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### Introduction to Literature Mapping Tools

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# Introduction to Literature Mapping Tools

Daniel G. Kipnis, MSI, Rowan University  
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## Who I am

### **Daniel G. Kipnis, MSI**

- *Life Sciences Librarian, Rowan University, Glassboro, New Jersey*





## Disclosures

- This is not the end all and be all for searching published articles
- It is another option to help researchers save time and harness the power of AI to help with their research
- All these tools are under continuous development
- I am not promoting a specific tool
- Use them in the spirit of exploration and experimentation
- By the end of my presentation the information I present may have already been updated and evolved
- When in doubt seek help from a librarian or professor



## Agenda

- What is literature mapping?
- Tools
  - [Semantic Scholar](#)
  - [Elicit](#)
  - [Connected Papers](#)
  - [Inciteful](#)
  - [Research Rabbit](#)



## What is Literature Mapping?

- Graphical interfaces to create a geographical metaphor of a research topic
- Helps to manage the deluge of information that is available
- 2 methods:
  - Map ideas or descriptors from keywords in research topics
  - Author mapping to identify key experts in field



## Benefits of Literature Mapping?

- Graphs for visual learners
- Track recent publications
- Create a bibliography on your topic
- Discover gaps in your research



**Semantic Scholar** <https://www.semanticscholar.org/>

- Indexes all fields of science including PubMed, arXiv and Springer Nature
- 200 million + papers covering all disciplines
- Launched 2015
- Creation of Allen Institute of AI (Paul Allen, Microsoft and Dr. Etzioni, AI researcher)





**Semantic Scholar** <https://www.semanticscholar.org/>

- Focus in on journal articles
- No Boolean operators supported (AND, OR, NOT)
- Quoted text is supported
- Do not expand keywords or abbreviations. Be comprehensive and search full keywords



# Semantic Scholar <https://www.semanticscholar.org/>



pirate websites

About 406,000 results for "pirate websites"

Fields of Study ▾ Date Range ▾ Has PDF Author ▾ Journals & Conferences ▾

Sort by Relevance ▾ ☰ ☰

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[D. Kipnis](#) · Education  
Abstract: Millions of users access this study was...  
[View on Taylor & Francis](#)

## UK: Blocking Pirate Websites

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### Fields of Study

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- Medicine
- Business
- Education
- Economics
- Political Science
- Psychology
- Art
- History
- Biology

## Librarians and Professors on Teaching and Using Pirate Websites

[Journal of Librarianship](#) · [5 August 2022](#)  
downloaded per month using pirate websites. The purpose of this study was to explore the knowledge of academic librarians on their knowledge, usage and... [Expand](#)  
[Cite](#)

## Third Party Copyright Infringement

[Journal of Intellectual Property Law](#) · [1 February 2022](#)

## Pirate Websites and Hacking Affect ILL

[Journal of Interlibrary Loan, document Delivery...](#) · [20 October 2019](#)  
of life at this point. Regardless of how we personally feel about this issue, the fact that students, researchers, and patrons are turning away from the...

## Öffentliche Wiedergabe urheberrechtlich geschützter Werke durch BitTorrent-Portale - EuGH bestätigt die Zulässigkeit von Internetsperren gegen Websites wie The Pirate Bay

[Alexander Koukal](#) · [Art](#) · [2017](#)  
Sinn und Tragweite des Begriffs der „öffentlichen Wiedergabe“ sind mit Blick auf die Ziele, die mit der Richtlinie 2001/29/EG verfolgt werden, und den Zusammenhang, in den sich die auszulegende... [Expand](#)  
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DOI: 10.1126/science.352.6285.508 • Corpus ID: 206616723

## Who's downloading pirated papers? Everyone.

[J. Bohannon](#) Published 29 April 2016 • Education • Science

In increasing numbers, researchers around the world are turning to Sci-Hub, the controversial website that hosts 50 million pirated papers and counting. Now, with server log data from Alexandra Elbakyan, the neuroscientist who created Sci-Hub in 2011 as a 22-year-old graduate student in Kazakhstan, Science addresses some basic questions: Who are Sci-Hub9s users, where are they, and what are they reading? The Sci-Hub data provide the first detailed view of what is becoming the world9s de facto... Expand

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#### [Walking the plank: how scholarly piracy affects publishers, libraries and their users](#)

