Chemistry 2281G
Library Session

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Agenda

• Library Website Overview
• Scholarly Literature
• Search Strategy
• Citing and Writing
Library Website Overview

• Chat Reference Service

• Getting Started
  – Research Guides: Chemistry; CHEM 2281
  – Citing & Writing
  – Videos & How-Tos
Scholarly Literature
Grey Literature: lab notes, patents, conference papers, technical reports
Scholarly Literature

Books

• Proceedings Volumes (based on conferences; original research or literature reviews)
• Monographs (a single topic in detail)
• Handbooks
• Encyclopaedias

Journals

• Articles
• Reviews (A guide to the original literature)
• Notes
• Communications (AKA: letter/correspondence)
Popular vs. Scholarly Literature

Group Exercise (5 min):

You will be given two types of publications: scholarly journals, and popular (or trade) magazines. Identify (and write down) the main differences between them. Share with the class.
<table>
<thead>
<tr>
<th></th>
<th>Journal - Scholarly</th>
<th>Magazine – Popular</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Content</strong></td>
<td>contain original research data</td>
<td>cover a wide range of popular interest topics, maybe with personal opinions and anecdotes</td>
</tr>
<tr>
<td><strong>Author</strong></td>
<td>a scholar with subject expertise</td>
<td>general public; an interested non-specialist</td>
</tr>
<tr>
<td><strong>Audience</strong></td>
<td>scholars, researchers, students</td>
<td>general public</td>
</tr>
<tr>
<td><strong>Language</strong></td>
<td>complex with specialized terminology</td>
<td>understandable to most readers</td>
</tr>
<tr>
<td><strong>Reference</strong></td>
<td>further research sources are cited</td>
<td>does not usually contain bibliographies</td>
</tr>
</tbody>
</table>

**Western Libraries**
Scholarly Journal Articles

- on a very specific topic
- well-organized (in sections): abstract, introduction, methods, results, discussion, conclusion, etc. Example
- many are peer-reviewed
Scholarly Journals
Peer-review Process

What is it? How does it work?

Online Tutorial
https://youtu.be/MLGp7LC2Nbw
How to recognize a peer-reviewed journal

✓ Judge by looking

✓ Consult *Ulrich’s Periodicals Directory*

Quick exercise: Type your journal titles into Ulrich’s Periodical Directory. Are they refereed?
Background Information

• Where is it?
• How do you find it?
**Background Information**

Helps build up your knowledge base of a topic
With references to the existing literature

**Source types:**
- Monographs/Books
- Encyclopaedias
  *quick overviews of fields*
- Handbooks/Manuals
  *chemical properties, experimental procedures, safety information...*
- Review articles *

**Search tools:**
- Library catalogue
- Research guides
- Databases (review articles)
Background Information: OMNI

• Title
• Keyword
• Subject
• Request an Item
• Recommend a Purchase

Demo
Background Information: CRCnetBASE

- E-books in science, technology, engineering, medicine, humanities, and social science
- Browse by Subjects
  - e.g. Physical Sciences
    - ✔ Chemistry

* Check the box: “Show content I have access to”
- Advanced Search
Background Information: Other sources demo

• **Encyclopedia:** A quick overview of a field (e.g., Kirk-Othmer)

• **Handbook:** Chemical Properties, experimental procedures, safety information, etc. (e.g. CRC handbook of chemistry and physics – online version, 2 concurrent user seats; print version on reference collections stack)
Review Articles

• Background information sources
• Written by subject experts
• Evaluating findings from published literature
• Summarizing the current state of understanding and research progress on a topic
• A guide to the original literature
Break
Primary Information

• Where is it?
• How do you find it?
Primary Information

Published results of original research - current and retrospective in an area

Source types:
- Journal articles
- Patents
- Conference papers
- Dissertations & theses

Search tools:
- Databases
- Library catalogue*
  (when know citation)

*Tip: Finding journal articles or conference papers*

Citation information - use OMNI > journal title search>browse volume/issue. Topic/keywords - use databases > keyword search.

*Note:*

If you need to browse an e-journal, and the link in OMNI is broken given the new launch of the system, please use the E-Journal site
Your Turn! (5 min)

• Do we have this article in the library? What is its document type? Is it a primary source?


