Literature Databases and Using EndNote

Biochemistry Boot Camp 2022
Session #13
Nick Fitzkee
nfitzkee@chemistry.msstate.edu

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 then 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)

EndNote

- EndNote is a software program that works with Micro soft 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

Useful to change format!
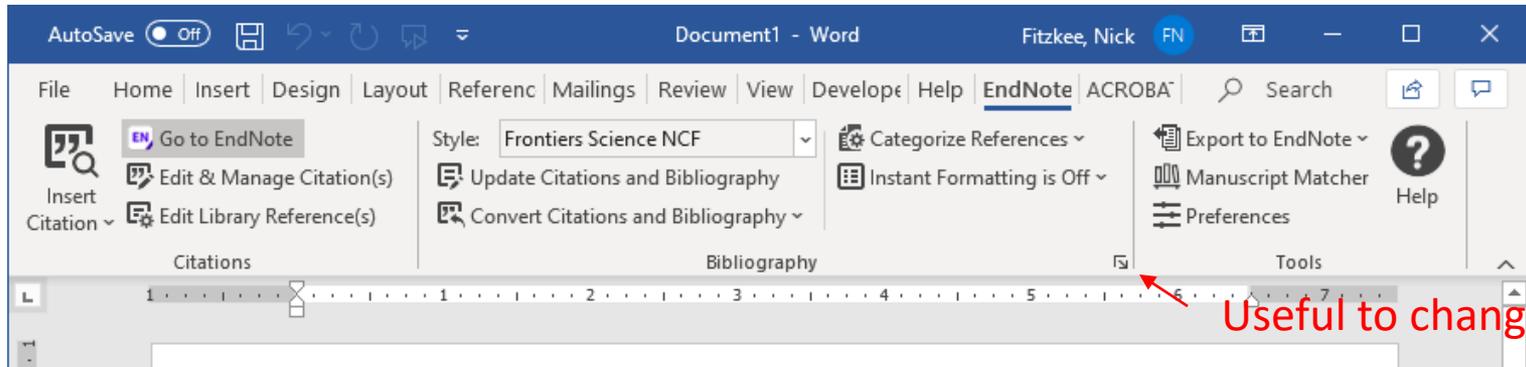
- EndNote tab contains all tools:
  - **Style:** Output style that will be used for bibliography
  - **Update citations:** Find reference plain text (e.g. "{Smith, 2019 #12}" and convert to a formatted reference (e.g. "(Smith, 2019)")
  - **Convert Citations:** Allows you to convert formatted references 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): [12] 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 [1]. (not correct) or
  - … end (Smith, 2019). (correct)

- Example #2: "end.{Smith, 2019 #293}" Becomes:
  - … end.[1] (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.[19-21]

- 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.[19 20 21]

