Ortho Boot Camp: Welch Library for Comprehensive Searching

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Agenda

- ► Search Process

- ► Selecting a Database
  - ► Database overviews

- ► Beyond Databases

- ► Managing Your Citations

- ► Publication Considerations

What will NOT be covered:
- ► Advanced database searching
- ► Finding Full Text
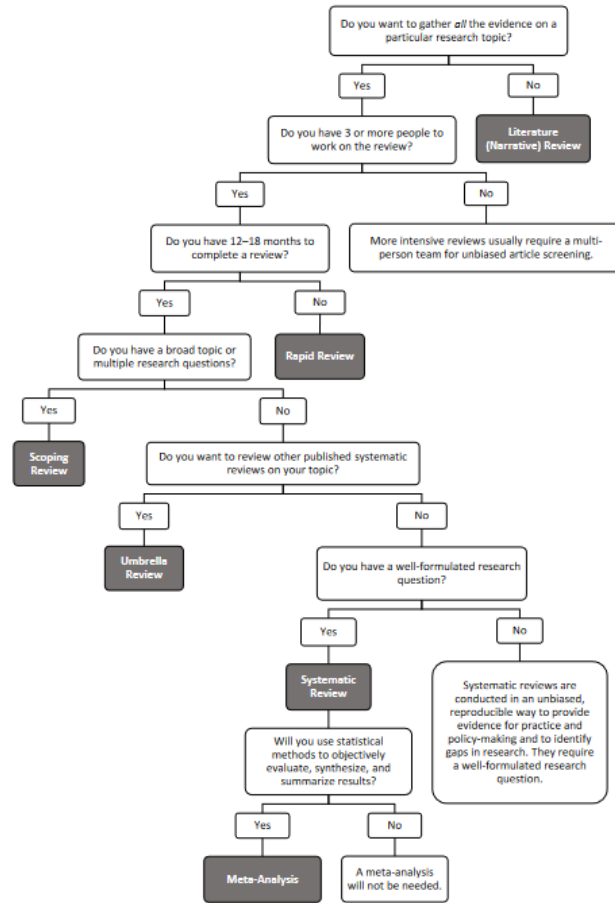- ► Protocol development
- ► Selection/evaluation of evidence

The Search Process

Systematic Search Process

1) Define the need & develop the question

   1) Identify key terms, synonyms, scientific terms

2) Select databases

3) Translate question into database query (iterative process; synonyms, controlled vocabulary)

4) Download citations and de-duplicate citations

5) Hand Search journals/Search for unpublished literature

6) Review and evaluate search results (when to stop searching)

Based on Cochrane Handbook, Ch 4 - https://training.cochrane.org/handbook/current/chapter-04

Define the Need, Develop the Question

What Type of Review is Right for You?

Prior to starting your review:

- Has a review recently been published on your topic?
- Would the review you are planning add value through improved currency or quality?
- Would a review on a different, related topic better contribute to the existing literature?

► Cornell University Library. What Type of Review is Right for You? https://www.library.cornell.edu/wp-content/uploads/2024/05/SystematicReview_DecisionTreeAndMethodologies_new.pdf

Develop the Question

► Select a framework for the question

► Common frameworks include:
  ► PICO – <u>P</u>opulation or Problem, <u>I</u>ntervention or Exposure, <u>C</u>omparison or Control, <u>O</u>utcome
  ► PICOS – PICO as above with <u>S</u>tudy Type
  ► PICOT – PICO with <u>T</u>ime
  ► PEO – <u>P</u>opulation, <u>E</u>xposure of Interest, <u>O</u>utcome or Response
  ► COCOPOP – <u>C</u>ondition, <u>C</u>ontext, <u>P</u>opulation
  ► SPIDER – <u>S</u>ample, <u>P</u>henomenon of <u>I</u>nterest, <u>D</u>esign, <u>E</u>valuation, <u>R</u>esearch Type
  ► SPICE – <u>S</u>etting, <u>P</u>erspective, <u>I</u>ntervention, <u>C</u>omparison, <u>E</u>valuation
  ► ECLIPSE – <u>E</u>xpectation, <u>C</u>lient Group, <u>L</u>ocation, <u>I</u>mpact, <u>P</u>rofessionals, <u>S</u>ervice

