

# Literature Databases and Reference Management

Biochemistry Boot Camp 2023

Session #13

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# Scientific Literature

- Scholarly publications that report original empirical and theoretical work in the natural and social sciences, and within an academic field
- Often abbreviated as “the literature”
- **Primary Literature:** Original research articles, contain original data, methods, interpretation, analysis
- **Secondary Literature:** Review articles, contain analysis, interpretation, but also can contain opinion and perspective, generally no original data

# Types of Literature

- Primary research articles
- Review articles
- Editorials/Opinion/Commentary/Perspectives
- Trade publication articles
- News/Blog posts
- Technical Reports
- Field Trip guides
- Conference proceedings
- Books
- Dissertations/Thesis

# Literature Search: PubMed

- This is the nation's main portal for searching publications in all biomedical and related fields.
- It is free, funded by the US Government through NCBI.
- Many records are cataloged back to 1966, but some go as far back as the 1800s. All new medical research is added to PubMed shortly after publication.
- PubMed has a unique system for refining searches; for example:

Smith\_J [auth] AND Jones\_D [auth] AND 1997 [dp]

- This query will search for articles published by J. Smith and D. Jones in the year 1997.
- <https://www.ncbi.nlm.nih.gov/pubmed/>

# Literature Search: Scopus

- Scopus is a subscription-based citation indexing service.
- MSU is a subscriber, but you must be on campus (or connected via VPN) to use Scopus.
- It is focused on a broader range of topics than PubMed, which just focuses on biomedical journals.
- Scopus indexes not only the publications themselves, but also the all of the cited articles in a given publication.
- This makes it possible to view a list of papers that have cited a paper of interest.
- <https://www.scopus.com/home.uri>

# Literature Search: SciFinder

- SciFinder is a literature database maintained by the Chemical Abstracts Service (CAS) of the American Chemical Society.
- While it includes biochemistry topics, it also includes all other divisions of chemistry.
- Its strength is the ability to search chemical compounds and reactions and link them with publications.
- MSU has access, but you must first create an account at <https://guides.library.msstate.edu/scifinder>.
- <https://accounts.cas.org/products/>

# Literature Search: Google Scholar

- Google Scholar is a free service for searching citations and text of a broad arrange of articles.
- It can be very useful, especially for finding old literature not covered in other databases; however, the results can be inconsistent or incomplete.
- The results it gives will not be inaccurate, and it may find full-text articles that you may not be able to locate otherwise.
- Currently, though, it is recommended to use the other search engines listed above while Google Scholar matures.
- <https://scholar.google.com/>

# Tips for Searching the Literature

- Start with a review
- Science is a web
- Citations count
- Look at the reference list
- Don't be an age discriminator
- Ask for help
- Subscribe!



# Start with a Review

- Review articles contain a summary of the research in a given field.
- They usually do not contain new experiments, but they can help you understand how the field is currently thinking about a topic.
- Review articles generally cite more research-centric papers, and these are often important papers in the field, so be sure to look at the list of references, too.
- In PubMed, you can often find review articles simply by adding “review” in the search field.

# Science is a Web

- An easy way to review the newest research is to find an informative article and see what papers have cited that article.
- Scopus and Web of Science let you search “up” to find newer research, so it’s possible to find work published today by starting from a 10- year old paper.

# Citations Count

- Generally, important papers will be cited more frequently.
- Sorting by the number of times a paper is cited will allow you to find high-impact publications (Scopus)
- But watch out: often times these papers are review articles, which may not contain original research.

# Look at the Reference List

- Even if the results of a paper aren't relevant to your work, the introduction may contain an invaluable discussion of important points.
- And the list of references may give you a starting point for creating your own literature review.

# Don't be an Age Discriminator

- Often the most important work in the field was performed many years ago.
- Don't shy away from work published in the 1950's, 1960's, or even earlier, particularly if it is highly cited.
- At the same time, remember that online databases may not cover the earliest dates, and you may need to venture to the library (or use Google/Wikipedia) to see if you're missing a critical history.

# Ask for Help

- Your research adviser, the reference librarian, and other researchers in the field have been where you are now.
- Ask them how they find good papers, and see if they have advice on what you should read.

# Subscribe!

- Many journals offer a free table of contents service that you can subscribe to via email.
- This lets you see the most current articles as they are published.
- While you don't want to be overwhelmed, if there is a particularly relevant journal, it may be worth subscribing to their eTOC service.