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

Fixing Capitalization of Titles using Capitalization Preferences

1. Select **Edit**
2. Select **Output Styles**
3. Select **Open Style Manager**
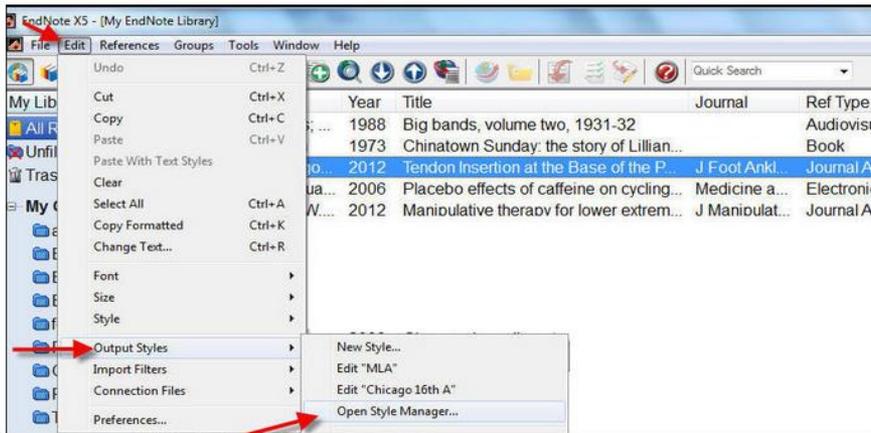
4. Highlight the Style you wish to edit and select edit:
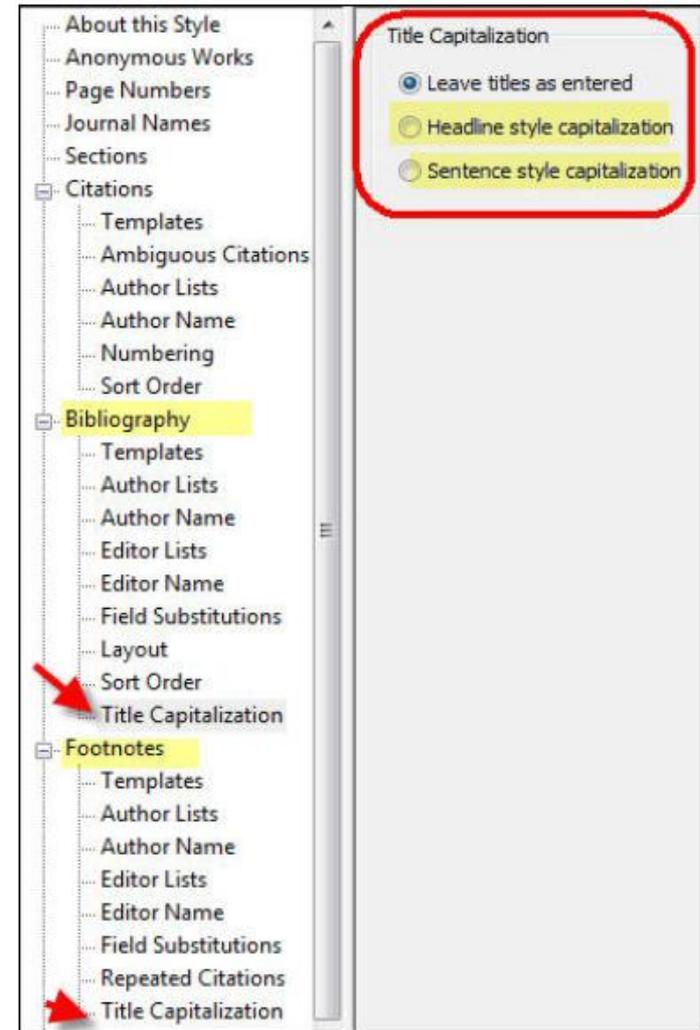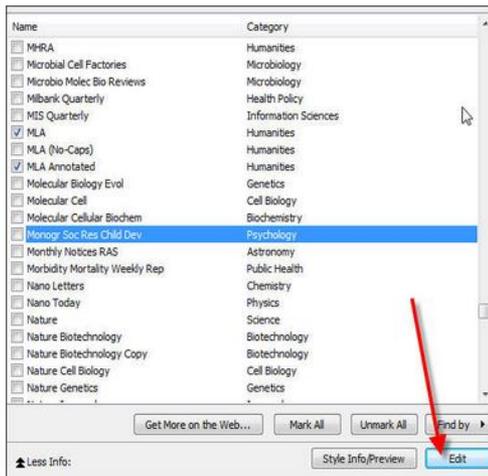
Using the ENCase file to Fix Capitalization

- EndNote keeps a list of words where case should not be altered
  - Examples: NMR, 13C, Escherichia, coli

