



**Northern Illinois  
University**

**Workshop simulation: Teaching graduate students how to  
read and critically consume systematic reviews**

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# Agenda



- **Introduction**
- What is a Systematic Review (SR)?
  - Learning goal: Differentiate a SR from other types of literature reviews and primary studies
- Assess a systematic review
  - Learning goal: Assess a systematic review for its team composition, research question, and search methods
- Conclusion: Workshop adaptation and reflection

# Activity 1: Introduction Questions

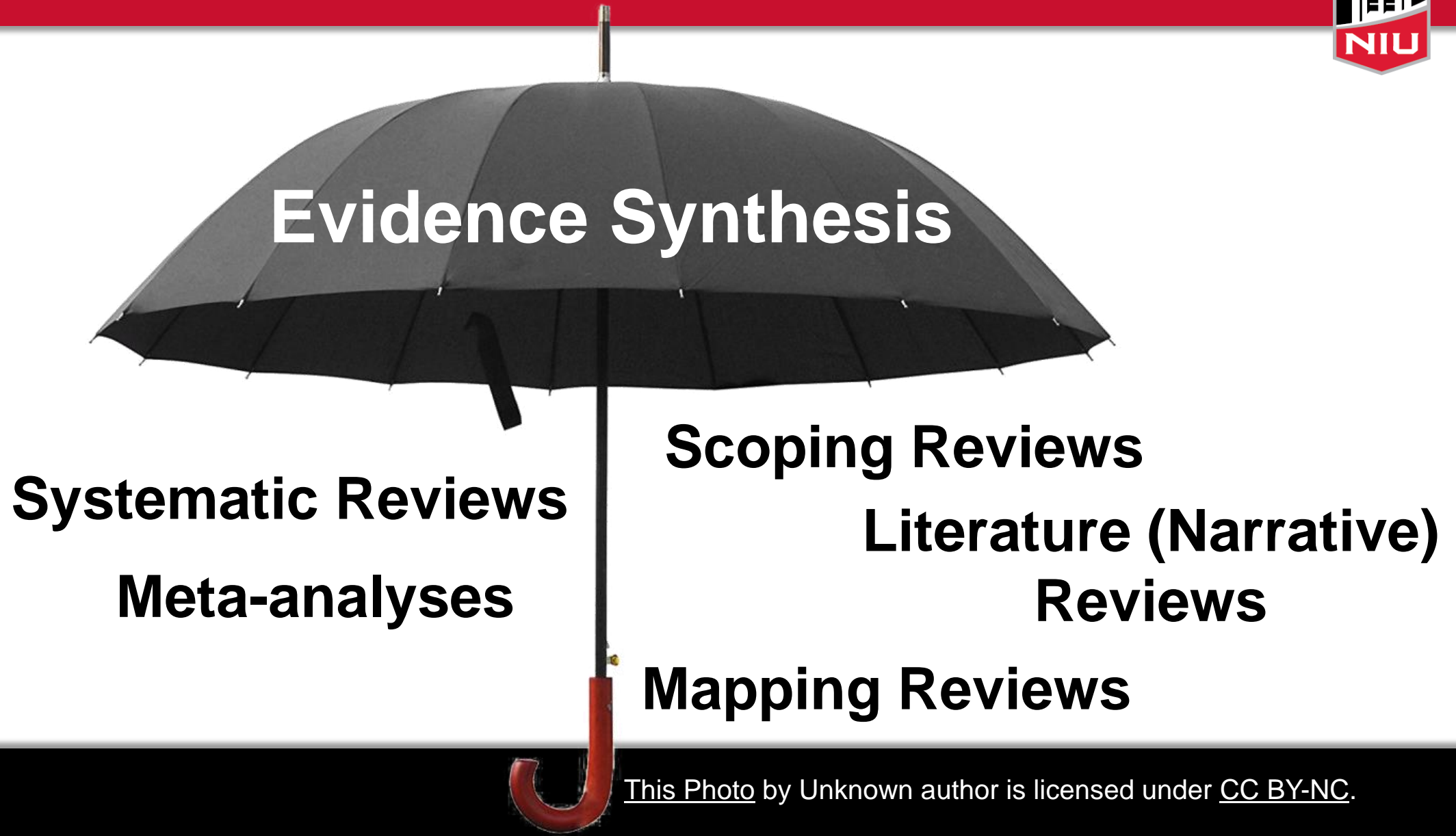


# Agenda Review



- Introduction
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# Other Types of Evidence Synthesis