# RSS Feed



- **Really Simple Syndication**
- An easy way to keep up with websites without having to constantly visit them.
- When a website is updated, that site's newsfeed can notify you and give you a link to the new content.
- For journals: Create an RSS feed for a search on Pubmed, then check it as new articles are published
  - No longer possible with Scopus ☹️



# Feedly

- Compiles news feeds from a variety of online sources for the user to customize
- Can use for journal searches, news articles, or any website update that supports RSS

– <https://feedly.com/>



# Using Feedly

- Create an account (easiest to link with google)
- You can add categories
- Adding a website of your interest (just paste RSS link from PubMed search)

# Reference Management Software

- **EndNote:** Oldest, most established, powerful, but expensive (~\$130 for student version)
  - Desktop app with some online support
- **Mendeley:** Combination of browser add-in and Word plugin, syncs and retrieves entries from an online database (free, closed source)
  - Very lightweight (just plugins), but all data is on cloud
  - “Mendeley Desktop” app no longer under development – the new app appears to be less functional
- **Zotero:** Similar in design/spirit to EndNote, but open source and free
  - User interface is a little clunky

# Legacy EndNote Slides

- I'm not convinced Mendeley or Zotero are better options for reference management
- Sometimes professionals require professional-level software (and must pay up!)
- Most complaints about EndNote stem from not understanding how it works, or expecting it to do everything automatically
  - No software can do that, but EndNote at least makes it possible to automate most things
  - The complaints about EndNote's price are legitimate; your university may have a better pricing agreement than we do

# Access Mendeley

- Create an account at (same as Elsevier account):  
<https://www.mendeley.com/>
- Download the web plugin (“Mendeley Web Importer”):  
<https://www.mendeley.com/reference-management/web-importer>
- Download the Word add-in (“Mendeley Cite”):  
<https://www.mendeley.com/reference-management/mendeley-cite>
- Optionally, download the Desktop app (“Mendeley Reference Manager,” essentially the same as the Web App):  
<https://www.mendeley.com/download-reference-manager/>

# Legacy EndNote Slides

- The following slides are from prior iterations of this workshop and focus on EndNote; they are included for your reference
- We will demonstrate Mendeley today

# EndNote

- EndNote is a software program that works with Microsoft Word to automatically format in-text citations and end-of-paper reference lists with your chosen style (APA, MLA, Chicago, etc.).
- EndNote can also be used as a personal database to gather and store citation records from different information sources.
- **Tip:** Start using EndNote early in your research career to catalog every paper you read
  - Build a well-curated master library, then excerpt reference entries for each paper you write

# Advantages of EndNote

- Automatically insert well formatted citations into your paper
- Automatically reformat citation style in one click
- Tag citations with your own keywords
- Search live within your EndNote library (including multiple PDFs: not currently possible with Mendeley!)
- Sort your library by author, title, or date.



# Creating an EndNote Library

- Open EndNote
- Go to File → New
- Name your library

# Manual Data Entry:

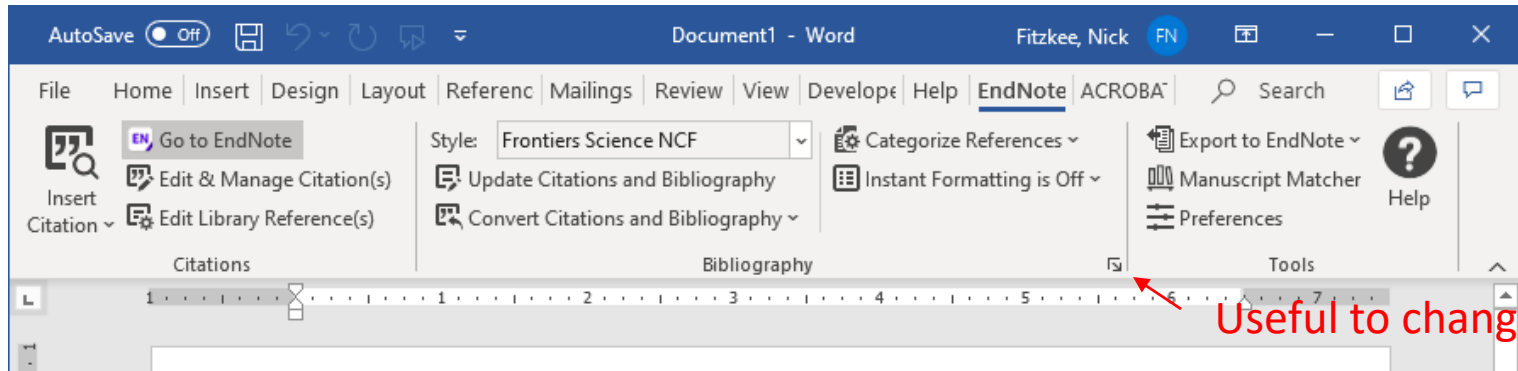
## Adding a Reference

- At the top of the screen, go to References -  
> New Reference
- Select the correct Reference Type
- Enter the citation data
- EndNote will automatically save on closing

# Export from Web Page

- Most journal websites, along with Pubmed and Scopus, allow you to perform “direct export” references into EndNote
- Direct export from the journal site is preferred: saves time and captures the most detail (author full names, special characters, some formatting in title, etc.)
  - May be hidden, look for “share” or “citation”
- Direct export from Pubmed/Scopus is okay, but you may miss full names, García → Garcia, etc.
- **Example:** Exporting references into EndNote from JACS and PubMed

# EndNote with Microsoft Word




- EndNote tab contains all tools:
  - **Style:** Output style that will be used for bibliography
  - **Update citations:** Find reference plain text (e.g. “{Smith, 2019 #12}” and convert to a formatted reference (e.g. “(Smith, 2019)”)
  - **Convert Citations:** Allows you to convert formatted references back to plain text or create a “markup free” document (important later!)
  - **Popout button:** Can change font of bibliography and title of bibliography (hidden feature!)