Where to check for similar studies

► Do a quick search in PubMed on your topic, filter to systematic reviews and look at the results

► Search protocol data sources for protocols of reviews in development
  o Cochrane Library
  o Prospero
  o OSF

Database Selection & Overview

Selecting a Database

► Go from the general to the specific

► Selection of databases to search needs to be as transparent, rigorous, and free of bias as the rest of the review

► Consider costs, language challenges, and geographic considerations

Generic Database Features

► "Controlled vocabulary" or "subject headings" or "keywords" or "thesaurus"

► Boolean searching (AND, OR, NOT), wildcards, proximity, or adjacency searching

► Search history and combine searches

► View Search/manual field searching

► "Clipboard" or "Folder" etc.

► Filters or 'limits' to refine searches by year, age, sex, species, or article type

Why Use Controlled Vocabulary?

► Controlled vocabulary behaves like a standardized #hashtag
  ► Is assigned to records based on major topics
  ► Makes literature discoverable

► Controlled vocabulary provides a consistent, precise way to retrieve information when:
  ► Different words are used for the same concept
  ► Words have variations in spelling (behavioral vs behavioural)
  ► There is ambiguity in meaning (staff retention vs urinary retention)
  ► Search for concepts not expressed in title or abstract
  ► Refinements such as subheadings, major focus available

► Known as MeSH in Pubmed/MEDLINE, CINAHL headings in CINAHL, Emtree in Embase, Thesaurus in APA PsycInfo

Databases to consider

- *MEDLINE® via PubMed*

- *Embase*

- *Cochrane Central (RCTs)*

Multi disciplinary

- Web of Science

- Scopus

Specialized

- CINAHL

- APA PsycINFO

- ERIC

- PEDro

- Over 400 databases available, consult your informationist

Where to find databases

Select the Databases Tab to search for a database by title

Most commonly used databases are linked here

PubMed

► Use "Advanced" to
  ► Combine search sets (population, health topic(s), interventions and study designs)
  ► Search specific fields

► Use "Details" (found on the "Advanced" page) to view and edit search

► Login to save search strategies, set up search alerts

PubMed Search hints

► Text word searching
  ► Titles since 1966, abstracts since 1975
    ● Use [tiab] to search titles & abstracts, [tw] to search text word fields
    ● Proximity searching available, use "phrase to search" [tiab:~#] to search terms near each other
  ► Truncation invaluable – use the * to truncate
    ● Infect* [tiab] searches infect, infects, infected, infecting, infectious, etc. appearing in the title or abstract
    ● Can truncate multiple terms in a phrase - "fractur* fixat*" [tiab]
    ● Not available when doing proximity searching

  ► Boolean logic for combining concepts (AND, OR, NOT)

Embase

► European counterpart to Medline

► More than 45 million citations from 1947
  ► Includes MEDLINE as well as 3,300 journals and 12 million citations not found in MEDLINE
  ► Includes over 5.1 million conference abstracts since 2009

► Controlled vocabulary is EMTREE

► Specialized search interfaces for PICO, drugs, medical devices

► Various studies demonstrate need to search Embase as well as PubMed (e.g. Wong 2006 JMLA)

Wong SS, Wilczynski NL, Haynes RB. Comparison of top-performing search strategies for detecting clinically sound treatment studies and systematic reviews in MEDLINE and EMBASE. J Med Libr Assoc. 2006 Oct;94(4):451-5. PMID: 17082841; PMCID: PMC1629423.

