IRG eNewsletter

June 2023
Number 19

IRG-related Events

Finding search filters for study designs: using the ISSG Search Filter Resource
Online webinar sponsored by the HTAi Information Retrieval Interest Group
Speaker: Julie Glanville
1 June 2023
Webinar available at: https://www.youtube.com/watch?v=v4m9RhXmdkk

WS16 - Advanced workshop in information retrieval: new challenges and updated approaches in efficient HTA literature searching
HTAi 2023 Annual Meeting
25 Jun 2023
Adelaide, Australia
Cost: $160 USD
Registration: https://htai.eventsair.com/htai-23-adelaide-am/workshop-program

Upcoming: Information Retrieval Meeting 2024 (IRM 2024)
26 Apr 2024
Cologne, Germany
For information on last year's meeting: https://www.iqwig.de/en/events/information-retrieval-meeting/

Publications of Interest

COVID-19 resources or search techniques

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Websites of Interest

ScanMedicine
https://scanmedicine.com/
Open access to medical datasources for clinical trials and devices.
From the press release: "The NIHR Innovation Observatory (NIHRIO), based at Newcastle University, has launched a comprehensive database of clinical trials as well as medical devices, diagnostics and digital applications approved by America's Food and Drug Administration (FDA). ScanMedicine, a free resource for researchers, clinicians and the public, draws from 11 of the world's leading clinical trial databases and pulls information on devices, diagnostics and apps from the FDA database. It allows users to access up-to-date information about what research is in progress in their area of interest, and what new medicines, devices and diagnostics are on the horizon. The tool collates and presents the latest data in a readily accessible format, enabling users to filter results by trial type, phase, registry and more, as well as to view searches as visualisations and infographics for a 'quick-look' version of their results, identifying gaps and trends…"
https://www.nihr.ac.uk/news/nihr-launches-innovative-searchable-database-of-global-clinical-trials/27660

Library of Search Strategy Resources (LSSR)
https://sites.google.com/view/searchresourceslib/home
From the website: We are a subsection of the Evidence-Based Information Special Interest Group (EBI-SIG) with the European Association of Health Information and Libraries (EAHIL). We are building a living open access Library of Search Strategy Resources (LSSR). The aim is to help those who search for health literature to source and build search strategies. This source will also contain additional information to enhance literature searching skills. We need help in identifying additional online freely available resources to make this library better. We are particularly interested in the following types of resources:

- Collections or databases of systematic search strategies
- Systematic search strategy building tools
- Systematic search strategy tutorials

LIGHTS: the Library of Guidance for Health Scientists
https://lights.science/
From the website: There is a need for improving the methodological quality of health research (e.g., Yordanov et al. 2015). For most methodological challenges in health research, appropriate guidance is available – and not seldom has been available for years. Various journals and research support organizations publish methods guidance. Methods guidance is not easy to find. The terminology is inconsistent and the indexing of methods guidance and methodological topics in biomedical databases is insufficient (e.g., Hirt et al. 2022). The goal of LIGHTS is to help health researchers find appropriate methods guidance for their projects.
LIGHTS provides

- A large collection of methods guidance articles; not perfect yet but steadily improving
- An intuitive search engine
- Automated synonym search (enter *subgroup effect* and also find *interaction* and *effect modification*)
- Search filters specifically developed to support the search for methods guidance

Search Smart
https://www.searchsmart.org/
From the website: Search Smart suggests the best databases for your purpose based on a comprehensive comparison of most of the popular English academic databases. Search Smart tests the critical functionalities databases offer. Thereby, we uncover the capabilities and limitations of search systems that are not reported anywhere else. Search Smart aims to provide the best – i.e., most accurate, up-to-date, and comprehensive – information possible on search systems' functionalities. Researchers use Search Smart as a decision tool to select the system/database that fits best. Librarians use Search Smart for giving search advice and for procurement decisions. Search providers use Search Smart for benchmarking and improvement of their offerings.

LitSense
https://www.ncbi.nlm.nih.gov/research/litsense/
From the website: Making sense of biomedical literature at sentence level. LitSense is a unique search system for making sense of the biomedical literature at the sentence level, providing a unified access to over half a billion statements extracted from PubMed and PubMed Central. Given a query, LitSense finds the best-matching sentences based on overlapping terms as well as semantic similarity via a cutting-edge neural embedding approach. Search results are also available through an API.

Unique Features

- Intelligent Filters – Search results can be conveniently filtered by date or restricted to a specific article section.
- Search in Full Text – LitSense provides unified access to the entire ~30 million abstracts in PubMed and nearly 3 million full-text articles in the PMC Text Mining subset.
- Neural Embeddings – Neural embedding techniques allow LitSense to find semantically similar results even without explicitly mentioning the query keywords.