# References in Word

- EndNote can store references in a Word document as
  - Plain text (unformatted): {Smith, 2019 #41}
  - Formatted reference (with hidden markup): <sup>12</sup> or (Smith, 2019)
- The curly brace tells EndNote this is a reference, the author and year are used to help identify references, and the “#41” is the internal reference ID # in that library
  - Sometimes EndNote gets confused, especially if multiple last names or if the library is switched, ID # keeps things sane
- When sharing files, always use unformatted references
  - You won't need to constantly share EndNote library
  - Formatted references sometimes screw up undo, track changes
  - Start formatting references at the end of writing

# Inserting References

- Click “Insert Reference” in EndNote ribbon, start typing to find reference
- Select reference in EndNote window and select “Insert Citation” ()
- **Easiest:** Drag citation into your word document

# Placement of the References

- Depending on the target journal style you have to place the reference before or after the period/punctuation
- Example #1: “... end {Smith, 2019 #293}.” Becomes:
  - ... end <sup>1</sup>. (not correct) or
  - ... end (Smith, 2019). (correct)
- Example #2: “end.{Smith, 2019 #293}” Becomes:
  - ... end.<sup>1</sup> (correct) or
  - ... end.(Smith, 2019) (not correct)
- Using find and replace you can move the reference relative to the period, but it’s not always easy and may require some manual changes!
  - Think about where you would like to submit before you decide to place the reference and whether there should be a space between punctuation

# Multiple References

- Multiple references can be entered in a single unformatted block as a multiple blocks without spaces
- Entering {Smith, 2012 #291; Ye, 2018 #292; Lopez, 2019 #318} or {Smith, 2012 #291}{Ye, 2018 #292}{Lopez, 2019 #318} will become (depending on style):
  - ... end (Smith, 2012; Ye, 2018; Lopez, 2019).
  - ... end.<sup>19-21</sup>
- But a space will screw you up! {Smith, 2012 #291} {Ye, 2018 #292} {Lopez, 2019 #318} will become:
  - ... end (Smith, 2012) (Ye, 2018) (Lopez, 2019).
  - ... end.<sup>19 20 21</sup>



# When You're Finished: Create the Bibliography

- Clicking “Update Citations and Bibliography” will search for unformatted citations and replace them with the selected style
- It will also insert the bibliography at the end of your document
- Clicking citation will take you to the reference (an example of under-the-hood markup)
- **Beware:** Any open EndNote library will be searched!
  - If you have your master library and a library for that document open, close all libraries except the library for the document

