in Intelligent Systems and Computing*, v 398, p 1, 2016

Database: Compendex

[Detailed](#) | [Show preview](#) | [Full Text](#)

3. **An approach to digital evidence collection for successful forensic application: An investigation of blackmail case**

Hajdarevic, Kemal (Faculty of Electrical Engineering, University of Sarajevo, Sarajevo, Bosnia and Herzegovina); Dzaltur, Vahidin **Source:** *2015 38th International Convention on Information and Communication Technology, Electronics and Microelectronics, MIPRO 2015 - Proceedings*, p 1387-1392, July 15, 2015

Database: Compendex

[Detailed](#) | [Show preview](#) | [Full Text](#)

- Results can be refined using the filters on the left
- Many filters are available – Author, Author Affiliation, etc.
- Note the source title “Digital Investigation,” which is the source with the most papers on topic

LexisNexis

- Use Nexis to search across over 26,000 current and archived sources, including trusted news, company profiles, public records, industry information and social media content
- Lexis content includes Federal and State Cases, Statutes, Codes, and Regulations; Legislative Materials; Court Dockets; Court Materials; and more
- Subscription based – check with your library for access

LexisNexis

- When to use LexisNexis
 - Forensics topics related to industry/business
 - Litigation involving forensics
 - Coverage of the non-technical literature
 - Legal literature
 - News sources
 - Patent literature
- Topic areas
 - Forensics experts and litigation
 - Global forensic technologies market
 - Cybercrime

Nexis – Begin Search

Related Searches

- » **Power Search**
- » Easy Search™

My Favorite Search Forms ▾

- Power Search
- News
- Company Profiles
- Market Insight
- Biographies

Useful Links

- 🔗 New sources
- 🔗 Searchable Directory of Online Sources
- Industry Classifications look up & Currency Converter
- Help me building a search

View tutorials

Power Search

Terms and Connectors Natural Language 

handwriting forensics

Search

Tips for using

Required item

All available dates ▾

US Publications ▾ 

+ More sources

+ Add Index Terms

- Group duplicates
- Exclude Newswires
- Exclude Non-business news (obituaries, sports, reports, etc.)
- Exclude Websites
- Exclude documents with fewer than 500 words

- Use the Natural Language search option to type in key concepts
- Various filters help to refine search

Nexis – Use Filters to Narrow Search

The screenshot displays the Nexis search interface. On the left, under 'Result Groups', there are several filter categories: Source Type (Newspapers, Newswires & Press Releases, News, News Transcripts, Legal News, Magazines & Journals, Web-based Publications, Industry Trade Press, Newsletters, Blogs), Source, Subject, Industry, Company, Geography, Language, and People. A red arrow points to the 'Subject' filter. The main search area includes options for 'Show' (Expanded List), 'Sort' (Relevance), 'View Tagged', 'Add to', 'Group Duplicates' (Off), and 'Select Language'. The search results are displayed in a list format, with the first result titled 'She's watching your p's and q's; Fascination with handwriting draws woman into document investigation'.

- Use filters on the left to refine search results
- Filter by Source Type, Subject, Industry, Company, etc.

Nexis – Limit by Subject

Result Groups



View Multiple Groups ▾

All Results (997)

Source Type

Source

Subject

Crime, Law Enforcement & Corrections (8

Law Enforcement (775)

Forensics (716)

Law & Legal System (633)

Trends & Events (432)

Evidence (415)

Criminal Offenses (388)

Investigations (361)

Government & Public Administration (335)

Society, Social Assistance & Lifestyle (32

Trial & Procedure (319)

Government Bodies & Offices (309)

Crimes Against Persons (270)

Criminal Law (264)

Labor & Employment (225)

Homicide (218)

Testimony (206)

Murder (199)

Hide

Show Expanded List

Sort Relevance

View Tagged

Add to

Group

Select Language

Disclaimer

Powered by Google Translate

Results

1. She's watching your p's and q's; Fascination with handwriting
The Ellwood City Ledger (Pennsylvania), April 12, 2011
... Wayne Township, is a handwriting analyst.

... in the International School of Forensic Document Examination
handwriting analysis are two very different things. Handwriting
... person's personality through his handwriting. Forensic
... Currently, McShea is a forensic document examiner
... N. Y., a forensic document examiner and considered
... court-qualified for forensic analysis. I can do the
... My experience in handwriting analysis has given me
... made me a better forensic analyst." McShea also discussed
... traits revealed in handwriting, she said. Handwriting
... school, but gradually our handwriting evolves in a
... for each person. "Handwriting analysis is not magic,
... but it does." From analyzing handwriting, McShea can
... legal to use this tool because handwriting analysis is
... investigator, watches above as forensic document
... reading in a handwriting sample.
FORENSICS; EVIDENCE; ...