Searching Embase

▶ Use **Advanced Search** to map to and explode preferred terms, along with synonyms (keywords)

▶ Defaults to citation retrieval from Embase **and** MEDLINE

▶ Proximity searching is available, use NEAR/# or NEXT/#

▶ Query translator will convert a PubMed strategy to Embase syntax

Cochrane's Central Register of Controlled Trials

► Reports of randomized & quasi-randomized controlled trials

► Controlled vocabulary is MeSH

► Over 2 million records

► Citations come from MEDLINE, Embase, CINAHL, clinicaltrials.gov, WHO International Clinical Trials Registry Platform

► Mouse over Trials to search Central

► Proximity searching available use Near/#

# CINAHL (Cumulative Index of Nursing & Allied Health Literature)

- 1937-present coverage

- Over 3,600 nursing and allied health journal titles

- 4 mil + citations

- Uses CINAHL Subject Headings – nursing and allied health terms including nursing classifications

- Proximity operators are N# or W#

Web of Science

► Multidisciplinary research database including:
  ► Science Citation Index(1900)
  ► Social Sciences Citation Index(1900)
  ► Arts and Humanities Citation Index (1975)
  ► Emerging Sources Citation Index (2005)
  ► Conference Proceedings Citation Index (1990)

► No controlled vocabulary

► Wildcards: **enzym*** to find enzyme, enzymes, enzymatic, enzymology. **wom?n** to search for records that contain woman, women, or womyn; **vapo$r**

► Proximity operator Near/# available (bariatric NEAR/3 surgery)
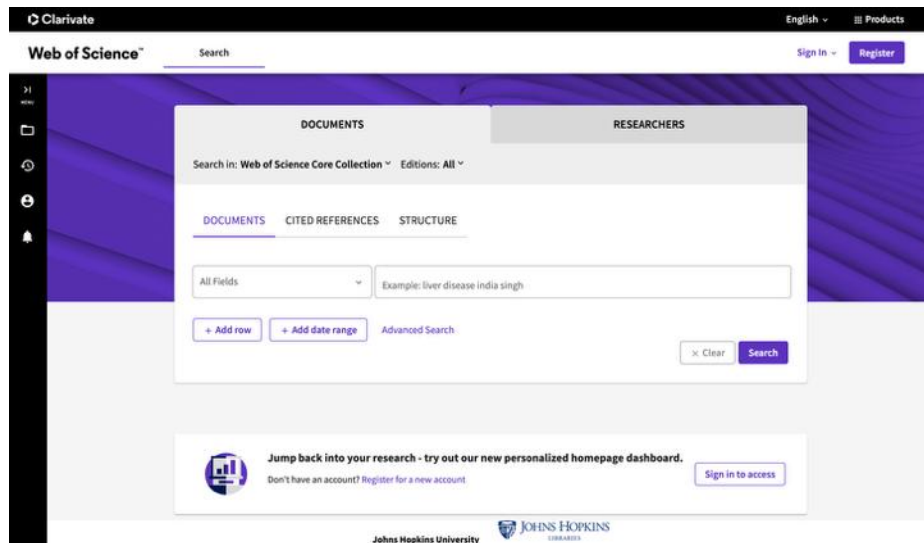
Scopus
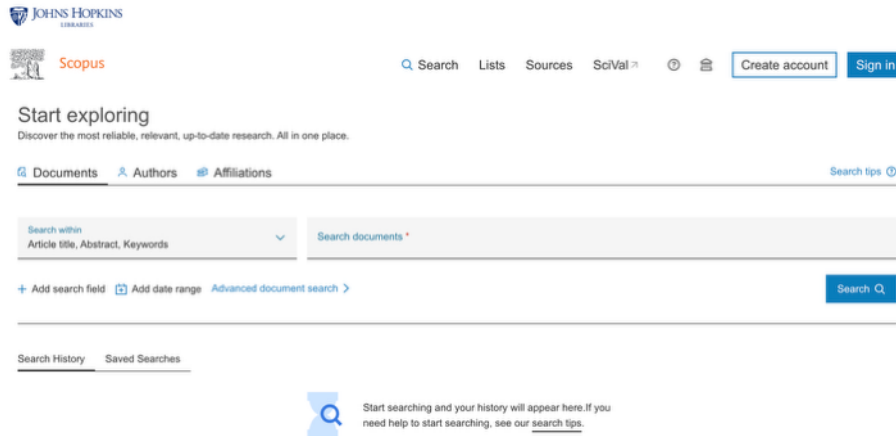
▶ Multidisciplinary abstract and citation database covering the following disciplines: health sciences, life sciences, physical sciences, social sciences