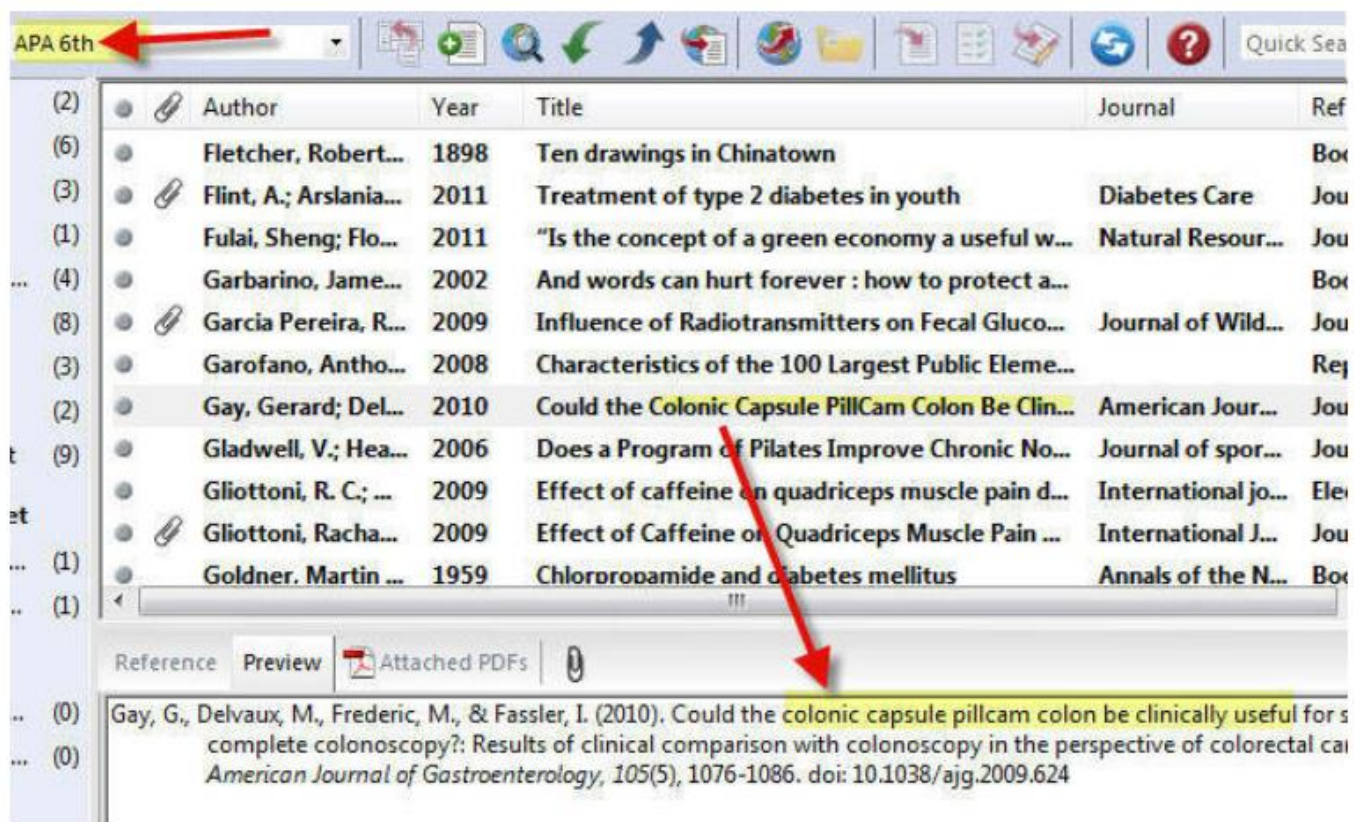
# When You're Finished: Removing Markup

- Some journals don't want any EndNote markup/clickable links present in your document (e.g. ACS journals)
- A document with no markup can be created using "Convert to Plain Text"
  - Just as if you'd typed citations and bibliography manually
  - A new file is created, so you can keep your original file with EndNote markup
- Make sure everything is perfect: The new file has absolutely no reference to EndNote or your library!
  - **Pro Tip:** Make a "no endnote" version of your final draft for distribution and publication, keep the "EndNote" version if you need to revise

# Advanced EndNote Topics

- Controlling title capitalization using styles and ENCase
- Journal title abbreviations and Term Lists
- Controlling Author names
- Bibliography entries and importing styles
- Sharing EndNote libraries

# Fixing Capitalization of Titles using Capitalization Preferences



The screenshot displays the EndNote interface. At the top left, a dropdown menu is set to 'APA 6th', indicated by a red arrow. Below this is a list of references in a table format. The reference by Gay, G., Delvaux, M., Frederic, M., & Fassler, I. (2010) is highlighted in yellow. A second red arrow points to the 'Capitalization' preference setting in the 'Reference' tab at the bottom of the window.

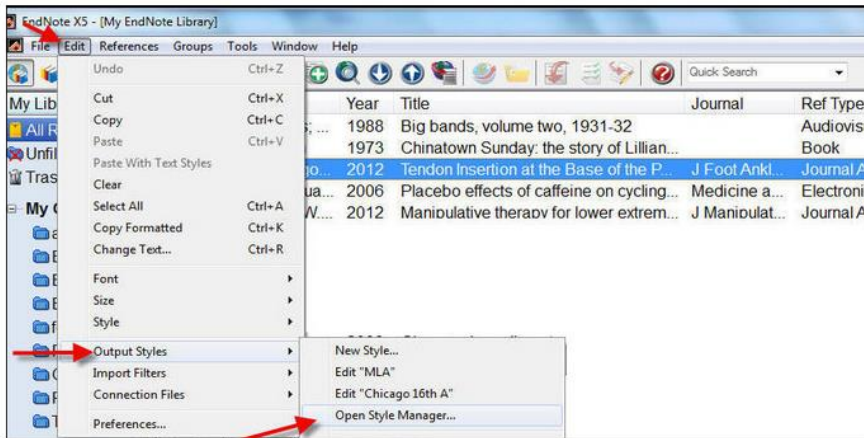
(2)	Author	Year	Title	Journal	Ref
(6)	Fletcher, Robert...	1898	Ten drawings in Chinatown		Box
(3)	Flint, A.; Arslania...	2011	Treatment of type 2 diabetes in youth	Diabetes Care	Jou
(1)	Fulai, Sheng; Flo...	2011	"Is the concept of a green economy a useful w...	Natural Resour...	Jou
(4)	Garbarino, Jame...	2002	And words can hurt forever : how to protect a...		Box
(8)	Garcia Pereira, R...	2009	Influence of Radiotransmitters on Fecal Gluco...	Journal of Wild...	Jou
(3)	Garofano, Antho...	2008	Characteristics of the 100 Largest Public Eleme...		Req
(2)	Gay, Gerard; Del...	2010	Could the Colonic Capsule PillCam Colon Be Clin...	American Jour...	Jou
(9)	Gladwell, V.; Hea...	2006	Does a Program of Pilates Improve Chronic No...	Journal of spor...	Jou
	Gliottoni, R. C.; ...	2009	Effect of caffeine on quadriceps muscle pain d...	International jo...	Ele
	Gliottoni, Racha...	2009	Effect of Caffeine on Quadriceps Muscle Pain ...	International J...	Jou
(1)	Goldner, Martin ...	1959	Chlorpropamide and diabetes mellitus	Annals of the N...	Box