[Elizabeth A. Yates](#) • Computer Science • 2017

TLDR A case study involving a student at Brock University is used to highlight significant challenges facing libraries and the rights of their users in the current environment of piracy-wary academic publishers. Expand

[Save](#) [Alert](#)

#### [Sci-Hub and LibGen: what if... why not?](#)

[L. Houle](#) • Computer Science • 2017

TLDR Preliminary results of a one year study with Sci-Hub, LibGen and of Google Scholar where 2,750 random samples (peer reviewed journal articles) coming from fifty-five different databases covering all disciplines were tested against those platforms suggest that the content is there in Sci-hub and LibGen. Expand



Elicit details <https://elicit.org/>

- Using Semantic Scholar API
- 175 million papers
- Type your research question into search
- Built using Generative Pre-trained Transformer, 3rd generation (GPT-3) openAI
- Corpus of Wikipedia, Books, Common Crawl and WebText
- Returns top 8 results
- Can filter by type of papers (reviews etc.)
- Can export out results to citation manager



does cold therapy help with muscle soreness

### Add information about all papers

Takeaway from abstract ✓

Intervention ✓

Outcomes measured

Number of participants

Population summary ✓

Search for paper information

What was the...

Has PDF Filter Sort by Export as

Paper title	Takeaway from abstract	Population summary	Intervention
<p>★ Heat and cold therapy reduce pain in patients with delayed onset muscle soreness: A systematic review and meta-analysis of 32 randomized controlled trials.</p> <p>Yutan Wang, Sijun Li, Yuanyuan Zhang, Yanru Chen, ...</p> <p><i>Physical therapy in sport : official journal of the Ass...</i></p> <p>2021 Meta-Analysis, Systematic Review 3 Citations</p>	<p>Cold therapy reduces the pain of delayed onset muscle soreness patients within 24 hours.</p>	<p>1098 people with delayed onset muscle soreness.</p>	-
<p>★ In athletes, does cold therapy promote better exercise performance recovery?</p> <p>William H. Ward, Deborah E. Miller</p> <p><i>Evidence-Based Practice</i></p> <p>2019 Meta-Analysis 1 Citations</p>	<p>Cold therapy improves muscle soreness but not all measures of muscle power and performance at 24 hours.</p>	<p>Trained athletes who are human.</p>	cooling immediately postexercise
<p>★ Cold water immersion (cryotherapy) for preventing muscle soreness after exercise</p> <p>J. Diong, S. Kamper</p> <p><i>British Journal of Sports Medicine</i></p> <p>2013 15 Citations</p>	<p>Cold water immersion may prevent muscle soreness after exercise.</p>	<p>people who received cold water immersion after exercise to prevent muscle soreness</p>	cold water immersion



Elicit <https://elicit.org/>

Elicit

**Add information about all papers**

- Abstract summary ✓
- Intervention ✓
- Outcomes measured ✓
- Number of participants ✓

Search for paper information

POPULATION STUDIED

- Number of studies
- Population characteristics
- Population summary
- Age
- Organism
- Region

RESULT

- Detailed abstract

**Paper title**

- ☆ Cold water immersion (cryotherapy) after exercise  
J. Diong, S. Kamper  
*British Journal of Sports Medicine*  
2013 16 Citations DOI
- ☆ Cochrane review: whole-body cryotherapy for preventing and treating muscle soreness  
J. Costello, Philip RA Baker  
*Journal of Evidence-Based Sports Medicine*  
2016 Review 26 Citations DOI
- ☆ Heat and cold therapy reduce muscle soreness: A systematic review of randomized controlled trials.  
Yutan Wang, Sijun Li, Yuan Wang  
*Physical therapy in sport and exercise science*  
2021 Meta-Analysis, Systematic Review
- ☆ Whole-body cryotherapy (extracorporeal shockwave therapy) for preventing and treating muscle soreness  
J. Costello, P. Baker, G. Mirza  
*Cochrane Database of Systematic Reviews*



## Cold water immersion (cryotherapy) for preventing muscle soreness after exercise

J. Diong, S. Kamper

British Journal of Sports Medicine

2013 16 Citations Semantic Scholar DOI

### Abstract summary

Cold water immersion immediately after exercise may have anti-inflammatory effects and prevent delayed onset muscle soreness.