# What is Evidence Synthesis?



- “Evidence synthesis’ refers to the **process of bringing together information from a range of sources and disciplines to inform debates and decisions on specific issues**. Decision-making and public debate are best served if policymakers have access to the best current evidence on an issue. An **accurate, concise and unbiased synthesis** of the evidence is therefore **one of the most valuable contributions the research community can offer policymakers.**”
- **Source:** The Royal Society. (2018, Sept. 19). Evidence synthesis. *The Royal Society*. <https://royalsociety.org/topics-policy/projects/evidence-synthesis/>

# Types of Evidence Synthesis



- **Literature review/narrative review:** Review literature without following structured processes
- **Systematized review:** Adapts some features of a systematic review, often student project
- **Scoping review:** Seeks to address a broader research question and/or identify gaps in research using evidence synthesis methodology
- **Systematic review:** Seeks to answer a well-defined research question using evidence synthesis methodology
- **Meta-analysis:** Uses statistical analysis and an evidence synthesis methodology to compare similar quantitative studies

**Source:** Grant, M. J., & Booth, A. (2009). A typology of reviews: An analysis of 14 review types and associated methodologies. *Health Information & Libraries Journal*, 26(2), 91–108.

# Types of Evidence Synthesis-SR



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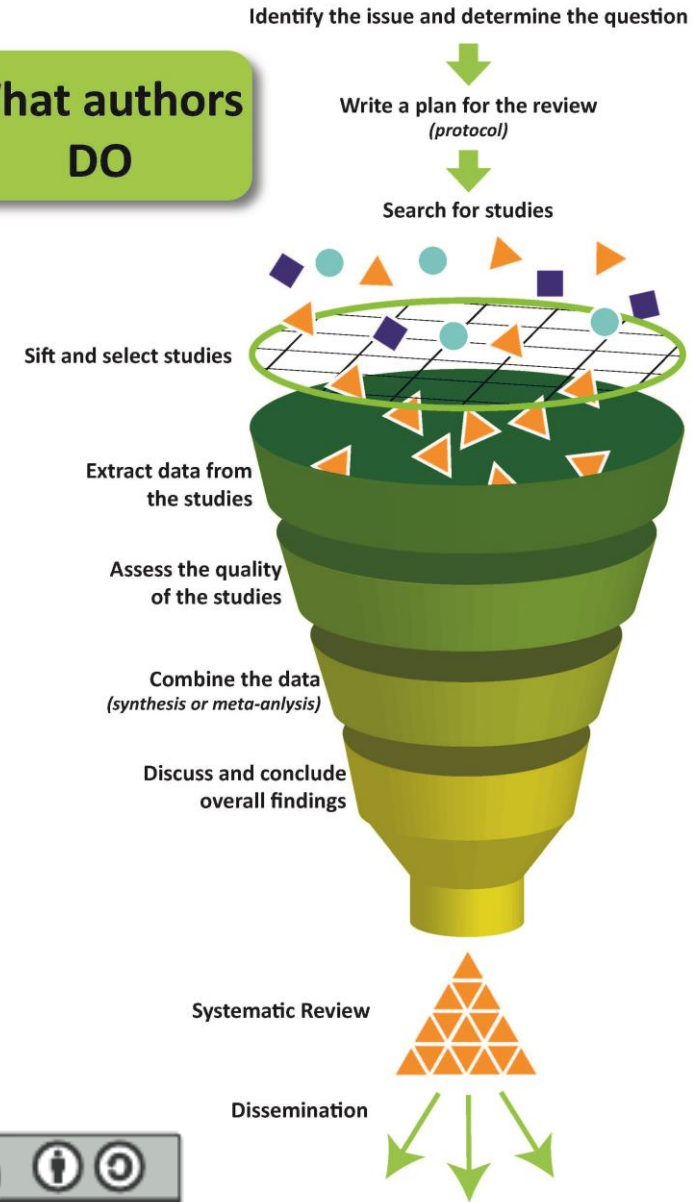


# Stages of a SR

1. Write a protocol (plan)
2. Search for studies
3. Screen studies for which ones you will use
4. Extract data from selected studies
5. Write up the report

Image Source: What authors DO. Designed by Jessica Kaufman, Cochrane Consumers & Communication Review Group, Centre for Health Communication & Participation, La Trobe University, 2011.