Reference Preview Attached PDFs

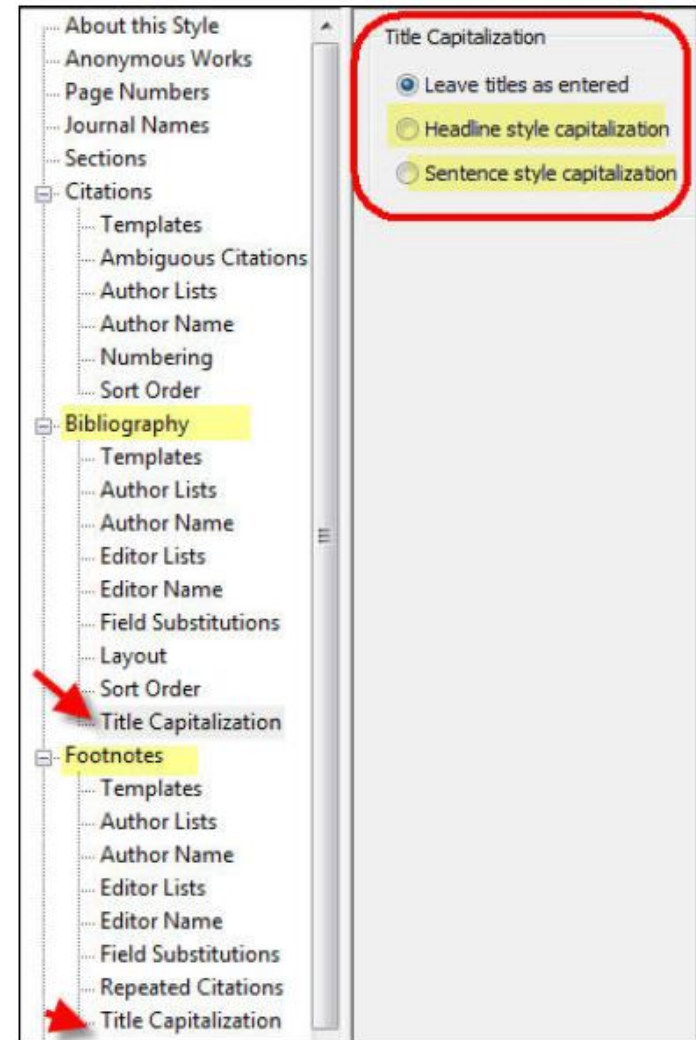
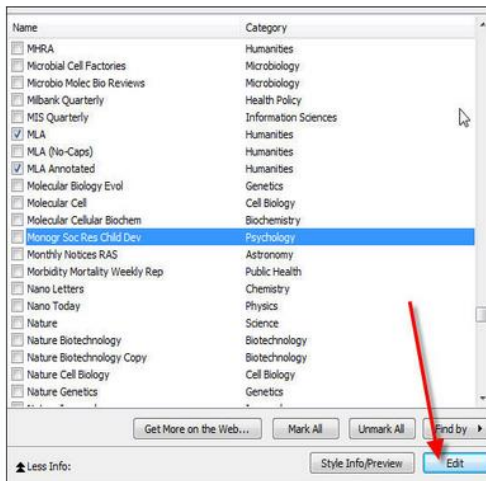
Gay, G., Delvaux, M., Frederic, M., & Fassler, I. (2010). Could the colonic capsule pillcam colon be clinically useful for complete colonoscopy?: Results of clinical comparison with colonoscopy in the perspective of colorectal ca  
*American Journal of Gastroenterology*, 105(5), 1076-1086. doi: 10.1038/ajg.2009.624