### What did they test?

The intervention is cold water immersion (cryotherapy).

### What outcomes did they measure?

• Muscle Soreness After Exercise

### Population characteristics

participants who received cold water immersion for preventing muscle soreness after exercise

### Can I trust this paper?

- This study was systematic review
- No mention found of funding source
- No mention found of participant count
- No mention found of multiple comparisons
- No mention found of intent to treat
- No mention found of preregistration

### Possible critiques

Holmes et al. critique this paper, [Diong et al.](#), by saying:

This review will strictly compare the data on WBC to CWI and is not intended to cover the safety of either method, as to the authors' best knowledge all current literature shows both to be safe for healthy participants ([Bleakley et al., 2012](#); [Bleakley et al., 2014](#); [Banfi et al., 2010](#)).

### Abstract

► Bleakley C, McDonough S, et al. Cold-water immersion (cryotherapy) for preventing and treating muscle soreness after exercise. *Cochrane Database Syst Rev* 2012; 2 :CD008262.

Intense exercise involving eccentric muscle contractions often leads to delayed onset muscle soreness. Eccentric muscle contractions cause damage to muscle fibres which lead to pain, stiffness and loss in joint range of motion.<sup>1</sup> The anti-inflammatory effects of cold water immersion, a form of cryotherapy where the limb(s) or body is submerged in a cold water bath, are thought to reduce pain and swelling following acute soft tissue injury.<sup>2</sup> Cold water immersion immediately after exercise may have anti-inflammatory effects and prevent delayed onset muscle soreness, however these effects remain unclear.

This study aimed to determine the effects of cold water immersion on the prevention of muscle soreness after exercise.

The following databases were searched up to 2010 or 2011: the Cochrane Bone, Joint and Muscle Trauma Group Specialised Register, CENTRAL, Medline, EMBASE, CINAHL, PEDro and British Nursing Index and archive. The authors also searched databases for ongoing trials and hand-searched journals and conference proceedings. Experts in the field were contacted for relevant data from published, unpublished or ongoing studies.

Randomised and quasi-randomised trials examining cold water immersion for preventing muscle soreness after exercise were included. Participants had to receive cold ...



**Connected Paper** <https://www.connectedpapers.com/>

- Search for 1 paper or run a topic search
- Each node is a related paper. Size of node = how many citations the paper received and the color indicates pub year
- Similar papers are closer to each other vs papers that are farther apart
- References (prior works) and papers that cited the original are available (derivative works)
- Started as weekend project among friends





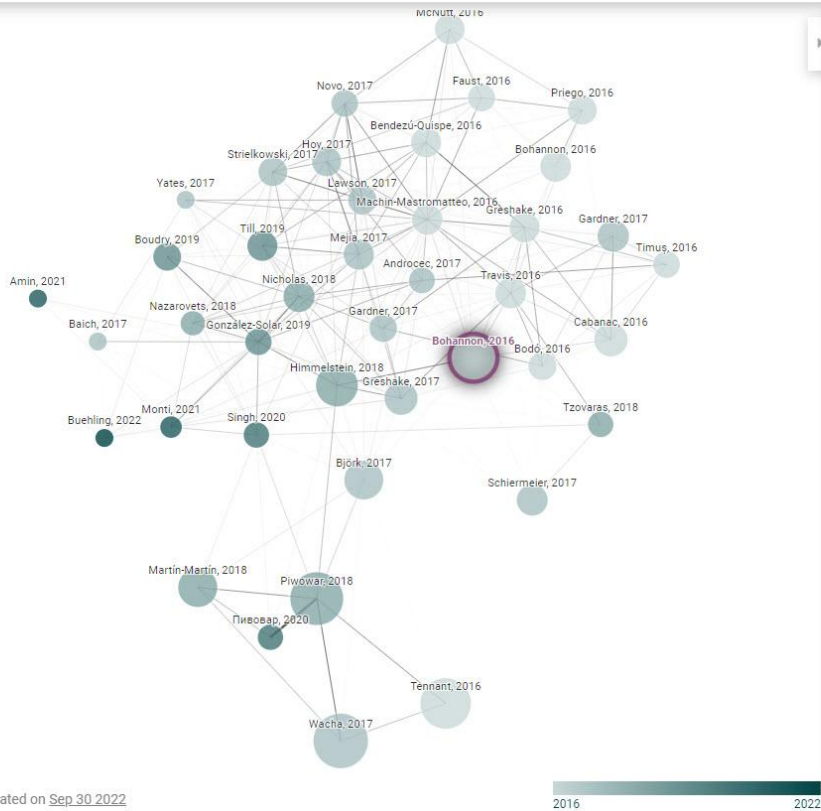
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Who's downloading pirated papers? Everyone.

