Lecture 11
Bibliography management

Chao Song

College of Ecology
Lanzhou University

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Where to search literature?

- Search in citation index database
  - Web of science
  - Scopus

- Search engine tools designed for academic research
  - Google Scholar
  - Microsoft Academic Search
  - Crossref

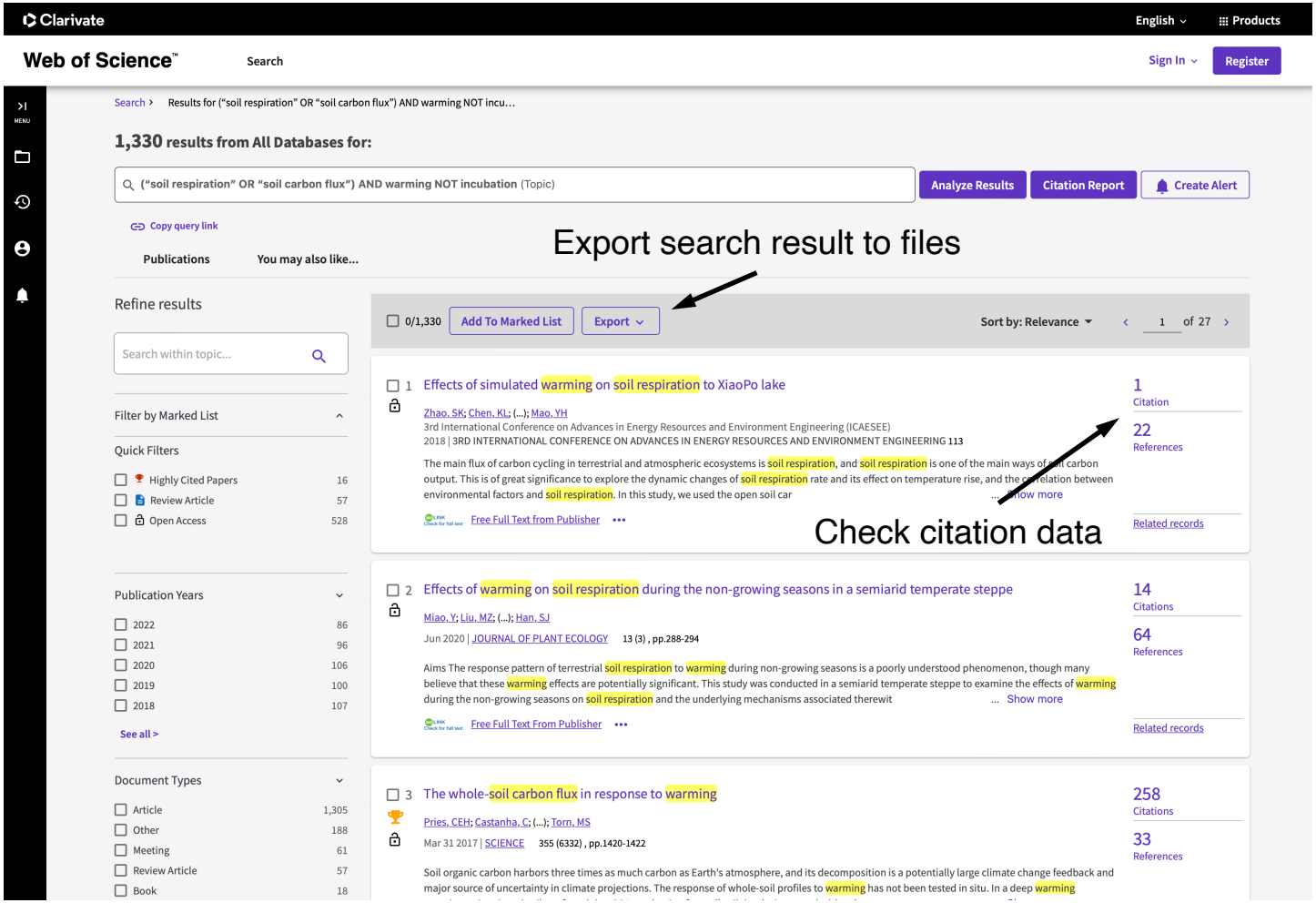
Search strategy

- Boolean operator: AND, OR, NOT
- Wildcard: use wildcard (*) in place of unspecified characters;
- Exact match: enclose phrase in quotation marks for exact match
- Parenthesis: use parenthesis to group conditions together.