▶ Content includes:
  ▶ 97+ million records, including references
  ▶ 2.3+ million preprints
  ▶ 19+ million author profiles
  ▶ 28,000+ active journal titles
  ▶ 368,000+ books

▶ No controlled vocabulary

▶ Proximity operator is W/#

Additional Databases to Consider

▶ PEDRO – search for randomised controlled trials, systematic reviews and evidence-based clinical practice guidelines in physiotherapy

▶ TRIP Pro – use to find quality research evidence in support of practice and/or patient care

▶ PsycINFO – articles, book chapters, books, dissertations, and technical reports in the field of psychology

▶ ClinicalTrials.gov – information about federally and privately supported clinical research in human volunteers

Beyond Database Searching

Hand Searching

► Not all trial reports are included in databases and may not be indexed to identify them as trials

► Use Journal Citation Reports (within Web of Science) or Scopus Sources to locate journals by topic

► Consider searching for policy documents

► Google Scholar should also be searched, first 100 to 200 references are most valuable

► Depending on the topic 5-15% of studies can be added by hand searching and searching the grey literature (Hopewell, 2002)

Hopewell S, Clarke M, Lusher A, Lefebvre C, Westby M. A comparison of handsearching versus MEDLINE searching to identify reports of randomized controlled trials. Stat Med. 2002 Jun 15;21(11):1625-34. doi: 10.1002/sim.1191. PMID: 12111923.

Finding Unpublished Studies

► Identify ongoing trial studies through

  ► TrialsCentral - https://www.trialscentral.org/
  ► Current Controlled Trials - http://www.isrctn.com/
  ► ClinicalTrials.gov - https://clinicaltrials.gov/
  ► WHO International Clinical Trials Registry Platform (ICTRP) - https://www.who.int/clinical-trials-registry-platform/

► Institutional Repositories: Oaister

► Dimensions or Policy Commons for research produced by IGOs, NGOs, and think tanks

► Deep web engines (Mednar)

► Requests from colleagues, experts and pharmaceutical companies

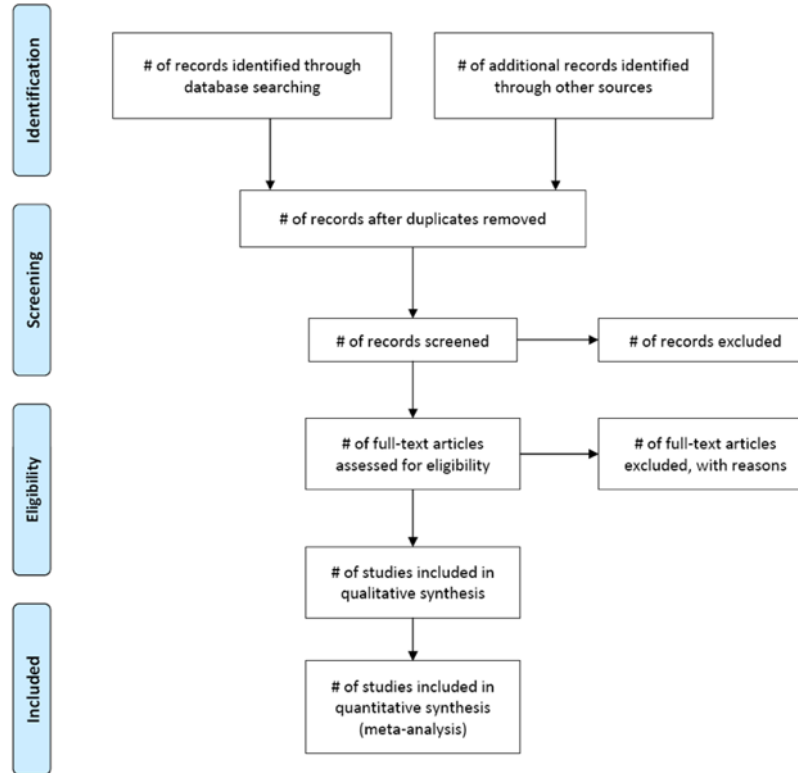► Welch video on searching for Grey Literature