# Fixing Capitalization of Titles using Capitalization Preferences

1. Select **Edit**
2. Select **Output Styles**
3. Select **Open Style Manager**



4. Highlight the Style you wish to edit and select edit:



# Using the ENCase file to Fix Capitalization

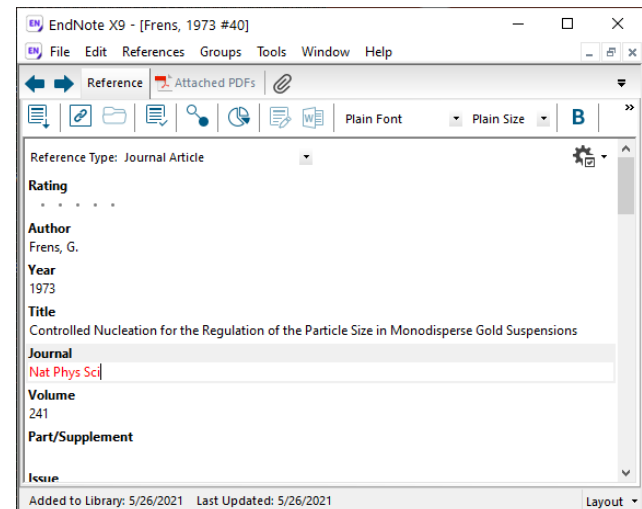
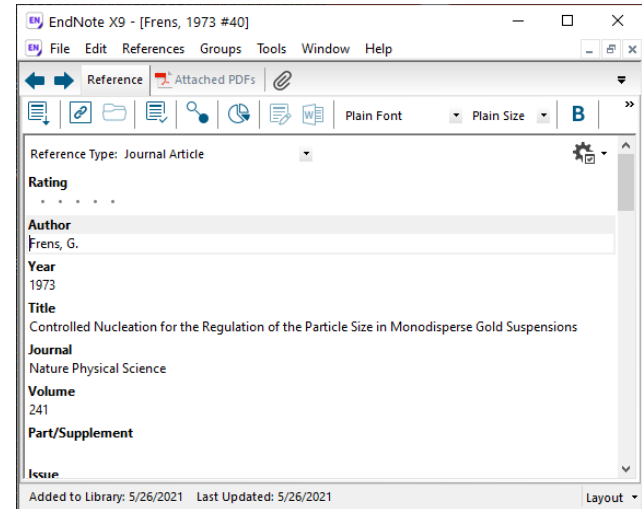
- EndNote keeps a list of words where case should not be altered
  - Examples: NMR, 13C, Escherichia, coli
- This can prevent terms like “Nmr” or “<sup>13</sup>c” from showing up in titles when headline/sentence capitalization is selected
  - It saves you time *not* to have to re-type titles all the time!
- ENCase entries can be added manually (Edit → Preferences → Change Case)
- All data is stored in a textfile, which can be shared (on Windows, %appdata%\EndNote\ENCase.txt)
  - Download example **ENCase.txt** from the Bootcamp website!

# Term Lists: Managing Journal Abbreviations

- **Idea:** Some journals want full journal titles in citation list (*Journal of the American Chemical Society*), otherwas want abbreviations (*JACS*)
- EndNote uses Term Lists to relate full journal name to abbreviations, either with periods (J. Phys. Chem. B) or without (J Phys Chem B)
- **Time saver:** All journal names in your EndNote library should be complete, then use term list to convert to the appropriate format as needed
  - Example: Proceedings of the National Academy of Sciences, USA

# Term List Tricks

- Sorting articles by journal name is an easy way to find articles in your library that are already abbreviated
- Articles that are not in your term list will appear in red





# Editing a Term List

(Library Specific – Must Be Done for Each Library)

## Edit the Journal Term List

- Tools → Open Term Lists → Journal Terms List
  - This will allow you to edit terms; select a journal and click “Edit Term...”
  - Journals with no abbreviation will not be changed
  - **Convention:** Abbreviation 1 has periods, Abbreviation 2 does not

## Importing a Term List

- Tools → Define Term Lists, Select “Journals”
  - Click on “Import List” to read a new list
  - Browse to the Term Lists folder within the EndNote folder
  - Choose the “default” list to import: Typical medical or chemistry
- **Alternative:** Download [fitzkee\\_term\\_list.txt](#) from the Bootcamp Website and import that! (curated over the years)

# Applying Term Lists in Your Output Style

## Modify The Output Style to Use Abbreviated Journal Name

- Edit → Output Styles → Open Style Manager
- In the list of styles, highlight the style you are using and click the "Edit" button
- Click on "Journal Names" on the left
- Select appropriate:
  - Full Name uses the full journal name (assumes each entry already has the full journal name in your library) → EndNote is not psychic!
  - Abbreviation 1 or Abbreviation 2 uses abbreviation with (or without) periods → Different journals require one or the other
  - Abbreviation 3 generally unused

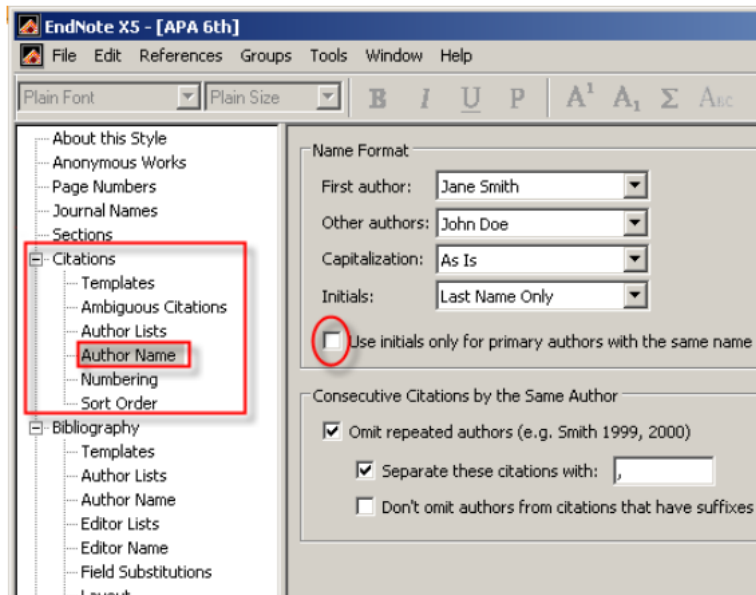
# Other Style Tricks: Author Names

- Open **EndNote**
- Go to **Edit > Output Styles > Open Style Manager**
- Select the **style** you want to **edit**. You may need to add a style to EndNote (see the **Downloading output styles into EndNote** box to the left).
- Click **Edit**. The style window opens.