- Example: (“soil respiration” OR “soil carbon flux”) AND warming NOT incubation will gives references that
  - contains the term “warming”
  - dontains the term “soil respiration” or “soil carbon flux”
  - do not contain the term “incubation”

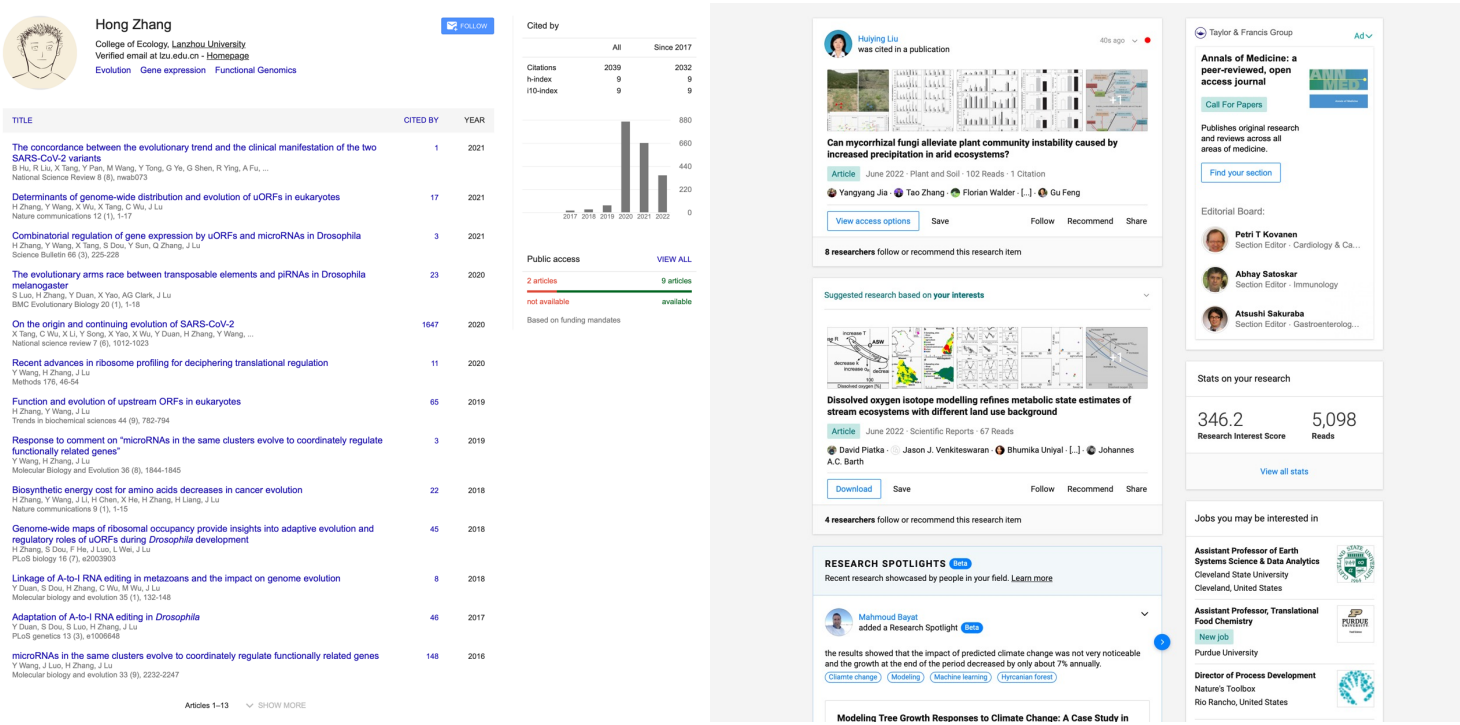
Where to search literature?