Also worth mentioning

▶ Checking reference lists

▶ Checking other (existing) reviews

▶ Using Scopus or Web of Science for electronic reference list checks

Presenting Findings

- ► Standards for Reporting
  - ► Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) – evidence-based minimum set of items in reporting systematic reviews and meta-analyses
  - ► EQUATOR (Enhancing the QUAlity and Transparency Of health Research) Network – international initiative to improve reliability and value of published health research literature – searchable database of reporting guidelines for main study types
  - ► Finding What Works in Healthcare: Standards for Systematic Reviews – standards for systematic review of comparative effectiveness of medical or surgical interventions
  - ► JBI Reviewer's Manual – guide to conducting JBI systematic reviews, includes mixed methods reviews, umbrella reviews, and scoping reviews
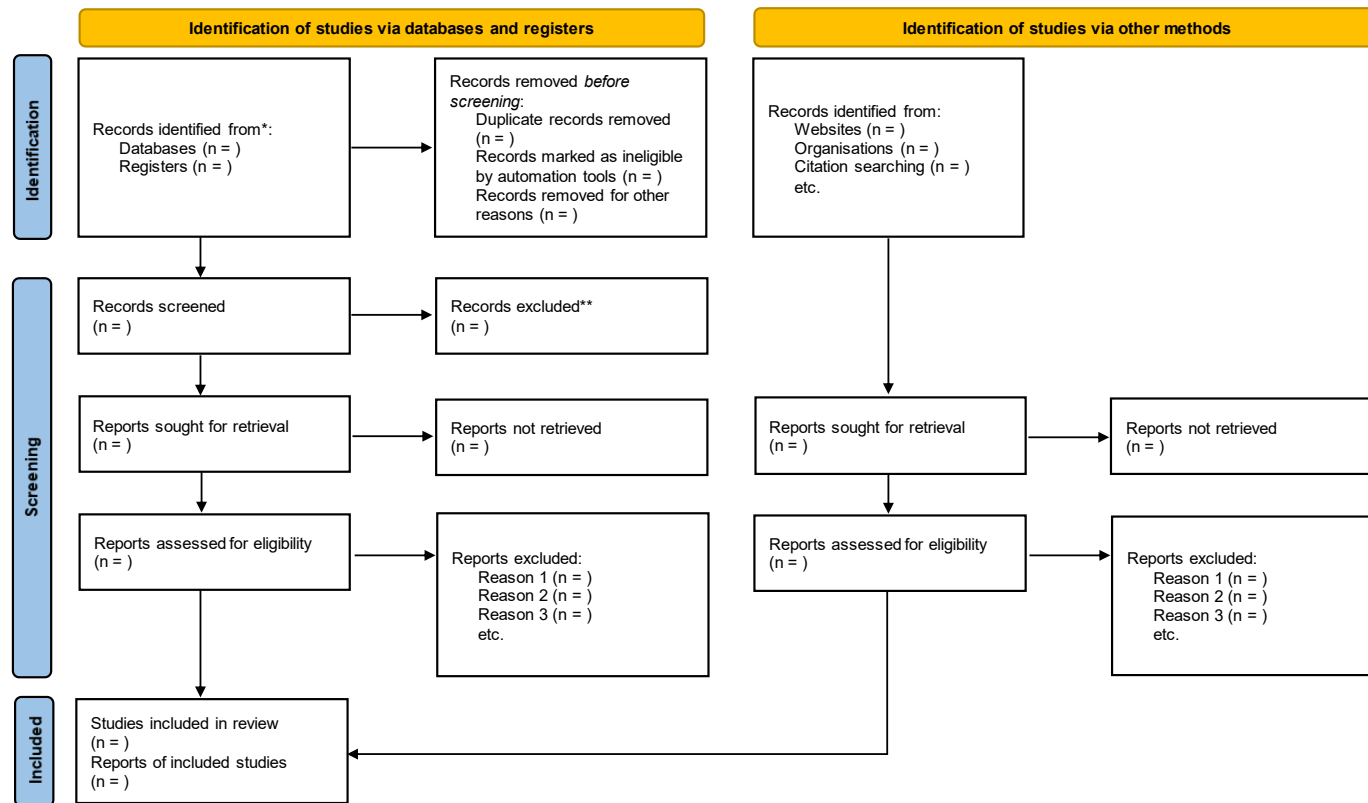
PRISMA 2009 Flow Diagram

Identification

# of records identified through database searching

# of additional records identified through other sources

Screening

# of records after duplicates removed

# of records screened → # of records excluded

Eligibility

# of full-text articles assessed for eligibility → # of full-text articles excluded, with reasons

# of studies included in qualitative synthesis

Included

# of studies included in quantitative synthesis (meta-analysis)

For more information, visit www.prisma-statement.org.