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- Search... Expand
- Origin paper**
- Who's downloading pirated papers? Everyone. J. Bohannon 2016
  - Sci-Hub provides access to nearly all scholarly literature Daniel S. Himmelstein, Ariel Rodríguez Romero, Jacob G... 2018
  - Sci-Hub, a challenge for academic and research libraries Llarina González-Solar, V. Fernández-Marcial 2019
  - Looking into Pandora's Box: The Content of Sci-Hub and its Usage B. Greshake 2017
  - Bibliogifts in LibGen? A study of a text-sharing platform driven by biblioleaks and crowdsourcing Guillaume Cabanac 2016
  - In survey, most give thumbs-up to pirated papers J. Travis 2016
  - Piracy of scientific papers in Latin America Juan D. Machin-Mastromatteo, Alejandro Uribe-Tirado, M. E... 2016
  - Correlating the Sci-Hub data with World Bank Indicators and Identifying Academic Use B. Greshake 2016
  - The state of OA: a large-scale analysis of the prevalence and impact of Open Access articles H. Piwowar, Jason Priem, V. Larivière, Juan Pablo Alperin, Lisa... 2018



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J. Bohannon  
2016, Science  
173 Citations

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In increasing numbers, researchers around the world are turning to Sci-Hub, the controversial website that hosts 50 million pirated papers and counting. Now, with server log data from Alexandra Elbakyan, the neuroscientist who created Sci-Hub in 2011 as a 22-year-old graduate student in Kazakhstan, Science addresses some basic questions: Who are Sci-Hub9s users, where are they, and what are they reading? The Sci-Hub data provide the first detailed view of what is becoming the world9s de facto open-access research library. Among the revelations that may surprise both fans and foes alike: Sci-Hub users are not limited to the developing world. Some critics of Sci-Hub have complained that many users can access the same papers through their libraries but turn to Sci-Hub instead—for convenience rather than necessity. The data provide some support for that claim. Over the 6 months leading up to March, Sci-Hub served up 28 million documents, with Iran, China, India, Russia, and the United States the leading requestors.

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Who's downloading pirated papers? Everyone.	J. Bohannon	2016	176	0	100
Sci-Hub provides access to nearly all scholarly...	Daniel S. Himmelstein, Ariel Rodríguez Romero, Jacob G...	2018	119	131	25.3
Sci-Hub, a challenge for academic and research...	Llarina González-Solar, V. Fernández-Marcial	2019	9	62	13.3
Looking into Pandora's Box: The Content of Sci...	B. Greshake	2017	35	32	13
Bibliogifts in LibGen? A study of a text-sharing...	G. Cabanac	2016	37	46	12.7
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- Single programmer
- For graph recommend at least 5 seed papers
- Can export citations into citation manager



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Paper discovery and Literature Connector. Can also export to citation manager results. Can also filter by keywords



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These papers cite the same papers as your selected paper. They tend to bias towards newer papers in the field.

		published_year	similarity	num_cited_by ▾
<a href="#">+</a>	<a href="#">The Oligopoly of Academic Publishers in the Digital Era</a> Vincent Larivière, ... Philippe Mongeon	2015	0.130586	125
<a href="#">+</a>	<a href="#">Sci-Hub provides access to nearly all scholarly literature</a> Daniel S Himmelstein, ... Casey S Greene	2018	0.316332	100
<a href="#">+</a>	<a href="#">Gold, green, and black open access</a> Bo-Christer Björk	2017	0.157378	68
<a href="#">+</a>	<a href="#">Copyright compliance and infringement in ResearchGate full-text journal articles</a> Hamid R. Jamali	2017	0.127076	33
<a href="#">+</a>	<a href="#">Looking into Pandora's Box: The Content of Sci-Hub and its Usage</a> Bastian Greshake	2017	0.206793	26
<a href="#">+</a>	<a href="#">Bibliogifts in LibGen? A study of a text-sharing platform driven by biblioleaks and crowdsourcing</a> Guillaume Cabanac	2016	0.24835	24
<a href="#">+</a>	<a href="#">Is the staggeringly profitable business of scientific publishing bad for science</a> Michaela Willi-Hooper	2017	0.159298	21
<a href="#">+</a>	<a href="#">We've failed: Pirate black open access is trumping green and gold and we must change our approach</a> Toby Green	2017	0.163232	20
<a href="#">+</a>	<a href="#">Sci-Hub: The new and ultimate disruptor? View from the front</a> David Nicholas, ... Marzena Swigon	2019	0.223297	19
<a href="#">+</a>	<a href="#">In survey, most give thumbs-up to pirated papers</a> John Travis	2016	0.305888	18