PubMed Mapping Tester
https://esperr.github.io/mapping-tester/
From the website: With Automatic Term Mapping, a simple text query is translated to a more complex one, often composed of MeSH headings as well as different text fields. The algorithm for doing so is maintained by the National Library of Medicine, and the final translation for a given search is viewable by selecting the "Advanced" tab in PubMed…The other way to see the results of a search (and the mapping from which it is derived) is by using the API maintained by the NCBI. While the new version of PubMed has been in production for some months, the public API still points to the old search interface (and thus, the older iteration of ATM). Happily, there is now a test instance of the API that points to the new search interface, allowing us to directly compare one version to the other (for at least the next several weeks before the old API is retired).

It is these two different APIs that PubMed Mapping Tester uses to retrieve the two sets of results for comparison. Once you enter your search, you'll see the number of results returned by both 'old' PubMed and the current version. You'll also see the ATM translation used by each. Any terms that are newly included in the new mapping will be highlighted in yellow. Design and contruction by Ed Sperr, M.L.I.S.

OpenAlex
https://docs.openalex.org/
From the website: OpenAlex is a fully open catalog of the global research system. It's named after the ancient Library of Alexandria and made by the nonprofit OurResearch. This is the technical documentation for the OpenAlex API. Here, you can learn how to set up your code to access OpenAlex's data. If you want to explore the data as a human, you may be more interested in OpenAlex Web. This web interface is currently in the alpha stage of development, with a beta launch coming in July 2023.

Clinical Trials Information System (CTIS)
Home page: https://euclinicaltrials.eu/
Search: https://euclinicaltrials.eu/search-for-clinical-trials
From the website: From 31 January 2023, all initial clinical trial applications in the European Union (EU) must be submitted via the Clinical Trials Information System (CTIS). CTIS is now the single-entry point for sponsors and regulators of clinical trials for the submission and assessment of clinical trial data. This follows a one-year transition, during which sponsors could choose whether to apply for a new clinical trial in the EU/EEA in line with the Clinical Trials Directive or under the new Clinical Trials Regulation (CTR), which entered into application on 31 January 2022.

In the past, sponsors had to submit clinical trial applications separately to national competent authorities (NCAs) and ethics committees in each country to gain regulatory approval to run a clinical trial. Registration and the posting of results were also separate processes. With CTIS, sponsors can now apply for authorisations in up to 30 EU/EEA countries at the same time and with the same documentation. The system includes a public, searchable database for healthcare professionals, patients, and other interested parties. The CTR foresees a three-year transition period, from 2022 to 2025…[I]n the next two years, by 31 January 2025, all ongoing trials that were approved under the Clinical Trials Directive will be governed by the new Regulation and will have to be transitioned to CTIS.

preVIEW: COVID-19
https://preview.zbmed.de
From the website: During the current COVID-19 pandemic, the rapid availability of profound information is crucial in order to derive information about diagnosis, disease trajectory, treatment or to adapt the rules of conduct in public. The increased importance of preprints for COVID-19 research initiated the design of the preprint search engine preVIEW. Conceptually, it is a lightweight semantic search engine focusing on easy inclusion of specialized COVID-19 textual collections and provides a user-friendly web interface for semantic information retrieval. In order to support semantic search functionality, we integrated a text mining workflow for indexing with relevant terminologies. Currently, diseases, human genes and SARS-CoV-2 proteins are annotated, and more will be added in future. The system integrates collections from several different preprint servers that are used in the biomedical domain to publish non-peer-reviewed work, thereby enabling one central access point for the users. In addition, our service offers facet searching, export functionality and an API access. For further information please read our publications (10.3233/SHTI210124, 10.32384/jeahil17484) or see our tutorial.

IRG Member Activities

IRG interview: Dr Raechel Damarell

Dr Raechel Damarell is Senior Research Fellow for The Knowledge and Implementation Hub of Aged Care Research & Industry Innovation Australia (ARIIA) at Flinders University. Raechel is also a team member of Flinders Filters. She took a moment to answer a few questions from Catherine Voutier.

1. *What has been the most challenging project you've been involved in at Flinders Filters?*

While each search filter project brings its own unique challenges, it's the multidimensional, multiple-concept health service topics, more so than clinical topics, that have tended to really push search filter methodology into new territory. And this is how it should be, as search filters arguably provide the most benefit when they support difficult-to-search topics. I would class here all those topics not supported by a unifying MeSH term, or which can only be approximated using a rich constellation of terms combined in inventive ways. This describes our work on the topics of integrated care, home care, and primary healthcare with integrated care heading the list.