- This can prevent terms like "Nmr" or "^{13}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 <u>*Term Lists*</u> 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
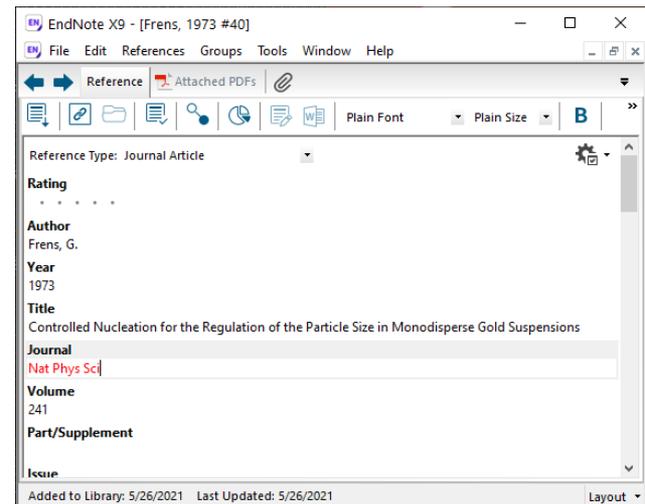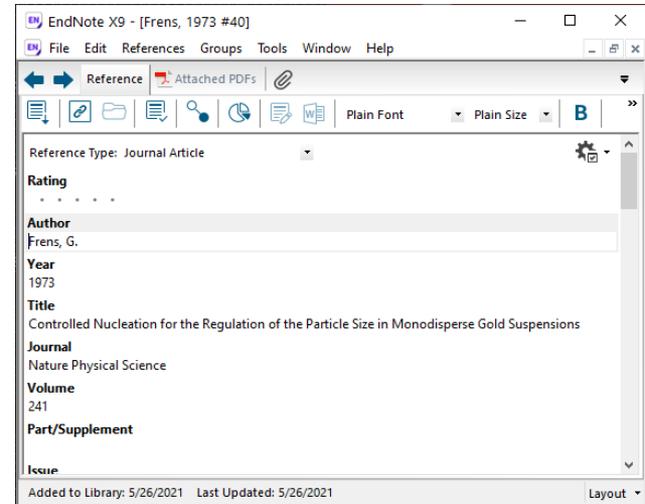
Editing a Term List
(Library Specific – Must Be Done for Each Library)

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

https://www.youtube.com/watch?time_continue=274&v=Ewy8_DwdZGo

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:
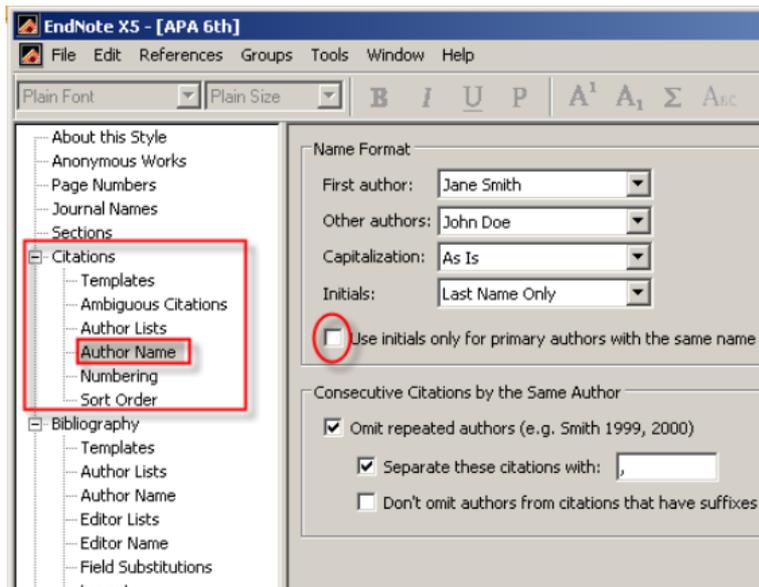
Other Style Tricks: Author Names

- Open the style window as outlined above.

