MDG5214: RESEARCH SKILLS

INTRODUCTION TO LIBRARY PORTAL & RESEARCH SKILLS

Annelissa Chin & Dr Amy Chou

NUS Libraries
Aug 2020
(For E-Learning)
1. Know your library
   • Library Facilities
   • Library Resources: Findmore, LINC, etc
   • Library Services: Graduate Students
   • Tools: Proxy Bookmarklet, Find It!@NUS Libraries, EndNote

2. Research skills
   • Research data management: An overview
   • Publishing tips
A two-minutes video at https://www.youtube.com/watch?v=FVYFcEz_x0g
Enter the libraries

Library Account
Check your record
Borrow / Renew / Reserve books

NUSNET Account
Everything E:
E.g.
Portal/E-Resources/E-forms

Smart Card/Library Pin

NUSNET ID/password
NUS IT Care: 6516 2080

NUSNET Account
Everything E:
E.g.
Portal/E-Resources/E-forms
<table>
<thead>
<tr>
<th>Day</th>
<th>Term</th>
<th>Vacation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mon – Fri:</td>
<td>8am – 9pm</td>
<td>8.30am – 6pm</td>
</tr>
<tr>
<td>Sat:</td>
<td>10am – 5pm</td>
<td>Closed</td>
</tr>
<tr>
<td>Sun &amp; Public Holiday:</td>
<td>Closed</td>
<td></td>
</tr>
</tbody>
</table>

Reading Area is open 24/7 for NUS Staff & Students

https://libportal.nus.edu.sg/frontend/opening-hours-calendar?selectedLib=0

NOTE: Our online services are open to support you during this COVID-19 circuit breaker period when all our libraries are closed until further notice (click link to see details).
Medical Library: Facilities

- E-Resources cluster
- Photocopy / Printing / Scanning
  Payment by Cashcard/Ez link
- Self-Checkout Machine
  Pay Fines via NUSFastPay
- Loans Desk (RBR Collection)
  *self-service kiosk
- Reading lounge:
  Current Newspapers
- New Books Display
ALL (FINDMORE@NUSL)
• Searches books, Media, eBooks, journal articles, newspaper articles, online thesis & more
• Covers most but not 100% of our articles & E-Resources

BOOKS AND MEDIA (LINC)
• Good for known item search
• Covers books, DVDs, music scores
• Cannot be used for journal or newspaper articles
• Use Filter to refine search results
• Useful to search full-text articles
• Select ‘Books & Media’ tab
• Search the journal ‘European Journal of Clinical Nutrition’ by ‘Title’
• Learn how to read a journal record with online & print version
• Login to Library account to request for closed stack journal
Check Your Library Account (myLINC)

- Enter Matric no. & Library PIN to login to **Library Account**
- See your loan record, library fines, modify PIN
- Renew or reserve library materials

![Quick Links]

**RENEW ONLINE (Up to 3 times)**

<table>
<thead>
<tr>
<th>RENEW</th>
<th>TITLE</th>
<th>BARCODE</th>
<th>STATUS</th>
<th>CALL NUMBER</th>
</tr>
</thead>
<tbody>
<tr>
<td>✔</td>
<td>Embryonic stem cell research : re-explored considering scientific philosophical and theological understanding of human life / John, P Shaji.</td>
<td>5261953E</td>
<td>DUE 17-01-18</td>
<td>Q3588 Ste.Jo 2017</td>
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<tr>
<td>❌</td>
<td>Zika : from the Brazilian backlands to global threat / Debora Diniz ; translated by Diane Grosklaus Whitty.</td>
<td>5261778B</td>
<td>DUE 17-01-18 +1 HOLD</td>
<td>R3644 ZIK.DI 2017</td>
</tr>
</tbody>
</table>
RBR (Reserved Books/Readings)
2 hour/overnight loan (subject to fines)
Search catalogue (by module code /lecturer’s name) E.g. CO5102

E-Reserves
Scanned articles recommended by lecturers
Search LumiNUS by module codes
Only 1 download
https://luminus.nus.edu.sg/
Library Services: Graduate Students
Loan Entitlement
- 30 books
- 28 days
- renew 3 times online
- RBR: 2hr/overnight
• Google “**Dietary effects on breast-cancer risk in Singapore**” by Lee, J; Lee, H.P; Gourley, L; Duffy, S.W; Day, N.E; Estève, J

• Use Proxy Bookmarklet to download the fulltext article
• Refer to guide to install “Proxy Bookmarklet” at https://libguides.nus.edu.sg/proxybookmarklet/installondesktop
• Click on Proxy Bookmarklet to access the fulltext article
• Go to Google Scholar
• Configure setting to link to Find It! @NUS Libraries
- Click on **Find It! @NUS Libraries** icon to download full text articles