To change how in-text citations appear:

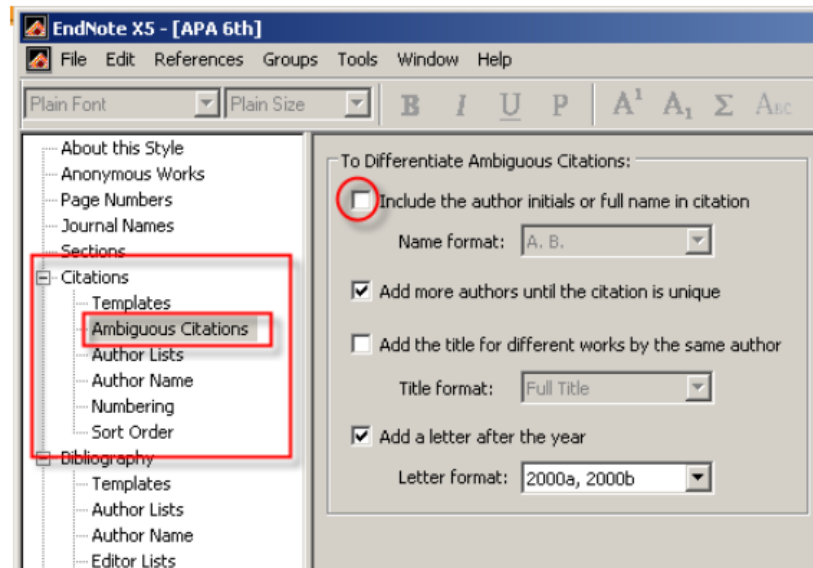
1. **Left menu > Citations > choose the aspect you want to change**


**Example:** When using EndNote's APA 6th output style the author's initials will appear in in-text citations for those authors with the same surname but different initials. To prevent this from happening:



# Other Style Tricks: Author Names

- Open the style window as outlined above.
- **Left menu > Citations > Author Name > untick** Use initials only for primary authors with the same name



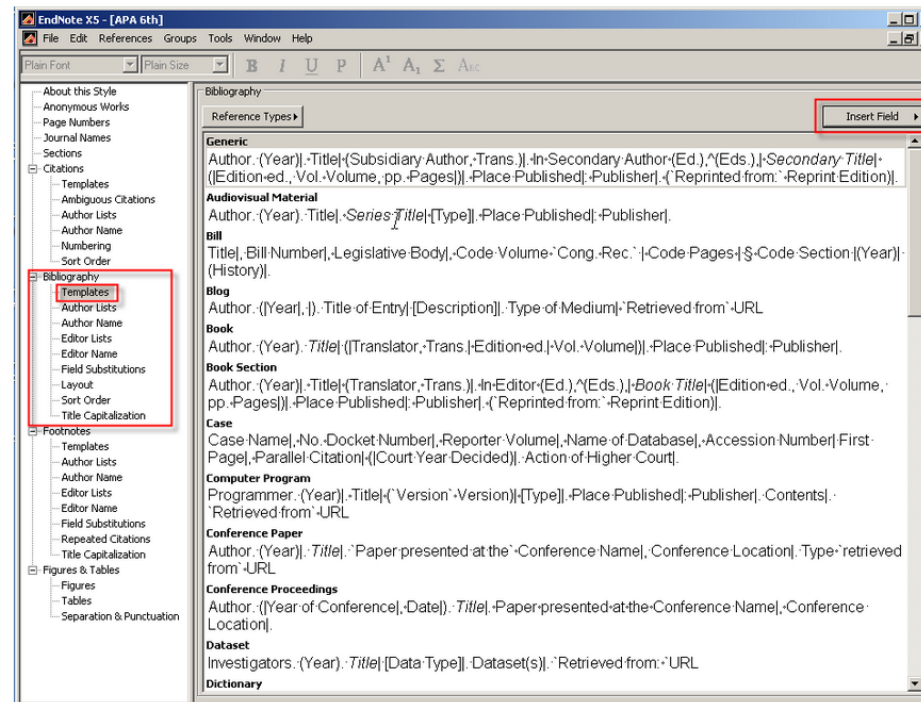
- Then go **Citations > Ambiguous Citations > untick** Include the author initials or full name in citation.
- **Close** the style window (second X) > **Yes** to save changes. This will save as **APA 6th copy** leaving the original style unchanged.
- Go to **Format Bibliography** icon  and select **APA 6th copy**.
- This should remove author initials from your in-text citations.
- If you experience problems when trying to save your edited style see the [EndNote FAQ: Problems saving styles](#)

# Other Style Tricks: Bibliography Templates

To change how citations appear in your bibliography:

1. Open the style window as outlined above. **Left menu > Bibliography > Templates**. View the Bibliography template in the main window.

- **To alter the format** - Highlight the text & use Formatting buttons above the In-Text Citations window
- **To alter punctuation** - type or delete punctuation as required.