PRISMA 2020 flow diagram for new systematic reviews which included searches of databases, registers and other sources

Identification of studies via databases and registers

Identification

Records identified from*:
  Databases (n =)
  Registers (n =)

→

Records removed *before screening*:
  Duplicate records removed (n =)
  Records marked as ineligible by automation tools (n =)
  Records removed for other reasons (n =)

Screening

Records screened
(n =)

→

Records excluded**
(n =)

Reports sought for retrieval
(n =)

→

Reports not retrieved
(n =)

Reports assessed for eligibility
(n =)

→

Reports excluded:
  Reason 1 (n =)
  Reason 2 (n =)
  Reason 3 (n =)
  etc.

Included

Studies included in review
(n =)
Reports of included studies
(n =)

Identification of studies via other methods

Records identified from:
  Websites (n =)
  Organisations (n =)
  Citation searching (n =)
  etc.

Reports sought for retrieval
(n =)

→

Reports not retrieved
(n =)

Reports assessed for eligibility
(n =)

→

Reports excluded:
  Reason 1 (n =)
  Reason 2 (n =)
  Reason 3 (n =)
  etc.

*Consider, if feasible to do so, reporting the number of records identified from each database or register searched (rather than the total number across all databases/registers).

**If automation tools were used, indicate how many records were excluded by a human and how many were excluded by automation tools.

From: Page MJ, McKenzie JE, Bossuyt PM, Boutron I, Hoffmann TC, Mulrow CD, et al. The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. BMJ 2021;372:n71. doi: 10.1136/bmj.n71. For more information, visit: http://www.prisma-statement.org/

Managing Your Citations

Bibliographic Management Software

Why Use Bibliographic Management Tools?

► Efficient
  ► duplicate citations from multiple databases can be deleted, saving time on review

► Convenient
  ► citations collected in one place
  ► can format citations in appropriate style

► Collaborative

Covidence

► Covidence allows your team
  - ► to upload search results, screen abstracts and full text
  - ► complete data collection
  - ► conduct risk of bias assessment
  - ► resolve disagreements
  - ► and export data into RevMan or Excel.
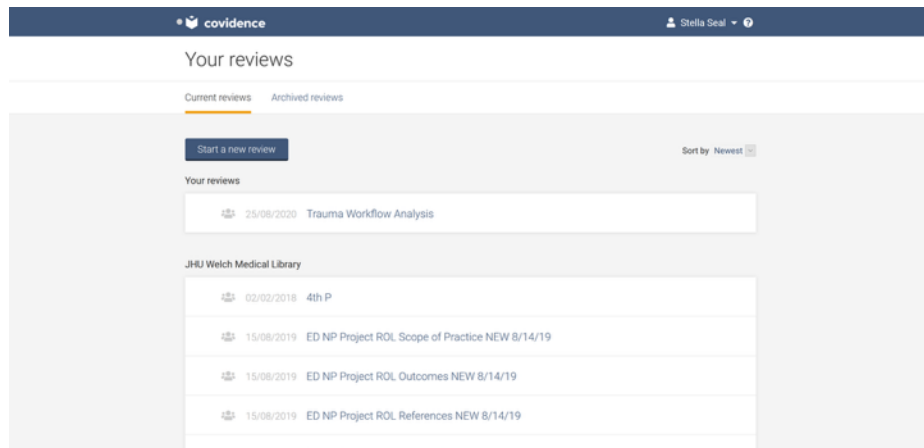
Publication Considerations