2. Experts use different approaches to analyze handwriting
The Associated Press State & Local Wire, State and Regional
If you believe graphologists, handwriting can provide insight
... character traits in handwriting samples is no more

Nexis – Search Results

The Ellwood City Ledger (Pennsylvania)

April 12, 2011 Tuesday

She's watching your p's and q's;
Fascination with **handwriting** draws woman into document investigation

BYLINE: Louise Carroll, LEDGER CORRESPONDENT

SECTION: NEWS; Pg. 1

LENGTH: 681 words

The size of the letters. The slant of the line. How and where the "t's" are crossed and the "i's" are dotted. How much pressure is applied to the stroke.

The truth, Therese McShea said, is in the details.

McShea, 46, of Wayne Township, is a **handwriting** analyst.

She first became interested 10 years ago when her mother bought her a couple of books on the subject.

From there, it's become a consuming interest. She's taken courses and seminars to learn her trade. For more than a year, she's been enrolled in the International Document Examination to study **forensic** analysis.

But **handwriting** analysis and **forensic handwriting** analysis are two very different things.

Handwriting analysis, also known as graphology, is a method of identifying, evaluating and understanding a person's personality through his **handwriting**.

Forensic handwriting analysis answers questions about a disputed document, such as authenticity of a signature.

Full-text documents

Lessons Learned

- Forensic science crosses many disciplines from legal medicine and chemistry to computer science, food science technology, and materials science.
- It is virtually impossible to identify each and every paper on a forensics topic due to the interdisciplinary nature of forensics.
- There is no single resource that captures all the forensic literature, and most resources have only fair to good coverage of forensics.

Web of Science Search String

WC="Medicine, Legal"

AND

ORGANIZATION-ENHANCED: (National Institute of Standards & Technology (NIST) - USA)

OR

TOPIC (Forensic* OR "legal medicine" OR medicolegal OR autopsy OR "blood stains" OR dermatoglyphics OR "DNA fingerprint*" OR exhumation OR ballistics OR "computer crime" OR "electronic crime" OR "electronic evidence" OR "cyber crime" OR "digital investigat*" OR "digital evidence" OR "intrusion analys*" OR "dna typing" OR "dna profiling") AND ORGANIZATION-ENHANCED: (National Institute of Standards & Technology (NIST) - USA)

Impact Assessment

- What is the impact of your work or research?
- How can assessing impact help?
 - Helps obtain funding
 - Demonstrates the value of your work to your stakeholders
- When would it be useful?
 - Investigating new research areas
 - Defending your research group in times of budget cuts
- Ask your librarian to help!

Impact Assessment in the NIST Information Services Office

- What types of analyses do we do?
 - Citation analysis and publication assessment
 - Market research and analysis
 - Research impact measurement
 - Publication venue analysis
- Examples of the analyses we do related to forensics
 - Information on databases, books, and research groups in the area of forensic identification of fibers
 - What is the impact of NIST's forensic publications?

Forensics@NIST 2014

Assessing the Impact of the National Institute of Standards and Technology's Forensic Publications and Collaborations

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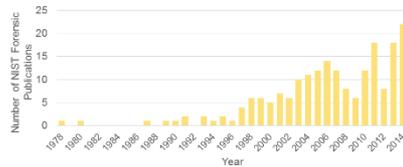
Katie Rapp
kathleen.rapp@nist.gov

Introduction

The Information Services Office (ISO) at NIST analyzed the impact of NIST's peer-reviewed forensic journal literature through citation analysis and network visualizations. ISO's study informs the forensic research community where NIST has had some of the greatest impact.

Overview of NIST Research Publications

This analysis, based on a *Web of Science (WoS)* search, yielded 198 NIST forensic publications in 24 different research areas and 51 journal venues since 1978.



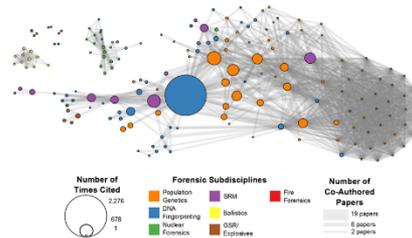
Methodology

A WoS database search identified NIST forensic publications for the years 1978-2014. ISO's complex WoS search strategy used a variety of forensics-related keywords and included all NIST-authored articles in the WoS subject category Legal Medicine. The search included publications in the peer-reviewed literature (journals) while excluding most conference proceedings papers.