What authors  
DO



# Activity 2: Organization of a systematic review

# Agenda Review 2



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# Requirements for a SR



- **Protocol development (for planning the review)**
  - Why? Avoid duplicating work, reduce bias, may be required
  - Parts: Research question, eligibility criteria, search strategy
  - Register: PROSPERO, OSF, Cochrane, BMJ Open
- **Standards (for process of conducting the review)**
  - Why: The validity of the conclusion depends on its methodological validity
  - Examples: Cochrane, JBI, Centre for Reviews and Dissemination (CRD), Institute of Medicine, Campbell Collaboration
- **Reporting guidelines (checklist for write-up of review)**
  - Examples: PRISMA. Extensions include Abstracts, Diagnostic Test Accuracy, Equity, Harms, Meta-Analyses, Protocols, Scoping Reviews, Searching, and more
  - Find standards and reporting guidelines for your project on the Equator Network: <https://www.equator-network.org/>

# Requirements: Team Composition



## Expertise Needed

- Content expertise
- Systematic review methods expertise
- Searching expertise
- Statistical analysis (for some review types)
- Project management skills

## Roles

- Reference manager
- Document supplier
- Project manager
- Study screeners (2)
- Critical appraiser (2)
- Data extractor
- Report writer

# Requirements: Well-Scoped Research Topic



- Not too broad, not too narrow
- Topic should cover 5 W questions (who, what, when, where, and why)
- Are the inclusion/exclusion criteria clearly identified and based on the research topic?

# Requirements: Reproducible Search



## **Prepare to document your search** (see [PRISMA 2020 Flow Diagram](#))

- Search strategies (aim for sensitivity)
- Date of search
- All limiters or filters
- Databases and grey literature searched
- Number of results from each database
- Number of results after deduplication

## **Prepare to search**

- Translate searches from one database to other interfaces (see [Additional Search Tools](#))

**Resource:** Rethlefsen, M.L., Kirtley, S., Waffenschmidt, S. et al. PRISMA-S: an extension to the PRISMA Statement for Reporting Literature Searches in Systematic Reviews. *Syst Rev* 10, 39 (2021). <https://doi.org/10.1186/s13643-020-01542-z>

# Activity 3: Assess a systematic review



# Example Supplementary Table



**Table S3: Search strategies for Medline (Ovid)**

Database: Ovid MEDLINE(R) and Epub Ahead of Print, In-Process, In-Data-Review & Other Non-Indexed Citations and Daily <1946 to March 27, 2022>

#	Query	Results from 27 Mar 2022
1	inflammatory bowel diseases/ or <u>crohn</u> disease/ or ileitis/	66,764
2	<u>Crohn*</u> .tw,kf.	52,937
3	("Inflammatory bowel disease*" or IBD).tw,kf.	62,400
4	((regional* or terminal) adj3 ( <u>ileiti*</u> or enteritis or enterocolitis)).tw,kf.	2,176
5	1 or 2 or 3 or 4	103,901

**Source:** Cooper, J. L., Rosentreter, R. E., Filyk, A., Premji, Z. A., Shen, H., Ingram, R., Kaplan, G. G., Ma, C., Novak, K., Panaccione, R., Seow, C. H., Rieder, F., Raman, M., & Lu, C. (2023). Nutritional interventions in adult fibrostenotic Crohn's disease: A systematic review [Supplementary Material]. *Frontiers in Nutrition*, 10.

<https://doi.org/10.3389/fnut.2023.1017382>

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# Activity 4: Conclusion

# Questions? Send us an email!



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