SQL

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## Most Important Papers in the Graph

These are the "Most Important" papers as ranked by PageRank. These tend to be the older papers in the field.

	page_rank	num_cited_by	published_year
<a href="#">+ The state of OA: a large-scale analysis of the prevalence and impact of Open Access articles</a> Heather Piwowar, ... Stefanie Haustein	0.005164	271	2018
<a href="#">+ The State of OA: A large-scale analysis of the prevalence and impact of Open Access articles</a> Megan Wacha	0.001809	140	2017
<a href="#">+ The Oligopoly of Academic Publishers in the Digital Era</a> Vincent Larivière, ... Philippe Mongeon	0.001505	125	2015
<a href="#">+ The Development of Open Access Journal Publishing from 1993 to 2009</a> Mikael Laakso, ... Turid Hedlund	0.002172	106	2011
<a href="#">+ Open Access to the Scientific Journal Literature: Situation 2009</a> Bo-Christer Björk, ... Guðni Guðnason	0.00267	101	2010

## Recent Papers by the Top 100 Authors

	published_year	adamic_adar	num_cited_by
<a href="#">+ Open Access uptake by universities worldwide</a> Nicolás Robinson-García, ... Thed N. van Leeuwen	2020	0	5
<a href="#">+ A tale of two 'opens': intersections between Free and Open Source Software and Open Scholarship</a> Jonathan Tennant, ... Tal Yarkoni	2020	0	3

## The Most Important Recent Papers

	published_year	num_cited_by	page_rank
<a href="#">+ Decoloniality and anti-oppressive practices for a more ethical ecology.</a> Christopher H Trisos, ... Madhusudan Katti	2021	11	0.000575
<a href="#">+ Vehicle and Pedestrian Detection Based on Improved YOLOv4-tiny Model</a> Lingzhe Ma, ... Jilin Zhang	2021	14	0.000555





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- Add 1 paper and it will generate the following:
  - Recommendations
  - Visualizations
  - Automatic alerts on new papers
- Zotero integration
- Suggested similar authors
- Suggested similar works by timeline or network



# Research Rabbit <https://researchrabbitapp.com/>

The screenshot displays the Research Rabbit app interface. On the left, a sidebar shows a filter for 'Sci-Hub' and a list of selected papers, including one by John Bohannon titled 'Who's downloading pirated papers? Everyone.' A green 'Add Papers' button is visible below the list.

The main content area is divided into several sections:

- 1 selected paper:** A blue-bordered box containing the details of the selected paper, including the author's name, title, year (2016), and a brief abstract.
- Similar Work:** A section with a red arrow pointing to a 'Similar Work' button (500) under the 'EXPLORE PAPERS' heading. Below this are other exploration options: 'All Citations' (100), 'EXPLORE PEOPLE' (These Authors: 1, Suggested Authors: 1), 'EXPLORE OTHER CONTENT' (Linked Content: 10), and 'EXPORT PAPERS' (BibTeX, RIS, CSV).
- Public Collection:** A toggle switch is turned off.
- Shareable Link:** A 'Copy' button is present.
- Collaborators:** An 'Edit' button is present.
- Email Updates:** A toggle switch is turned on.

On the right side, there is a 'Connections between your collection and 50 papers' section. It features a network graph with nodes and edges, and a sidebar with 'EXPLORE PEOPLE' (These Authors: 419, Suggested Authors: 644) and 'EXPLORE OTHER CONTENT' (Linked Content: 367). Below the graph are 'EXPORT PAPERS' options (BibTeX, RIS, CSV) and a 'Connections' button.



Thank you

Questions?

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