The network graph was created using Sci² to extract the co-author network from the WoS search results. The network was then visualized using Gephi. Subdisciplines for the co-author network were assigned manually by studying the underlying papers for each author and identifying their predominant research field.

Collaborations within Forensic Disciplines

This co-author network shows the collaboration between authors who have published two or more papers together and their research fields. Each node represents an author, NIST or non-NIST, who has co-authored with a NIST scientist, and is sized to represent the number of citations the author has received. The largest node represents John Butler from NIST with 60 authored works and 2,276 citations.



The colors represent different forensic subdisciplines. The most prevalent subdisciplines are population genetics (43%) and DNA fingerprinting (26%). This diagram shows the close relationship and frequent collaborations of authors in the fields of population genetics, DNA fingerprinting, and Standard Reference Materials (SRM). Authors in ballistics, nuclear forensics, and gunshot residue (GSR)/explosives co-author within their own field.

Publication Impacts

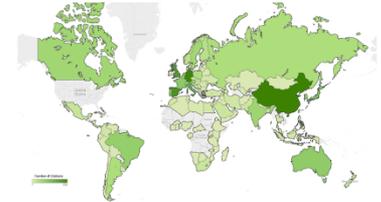
NIST forensic publications have been cited 3,751 times since 1978. The most highly cited paper is "The development of reduced sized STR amplicons as tools for analysis of degraded DNA" by John M. Butler, Yin Shen, and Bruce R. McCord in 2003.

Journal Article Title	Times Cited
The development of reduced size STR amplicons as tools for analysis of degraded DNA, <i>Journal of Forensic Sciences</i> (2003)	189
DNA Commission of the International Society of Forensic Genetics (ISFG). An update of the recommendations on the use of Y-STRs in forensic analysis, <i>Forensic Science International</i> (2006)	176
Genetics and genomics of core short tandem repeat loci used in human identity testing, <i>Journal of Forensic Sciences</i> (2006)	169
Publication of population data for forensic purposes, <i>Forensic Science International: Genetics</i> (2010)	151
Characterization of new MiniSTR loci to aid analysis of degraded DNA, <i>Journal of Forensic Sciences</i> (2005)	127
A novel multiplex for simultaneous amplification of 20 Y chromosome STR markers, <i>Forensic Science International</i> (2002)	112
Forensic value of 14 novel STRs on the human Y chromosome, <i>Forensic Science International</i> (2002)	90
STRBase: a short tandem repeat DNA database for the human identity testing community, <i>Nucleic Acids Research</i> (2001)	86
A multiplex allele-specific primer extension assay for forensically informative SNPs distributed throughout the mitochondrial genome, <i>International Journal of Legal Medicine</i> (2004)	83
A sensitive denaturing gradient-gel electrophoresis assay reveals a high frequency of heteroplasmy in hypervariable region 1 of the human mtDNA control region, <i>American Journal of Human Genetics</i> (2000)	80

NIST forensic publications are cited by authors from 2,496 institutions and in 632 unique journals. They are cited most often by articles in *Forensic Science International: Genetics* with 408 citations and *Journal of Forensic Sciences* with 170 citations.

International Impacts

NIST forensic publications have been cited by authors from 113 different countries. They are cited most frequently by authors in China (224 papers), Germany (218 papers), and the United Kingdom (215 papers).