- Functionalities of Web of Science search



Search strategy

- Follow scientists with shared research interests
  - Google Scholar: useful for checking one scientists' complete publication records;
  - ResearchGate: social network like site useful for following scientists and research topics of interests;

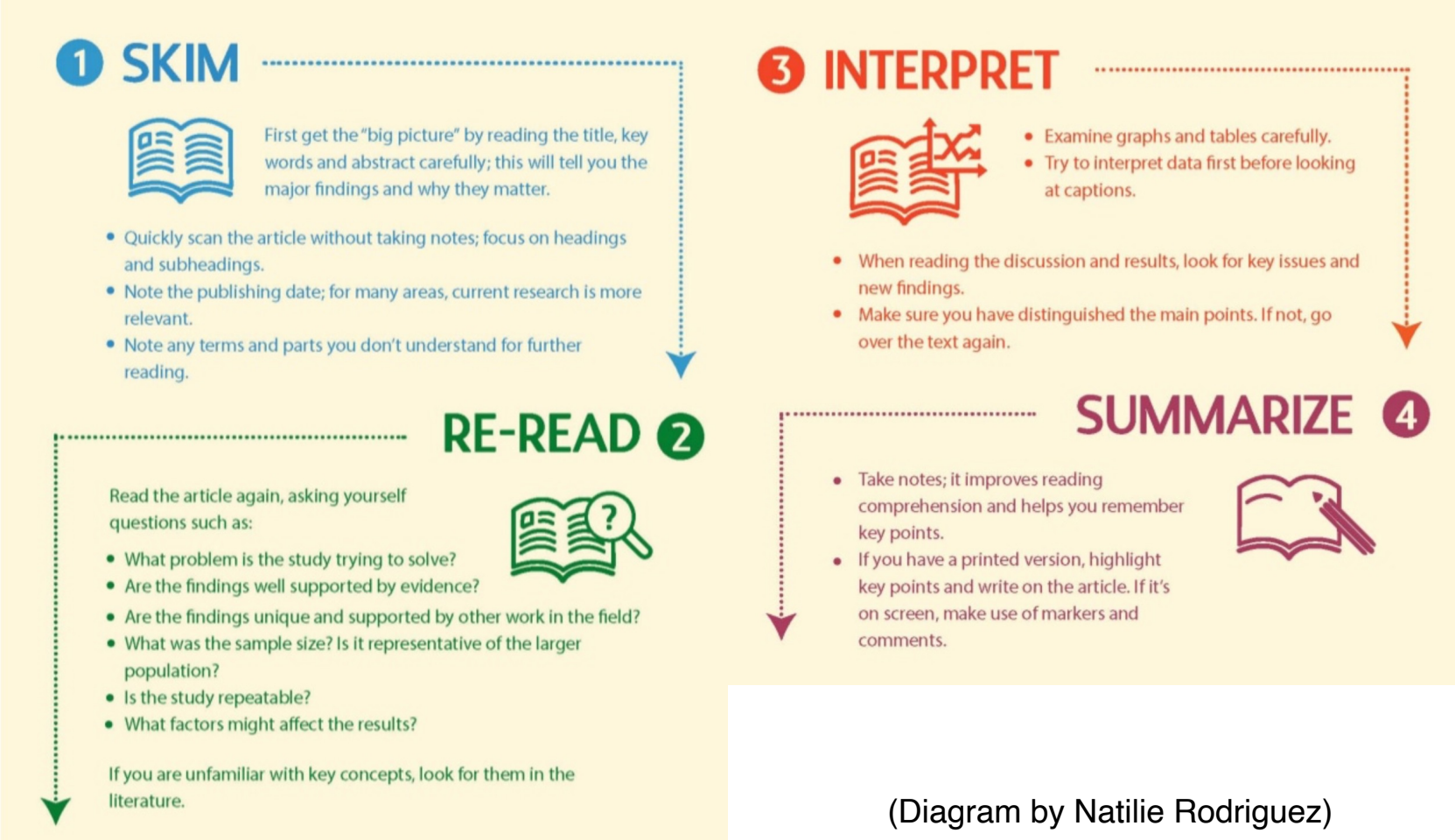


Read papers

- Purpose for reading a paper determines how you read it;
- **Quick reading**: useful for overviewing a topic of interests and stay up to data with the latest research front;
- **Deep reading**: useful for understanding a particular experiment, methods

Read papers

- A common strategy for deep reading a paper:



(Diagram by Natilie Rodriguez)

Recommendations on reading

- **Reading with a theme**: A common difficulty for beginning graduate student is forming a “big picture” of a research topic. Read relevant papers with a common theme help you gain a broad and general understanding of the topic;
- **Taking notes**: writing down useful information you came across in papers to form your own notes. Organizing them as assays centered around a topic is extremely useful when you writing papers;
- **Setting reading time**: reserve a few hours a week specifically for reading;
- **Organizing your literature**: organize the papers that you think are valuable to you. Having a personal library of relevant papers is handy when you need to revisit them or writing papers.