Unlike searches for evidence syntheses, search filters don't aim for comprehensive, exhaustive retrieval but are created fit for purpose, customised to the information retrieval needs of a specific end-user group. The organisations for whom we have designed searches tend to represent busy clinicians or health researchers who need to get to relevant literature fast but also don't want to miss anything important. This requires a careful balancing act between search sensitivity and precision and a lot of consultation with the expert advisory group we establish at the outset of a project to guide the work.
The integrated care search filter project was a collaboration with the International Foundation for Integrated Care (see https://integratedcarefoundation.org/ific-integrated-care-search). This partnership provided us with the opportunity to work with an advisory group comprising the foremost international experts in the field. This was pivotal in helping us grasp the topic from the viewpoint of different countries and their health systems.
The integrated care filter project was particularly challenging for several reasons. First, the MeSH term for integrated care is rather US-centrically defined and subsequently proved unhelpful in retrieving relevant literature outside the US. Secondly, the defining elements of this topic are multifaceted and somewhat 'fuzzy' in that they tend to mean different things to different people and across different healthcare systems. Furthermore, the concepts central to integrated care are also not necessarily exclusive to it. For example, analysis of a set of citations judged by experts as 'relevant' to the topic (aka 'the gold standard') revealed two core, high-frequency terms--'coordinated care' and 'person-centred care.' While our advisory group confirmed their pivotal importance, including them in the search filter proved problematic during the testing phase. They were eventually not included in the interests of search precision, despite the risks to search sensitivity.
Search filter development is characterised by these numerous, seemingly small decision points that can have important ramifications for your final product. This is what makes the work intellectually challenging in the most positive way.

2. How did your role of information specialist change to that of health researcher?

My skills as a health-based information specialist with a university library led me to a short-term secondment opportunity with CareSearch to develop a heart failure filter. I had not heard of search filters up until that point, although I have always been interested in the finer details and intricacies of information retrieval. This work took my understanding of search construction and database search algorithms to a whole new level. I put my hand up to draft the journal article about the heart failure filter work and my interest in researching and publishing around effective search strategy development took off from there. Instead of relinquishing search filter work when it came time to return to the library, I managed to keep my hand in while my substantive role became training students, researchers, and clinicians on the principles of evidence-based practice and systematic review methodology. Like many health librarians who espouse the importance of robust searches, I was increasingly invited to collaborate on systematic reviews. This was excellent training for research. So, when the opportunity to do my own program of research in the form of a PhD came along, I was ready to take a different career path. My thesis centred on evidence-based practice; specifically, how general practitioners manage patients with multimorbidity in the absence of supportive evidence. Now as a senior research fellow with ARIIA, I still draw on my skills and interests in evidence and information retrieval as my role involves producing evidence syntheses on issues affecting the Australian aged care sector.

3. Do you think ChatGPT and similar AI tools have a role in systematic reviews?

Definitely. Evidence syntheses are incredibly time-consuming, cognitively demanding undertakings. I am appreciating the AI recently employed in Covidence to help improve the screening process. It would be terrific if this could be extended to the laborious process of data extraction (perhaps it already has). However, I have some reservations about ChatGPT and any form of AI that works across an unknown data source as you can't vouch for the quality and scope of this information. So far, the information I've seen collated by ChatGPT doesn't seem to be entirely trustworthy. Just try asking for referenced information involving prevalence statistics. Wildly off the mark!

4. How can information professionals and medical librarians get noticed by health researchers in regard to systematic review and other evidence synthesis projects?

Simply by promoting their valuable skillset and knowledge to them and being supported by their organisation to contribute to research work. In my experience, most health researchers are aware of and have the greatest respect for (sometimes bordering on reverence), the knowledge and skills of really competent information professionals who understand evidence synthesis methodologies and who can develop technically accurate and well-conceptualised search strategies for this purpose. This ability is by no means general to all librarians and sometimes even training doesn't get people there. It really is a rare skill, in my opinion, and people who lack it tend to recognise it as such.
However, you can only promote your services and availability for this kind of work if you have the support of your organisation and its managers behind you. Sadly, I am hearing that within the academic library context, there is a trend towards devaluing health librarian skills and knowledge in favour of generalist skills that are no longer even the province of information professionals. Rather than seeing demand for systematic review

support as an opportunity, requests to collaborate with researchers are viewed as an 'unsustainable' drain on library resources. Former colleagues still undertaking this kind of work—which they find incredibly interesting and challenging—tell me they do so almost covertly for fear they might be asked to stop. Co-authorship opportunities that might raise the profile of the expert health librarian don't appear to offer the right currency for negotiating with library managers either. I think it's a real shame and it's a major reason why I chose to leave librarianship. I hope it's not a universal experience.

5. Just for fun: what was the last movie you saw?

As a fan of historic costume dramas, I recently watched a 1991 film titled Shining Through starring Michael Douglas and Melanie Griffith and set during World War 2. The film's premise is that a New York-raised secretary with only a smattering of German dialect (thanks to Grandma's home tutoring) not only manages to slip into wartime Berlin undetected but is soon fraternising with senior-ranking Nazis and able to smuggle highly classified armaments intelligence to the Allies that changes the outcome of the war. It was very enjoyable for its silliness and its beautiful attention to period details. There were also some amazing location shots of places across former East Germany and East Berlin taken just after reunification to keep me engaged.

If you are a member of the HTAi Information Retrieval interest group and would like to share your research activities with other IRG members in this newsletter, please contact DavidK@cadth.ca.

The IRG eNewsletter is put together by the following Information Retrieval Group members: David Kaunelis (Canada); Catherine Voutier (Australia); Dagmara Chojecki (Canada); and Jaana Isojärvi (Finland). Have any events, news, or interesting papers or websites you want to share? Just email DavidK@cadth.ca.