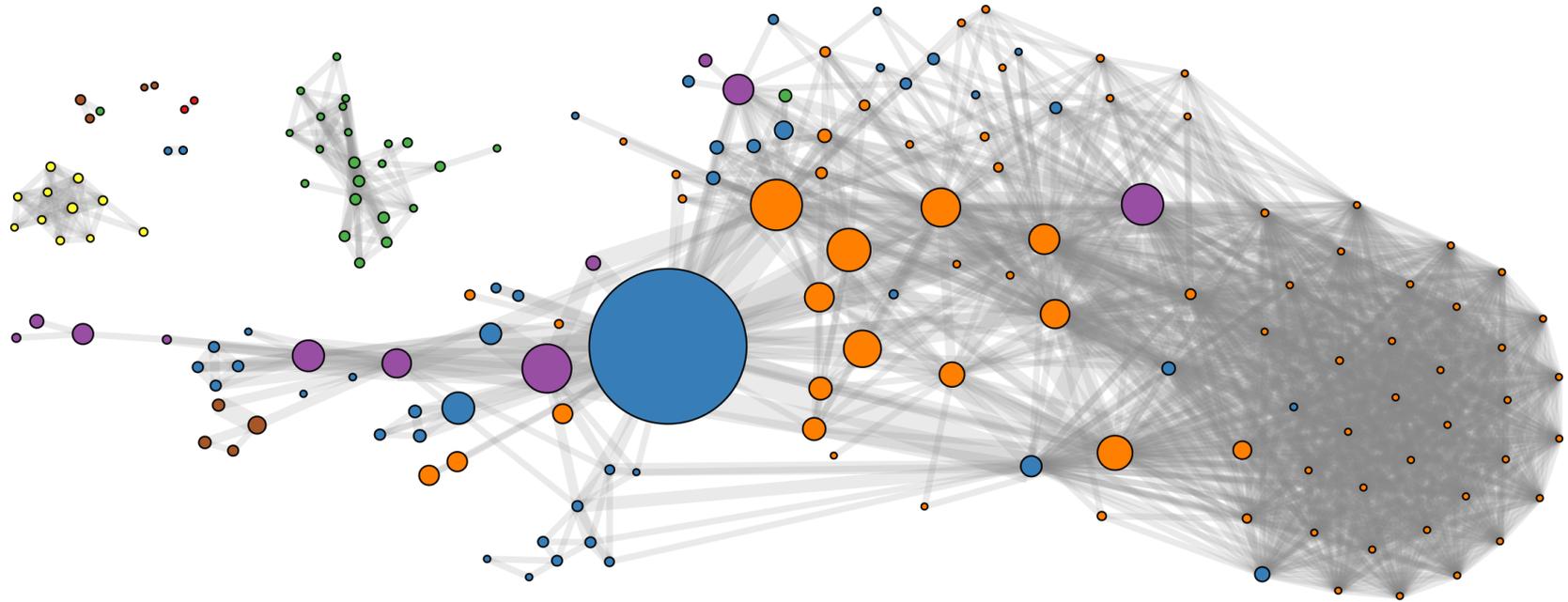
Conclusions and Recommendations

Forensics at NIST crosses many disciplines from legal medicine and chemistry to computer science and food science technology. This research and the resulting publications by NIST scientists have proven impact on the forensic research community as demonstrated through ISO's study and findings.

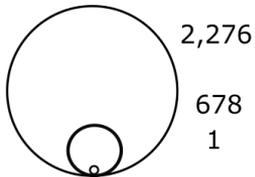
While this study captured the majority of NIST's forensics-related journal articles, it was not possible to identify each and every NIST paper due to the interdisciplinary nature of forensics.

In future studies ISO will further develop and refine its search strategy for identifying NIST forensic publications to broaden the scope of the search while carefully maintaining its accuracy. ISO also intends to study the forensic field as a whole to identify trends that will assist NIST in identifying future areas of research.

Impact Assessment



Number of Times Cited



Forensic Subdisciplines

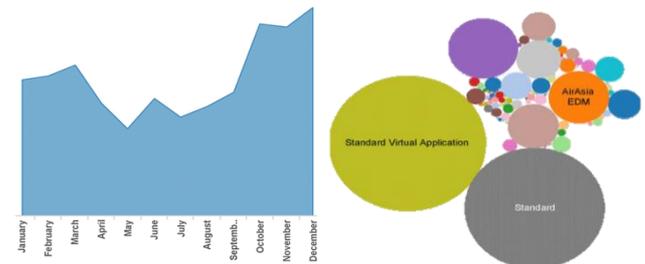
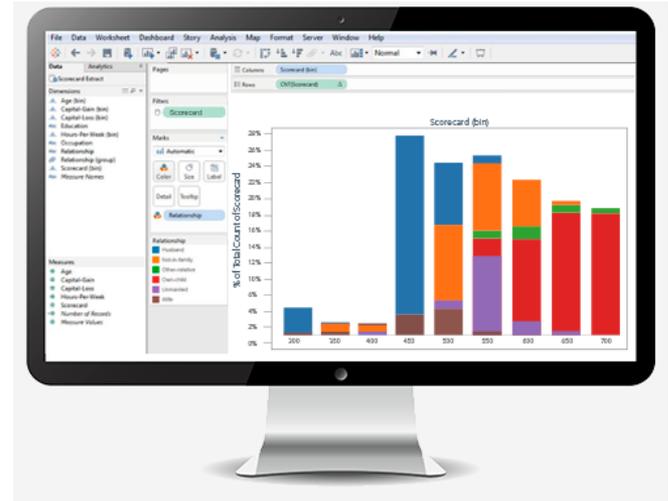


