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Spring 2023

Introduction to Literature Mapping Tools

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Introduction to Literature Mapping Tools

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Rowan University Libraries

Who I am

Daniel G. Kipnis, MSI

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

RowanUniversity

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/

Semantic Scholar https://www.semanticscholar.org/

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

Elicit **https://elicit.org/**

Elicit   🔍 does cold therapy help with muscle soreness   ⓘ FAQ   ▥ Tasks   ☆ Starred   ⊙

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

Elicit https://elicit.org/

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.1 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.2 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 ...

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- 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

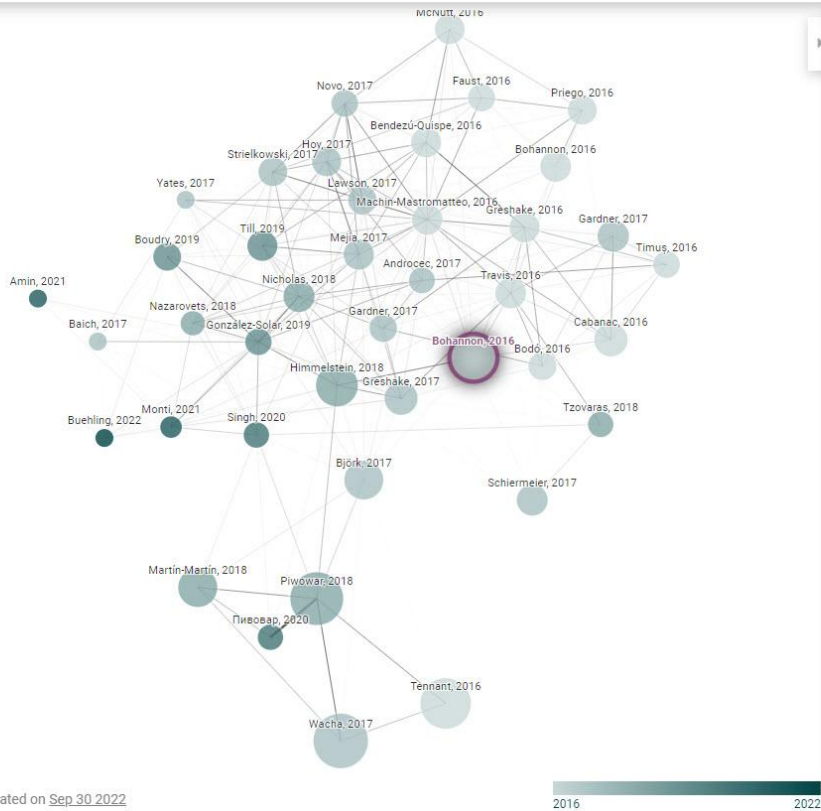**Connected Paper** https://www.connectedpapers.com/

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$^$10/month*

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Upgrade

- Unlimited graphs
- All features included
- For business and industry

*billed $120 annually

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Origin paper
Who's downloading pirated papers? Everyone.
J. Bohannon   2016

Sci-Hub provides access to nearly all scholarly literature
Daniel S. Himmelstein, Ariel Rodriguez 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

Who's downloading pirated papers? Everyone.
J. Bohannon
2016, Science

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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.

? ⊚ Created on Sep 30 2022

2016   2022

who's downloading

Who's downloading pirated papers? Everyone.

Prior works   Derivative works

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Title	Authors	Year	Citations	References	Similarity to origin
Who's downloading pirated papers? Everyone.	J. Bohannon	2016	176	0	100
Sci-Hub provides access to nearly all scholarly...	Daniel S. Himmelstein, Ariel Rodriguez 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
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Inciteful: https://inciteful.xyz/

- Also created out of frustration in researching topics and finding relevant information
- Single programmer
- For graph recommend at least 5 seed papers
- Can export citations into citation manager

Inciteful: https://inciteful.xyz/

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

Who's downloading pirated papers? Everyone.

John Bohannon

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... ⌄ more

153	0	2016	No	5,424	23,208	2
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Links: Publisher |

Click on the purple plus signs (⊕) to add the most interesting papers to the graph. We recommend that you **add at least five papers to the graph** in order to find the most relevant results. If the papers below don't seem relevant, **use the keyword filter** to find the ones which are.

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

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

Recent Papers by the Top 100 Authors

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

The Most Important Recent Papers

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

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Questions?

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