Tools to help

- ▶ Finding a journal
  - ▶ JANE (journal/author name estimator) - https://jane.biosemantics.org/
  - ▶ Clarivate Manuscript Matcher - https://mjl-clarivate-com.proxy1.library.jhu.edu/home
  - ▶ Elsevier Journal Finder - https://journalfinder.elsevier.com/

- ▶ Think, Check, Submit checklist - (https://thinkchecksubmit.org/journals/)

Predatory Journals & Publishers

► What are they?
  ► *"Predatory journals and publishers are entities that prioritize self-interest at the expense of scholarship and are characterized by false or misleading information, deviation from best editorial and publication practices, a lack of transparency, and/or the use of aggressive and indiscriminate solicitation practices."*
  (Grudniewicz, 2019)

► False/misleading information
  ► Fake impact factors, incorrect addresses, misrepresentation of editorial board

► Deviation from best editorial practice
  ► No retraction policy, requesting transfer of copyright when publishing an open access article

► Lack of transparency
  ► Failure to provide contact information, details about article processing charges, unable to verify details of editors/members of editorial board

► Aggressive, indiscriminate solicitation
  ► Repeated emails requesting submission, unsolicited requests for submission, journal's scope is outside author's area of expertise

Grudniewicz A, Moher D, Cobey KD, Bryson GL, Cukier S, Allen K, Ardern C, Balcom L, Barros T, Berger M, Ciro JB, Cugusi L, Donaldson MR, Egger M, Graham ID, Hodgkinson M, Khan KM, Mabizela M, Manca A, Milzow K, Mouton J, Muchenje M, Olijhoek T, Ommaya A, Patwardhan B, Poff D, Proulx L, Rodger M, Severin A, Strinzel M, Sylos-Labini M, Tamblyn R, van Niekerk M, Wicherts JM, Lalu MM. Predatory journals: no definition, no defence. Nature. 2019 Dec;576(7786):210-212. doi: 10.1038/d41586-019-03759-y. PMID: 31827288.

Additional Resources

Library Guides

Searching Guides

These guides offer:

▶ Strategies for improving your searching skills

▶ Guidance for collaborating and partnering with informationists

Scholarly Publishing and Open Access

These guides offers:

► Tools for deciding where to publish

► Tools for assessing journal quality

► Guidance on retaining your author rights

► Open access journals

Find Your Informationist

► **Personalized services to support your clinical work, research projects, and publications**

► **Provide one-on-one and small group instruction**

► **Consultations to discuss finding relevant data and literature for research and publications**

► **Collaborate on complex literature reviews such as systematic and scoping reviews.**

https://welch.jhmi.edu/about/informationists

44

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Get Help

https://welch.jhmi.edu/get-help

Research Guides

https://browse.welch.jhmi.edu/
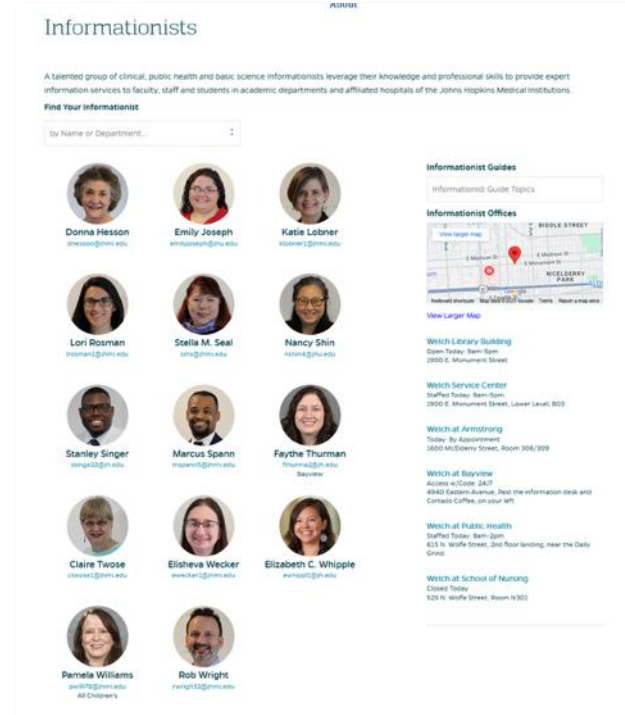
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