Number of Co-Authored Papers



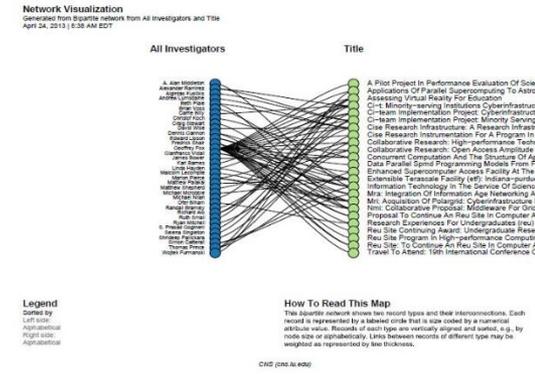
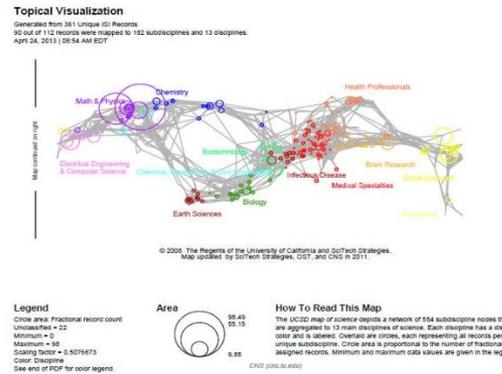
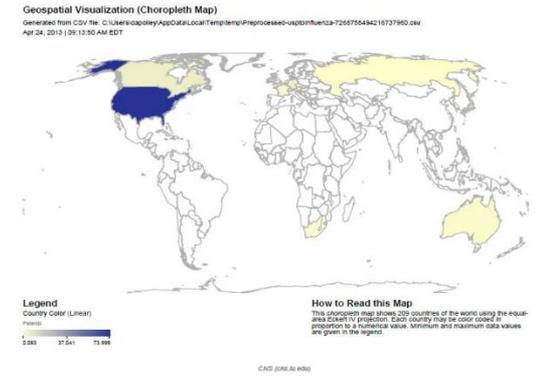
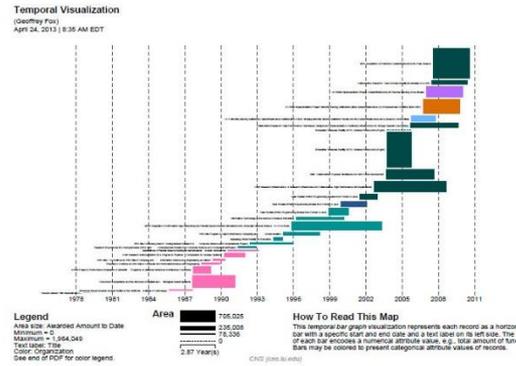
Tableau

- Tableau Public – free version
- Drag and drop interface is intuitive and enables quick and iterative data manipulation and visualization
- Geospatial maps, heat maps, area graphs, bubble graphs, and dashboards



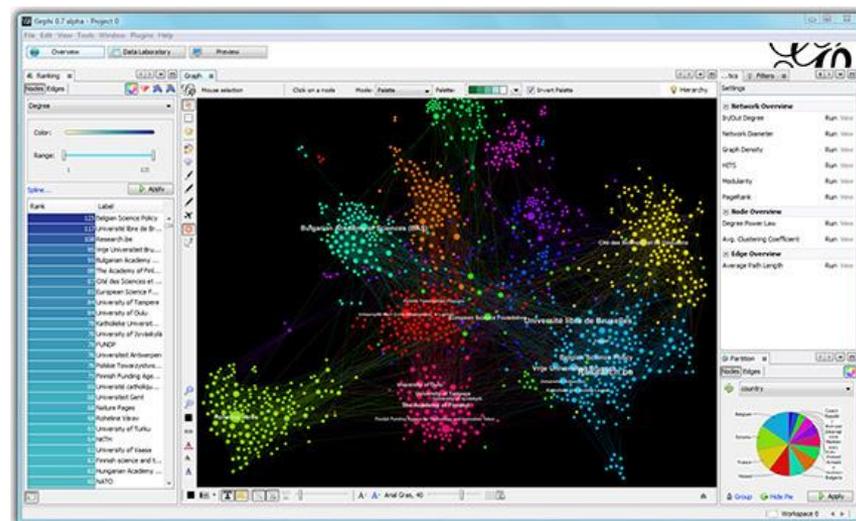
Science of Science Tool (Sci²)

- Created at Indiana University
- Temporal, geospatial, topical, and network analysis and visualization of scholarly datasets
- Data prep tool for:
 - Web of Science
 - Google Scholar



Gephi

- Interactive visualization and exploration platform for networks and complex systems, dynamic and hierarchical graphs
- Helps show patterns and isolate outliers



Questions?



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