*Full journal title: Journal of the American Chemical Society*
Primary Information Resources

Use databases to find primary information sources for your research topic

– Multidisciplinary Databases:
  • Web of Science
  • Scopus
– SciFinder (Chemistry)
– Dissertations & Theses (ProQuest)
– Patent databases (tab on Chemistry Research Guide)

...
Search Strategy
Designing Search Strategies

1. Define research topic
2. Break down the topic into concepts
3. Identify keywords for each concept
4. Use Boolean operators to connect keywords
5. Conduct searches in databases
6. Review results, modify if necessary
Example RQ

The application of zeolites to the treatment of wastewater
Search Strategy

Identify the main concepts

*The application of zeolites to the treatment of wastewater*

Concept #1: zeolites
Concept #2: treatment
Concept #3: wastewater
Search Strategy

Identify keywords (synonyms and related terms)

Tip: conduct an initial search, look at the results, identify keywords
Search Terms

Be creative

– Variant spellings (e.g. British vs. American)
– Synonyms and closely related terms
– Singular and plural forms
– Truncation of terms
– Scientific and common names
Search Terms

Use asterisk (*) or quotation marks (" ") if necessary

– Truncation of terms
  e.g. zeolite* - zeolite, zeolites
  transform* - transform, transformed, transformation

– Phrase search
  e.g. “molecular sieves” “global warming”
Sample Search Terms

- zeolite
- zeolites
- molecular sieves
- treatment
- purification
- purify
- adsorption
- wastewater
- waste water
- polluted water
Search Strategy

Connect keywords using Boolean operators

AND is demanding

zeolite

treatment

wastewater

OR gets you more

“waste water”

wastewater

“polluted water”
Sample Search Terms

- zeolite
  OR
- zeolites
  OR
- molecular sieves

AND

- treatment
  OR
- purification
  OR
- purify
  OR
- adsorption

AND

- wastewater
  OR
- (waste water)
  OR
- (polluted water)
Sample Search Terms

- zeolite*
- "molecular sieves"
  OR
- treat*
- purif*
- adsorption

AND

- wastewater
- "waste water"
- "polluted water"
Search String

zeolite* OR “molecular sieves”
AND
treat* OR purif* OR adsorption
AND
wastewater OR “waste water” OR “polluted water”
Search Strategy

• Run searches in relevant databases

• Review & Analyse search results
  – Too few: fewer concepts? broader terms?
  – Too many: more concepts? narrower terms?

• Revise search strategy as necessary
Demo & Hands-on

• Web of Science
• Scopus

*Using the Search Strategy Worksheet
Citing and Writing
Citing your references in the text: Why?

• to show you are aware of past research
• to help support your arguments
• to be clear about your own intellectual work
• to provide access to original sources
• to avoid plagiarism
• to help others learn
Citing your references in the text: What?

• The sources for any:
  – process
  – background material
  – numbers or data
  – tables or graphs
Direct Quotations

• If using the exact words of an author, and not paraphrasing, you must use a direct quote.

• Use quotation marks “ ”
Paraphrasing

• If you are using your own words to describe someone else’s idea, you MUST cite it.
• Cite everything you paraphrase
For More Information ...

• Library Home → Research → Citing and Writing → Plagiarism (tutorial)

• You can also get to the tutorial page using the link on the CHEM 2281G library session guide.
ACS Citation Style

- Tips

• Finding Journal abbreviation/full title by CASSI or Journal Citation Reports (links are on Chem2281 Library Guide)

  e.g., for: Journal of Polymer Science, Part A: Polymer Science

• Refer to the Chemistry program guide for citation style guides (accessible via the left side navigation panel)

• A quick guide on ACS style guidelines by UW-Madison Libraries

• Library guide for citing and writing
Library assignment

• Get a copy before leaving
• Due at your next regular lab session (one week from now)
• Your TAs will grade the assignment
Need Help?

Chat, Text, Email, Phone, In-person,
https://www.lib.uwo.ca/contact/index.html

OR

Contact Shiyi Xie, Associate Librarian, Teaching & Learning & STEM Disciplinary Coordinator
shiyi.xie@uwo.ca
References