- **Left menu > Citations > Author Name > untick** Use initials only for primary authors with the same name
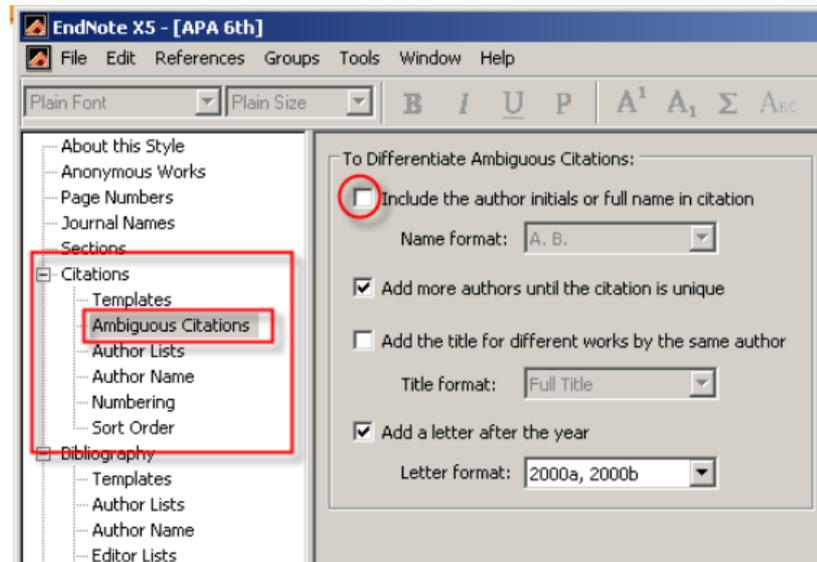
- Then go **Citations > Ambiguous Citations > untick** Include the author initials or full name in citation.

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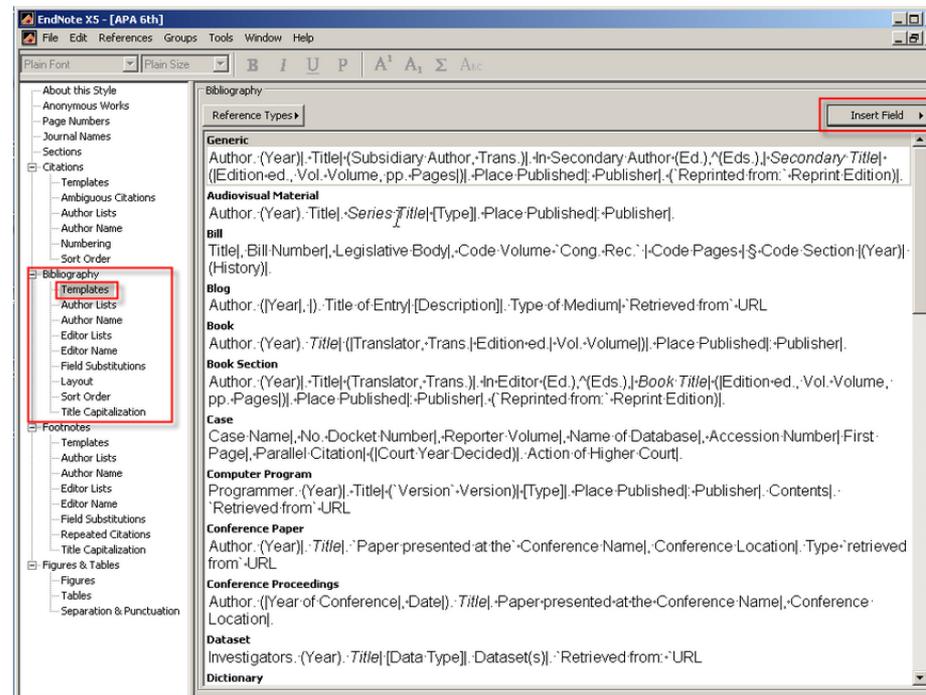
Generally better to use one of EndNote's built-in style templates, or download one from the journal website!

Other Style Tricks: Reference Positioning

- Some journals want:

   The quick red fox jumped over the lazy brown dog.[1]

- 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.[1]" 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):

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
☐ Find whole words only
☑ Use wildcards
☐ Sounds like (English)
☐ Find all word forms (English)

☐ Match prefix
☐ Match suffix

☐ Ignore punctuation characters
☐ Ignore white-space characters

Replace

Format ▾ | Special ▾ | No Formatting

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

Starts with a space

Must be checked

Other Style Tricks: Reference Positioning

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

Starts with a space

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

Must be checked

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