Proper citation

- Reference should support or be in accordance with the statement made by the citing author;
- Accurate citation is part of being a rigorous researcher;
- Citation allows the reader to trace the flow of evidence, serving as a gateway to relevant literature. Accurate citation ensures that your paper is useful to readers;
- Careful citation helps keep you from alienating those evaluating your paper.

Proper citation

- Inaccurate citation is a prevalent, but often overlooked, issue in scientific writing.

Table 4 Citation inaccuracies

Citation inaccuracies	Total, *n* (%)	Feasibility study, *n* (%)	Verification set, *n* (%)
Inaccurate citations, *n* (%)	688/7438 (9.2)	183/2,526 (7.2)	505/4,912 (10.3)
Articles with inaccurate citations, *n* (%)	620/4535 (13.7)	171/1,540 (11.1)	449/2,995 (15.0)
Type of citation error, *n* (%)*			
Citation of nonexistent finding	264 (38.4)	86 (47.0)	178 (35.2)
Inaccurate interpretation of findings	106 (15.4)	39 (21.3)	67 (13.3)
Inaccurately cited numerical data/results	114 (16.6)	16 (8.7)	98 (19.4)
Wrong context	41 (6.0)	15 (8.2)	26 (5.1)
Citation of quoted findings of another source	104 (15.1)	11 (6.0)	93 (18.4)
Inaccurately cited method	34 (4.9)	9 (4.9)	25 (4.9)
Citation of nonexistent numerical data/results	18 (2.6)	6 (3.3)	12 (2.4)
Reference listed in bibliography but not cited in the text	6 (0.9)	1 (0.5)	5 (1.0)

(Pavlovic et al 2021, Clinical Science)

Proper citation

- Inaccurate citation occur for many reasons. Chain of inaccurate citation seems to be a prominent one.

Table 5 Factors associated with inaccurate citations

Independent variable	Univariate			Multivariate		
	b	SE	*P*	b	SE	*P*
Review article	0.22	0.09	**0.023**	0.22	0.09	**0.022**
Time to citation (years)	0.19	0.08	**0.018**	0.23	0.08	**0.005**
Number of authors	−0.05	0.06	0.340			
Self-citation	0.08	0.14	0.548			
Impact factor, Yes	−0.26	0.13	**0.048**			
Citation style, Vancouver or mixed	−0.14	0.15	0.373			
Number of citations of source article, >1	0.59	0.09	**<0.001**	0.60	0.09	**<0.001**
Reference count	0.11	0.06	0.057			

Data were analyzed by multilevel regression models for binary data, with citation inaccuracy (yes vs. no) as the dependent variable.
b, regression coefficient; *P*, *P*-value; SE, standard error.

(Pavlovic et al 2021, Clinical Science)

Best practices for citation

- Read and understand a paper before citing it;
- Statements should be verified against original papers, not indirect sources;
- Cite original research instead of abstracts or narrative reviews
- When multiple supporting citations are available, cite more informative studies with stronger designs.

Reference management software

- Bibliography management software help you **organize references** and **format citation** in papers.
- Typical functionalities of reference management software:
  - Import citation information from database;
  - Organize papers in libraries or collections;
  - Store and annotate PDFs of the papers;
  - Synchronize papers to online storage space;
  - Produce formatted citation in a variety of styles;
  - Work with word processing software to facilitate in-text citation

Reference management software

- Bibliography information can often be imported directly from website, but manual curation is often needed for accuracy.
- Common caveats include:
  - incomplete page numbers
  - upper or lower case
  - text format in the title (e.g. species name, chemical formula)
  - journal name abbreviation (list of journal title abbreviation)

Common reference management software

- Many citation management software are available. They often share similar functionalities. Try them and choose one that works for you.
- Some common reference management software:
  - Endnote
  - Mendeley
  - Zotero
  - Refworks
  - JabRef
  - Bibdesk
  - NoteExpress