Generally better to use one of EndNote's built-in style templates, or download one from the journal website!

# Other Style Tricks: Reference Positioning

- Some journals want:

The quick red fox jumped over the lazy brown dog.<sup>1</sup>

- Others require:

The quick red fox jumped over the lazy brown dog (1).

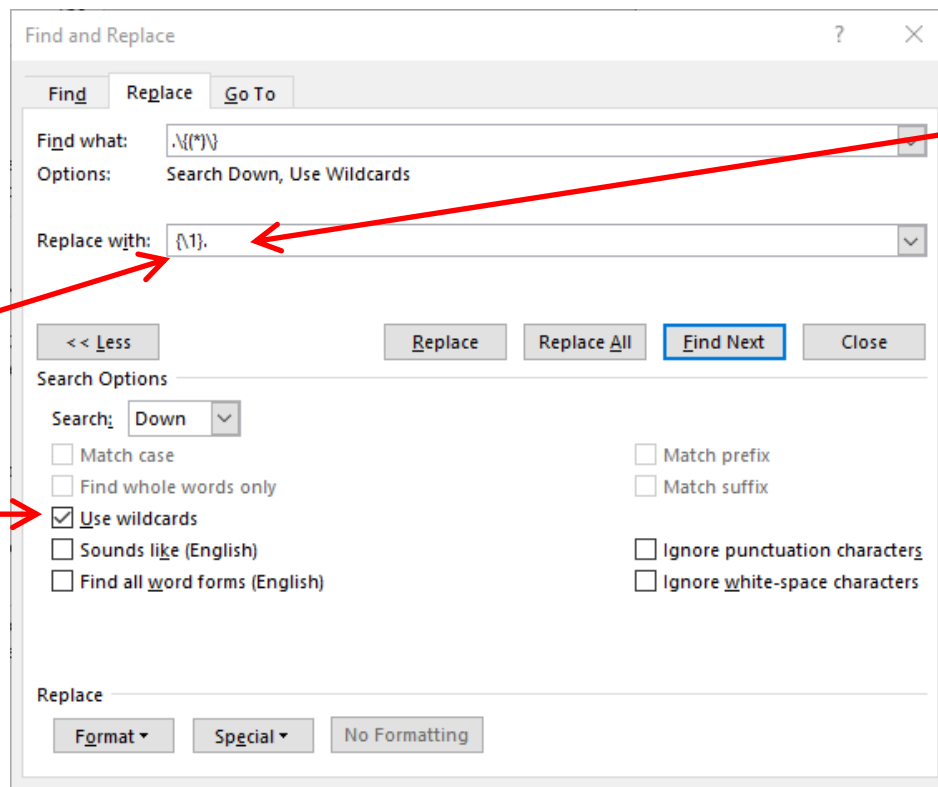
- Note position of punctuation – there is no easy way to flip this in EndNote!

# Other Style Tricks: Reference Positioning

- The fix is to use Word's find and replace, with regular expressions
- The example on the next slide flips “ref.<sup>1</sup>” to “ref (1).” provided all references are combined in one curly brace
  - E.g. “{Smith 2021, #1;Jones 2020, #4}” and *not* “{Smith 2021, #1}{Jones 2020, #4}”
  - Try to avoid multiple curly braces – use semicolons, or format/unformat citations to have EndNote do it for you
  - Another find and replace run will be needed for references near other punctuation (commas, semicolons, etc.)
  - Similar configurations can be used to go the other way

# Other Style Tricks: Reference Positioning

- Change reference after punctuation to before punctuation (near periods):



Starts with a space

Must be checked

`\1` replaces everything between the parentheses from the "Find what" field



# Other Style Tricks: Reference Positioning

- Change reference before punctuation to after punctuation (near periods):

Starts with a space →

Must be checked →

\\1 replaces everything between the parentheses from the “Find what” field

Find and Replace

Find Replace Go To

Find what: \\(\*)\\. Options: Search Down, Use Wildcards

Replace with: .\\1

<< Less Replace Replace All Find Next Close

Search Options

Search: Down

Match case  Match prefix

Find whole words only  Match suffix

Use wildcards  Ignore punctuation characters

Sounds like (English)  Ignore white-space characters

Find all word forms (English)

Replace

Format Special No Formatting

# Sharing EndNote Libraries

- EndNote libraries contain a data file (.enl) and an associated directory, which can have PDFs and other info (.Data)
- Generally, the .enl file can be shared without the .Data directory, but EndNote will complain, and you will lose Term Lists
- **Solution:** Compressed libraries! (File → Compressed Library... → .enlx file)
  - Can choose not to save extra PDF files
  - Will retain Term Lists
  - Useful for sharing with your PI (can be emailed)
- Online libraries can also be shared, but beyond the scope here

# Key Points

- Reading the scientific literature is an important part of all research pursuits: primary and secondary
- EndNote is the best tool out there for managing references and simplifying the citation process
- EndNote is not magic; just installing it is not enough, you must use it properly
  - Know how to edit styles
  - Know about term lists and case correction
  - Know how to share