<table>
<thead>
<tr>
<th>Articles</th>
<th>About 28,900 results (0.07 sec)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dietary effects on breast-cancer risk in Singapore</strong>&lt;br&gt;HP Lee, J.Lee, L.Gourley, SW.Duffy, NE Day, J Estève - The lancet, 1991 - Elsevier&lt;br&gt;It is suspected that diet influences the risk of getting breast cancer. A study of diet and breast cancer was done among 200 Singapore Chinese women with histologically confirmed disease and 420 matched controls. A quantitative food-frequency questionnaire was used to...&lt;br&gt;⭐️ ⭐️ Cited by 972 Related articles All 10 versions</td>
<td>[PDF] aacjrjournals.org</td>
</tr>
<tr>
<td><strong>Tofu and risk of breast cancer in Asian-Americans.</strong>&lt;br&gt;AH Wu, RG Ziegler, PL Horn-Ross, AM Nomura... - Cancer Epidemiology ..., 1998 - AACR&lt;br&gt;... Because most of the analytic studies show either no association or a weak association between dietary fat and risk of breast cancer, the focus on diet has shifted to the investigation of other dietary factors, such as soy, which may protect against breast ...⭐️ ⭐️ Cited by 421 Related articles All 8 versions</td>
<td></td>
</tr>
<tr>
<td><strong>Epidemiology of soy exposures and breast cancer risk</strong>&lt;br&gt;AH Wu, MC Yu, CC Tseng, MC Pike - British journal of cancer, 2009 - nature.com&lt;br&gt;Soybeans and its products have been a staple in the Asian diet for centuries... association between oestrogen and breast cancer risk, there is biological plausibility that dietary soy intake... Lee et al (1991) first reported a reduced risk of breast cancer in premenopausal Singapore ...⭐️ ⭐️ Cited by 466 Related articles All 12 versions</td>
<td>[HTML] nature.com</td>
</tr>
<tr>
<td><strong>Soy intake and breast cancer risk in Singapore</strong> Chinese Health Study&lt;br&gt;AH Wu, WP Koh, R Wang, HP Lee, MC Yu - British journal of cancer, 2008 - nature.com</td>
<td>[HTML] nature.com</td>
</tr>
</tbody>
</table>
Summary: Tools to Find Full-text

- Search in Google Scholar
- Library proxy bookmarklet
- FindMore@NUSL
  - Other resources
  - Alternatively
- Only if proxy failed
- Only if FindMore@NUSL failed
- LINC

Document Delivery
EndNote

A bibliographic management tool that:

- **Stores** citations
- **Organizes** citations
- **Formats** citations
1. Introduction

Ovarian cancer is the second most deadly gynaecological cancer in the world, and the most deadly in North America [1], highlighting the need for primary prevention through modifiable risk factors potentially including the consumption of tea, coffee, and caffeinated soft drinks. Black tea consumption has been suggested to be associated with increased level of estrogen circulation in postmenopausal women [2], while green tea [2–4] consumption have been suggested to be associated, Controls were randomly chosen

References


http://libguides.nus.edu.sg/endnote
Installing EndNote X9 on PC

Refer to EndNote guide at: http://libguides.nus.edu.sg/endnote
EndNote X9 for Mac is available for download via NUS IT website.

https://nusit.nus.edu.sg/services/software_and_os/software/software-for-mac-and-linux/

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**Installing EndNote X9 on Mac**
"Data management should be woven into every course in science, as one of the foundations of knowledge".
Adapted from: https://www.goshen.edu/academics/data-management/

**Data lifecycle**

**Research Data Lifecycle**

- **Planning**
  - Data management plan

- **Collecting**
  - Data organisation
  - Documentation
  - Data security

- **Analysing**
  - Data storage
  - Backup

- **Preserving**
  - Data reformatting
  - Data archival

- **Reusing**
  - Finding data
  - Data citation

- **Publishing**
  - Data sharing
Components of a data management plan

- Data organisation
- Documentation
- Data storage and security
- Ownership and rights
- Data sharing and licensing
- Data preservation

After this lesson, you will be able to:

1. Describe your data (i.e. source, format, scope)
2. Identify types of documentation suitable for your data
Question: Which **ONE** of the following statements is **FALSE**?

A. Data can be categorised into primary, secondary or tertiary data.

B. Different disciplines have and use discipline-specific language around the subject research data.

C. Data can be regarded as situational; the same information may be research data for some research questions but not others.
A. Data can be categorised into primary, secondary or tertiary data.

❖ **Primary** data are collected by the investigator conducting the research.

❖ **Secondary** data are collected by someone other than the user. Some examples include published research, census, organisational records, etc.

**Answer: A**
B. Different disciplines have and use discipline-specific language around the subject research data.
C. Data can be **situational**; the same information may be research data for some research questions but not others.

❖ For example, CCTV footage may be archived or destroyed by a security firm. But when used to study human behaviour or 21st century surveillance methods, it becomes data for that researcher.

❖ Thus, research data are very much about **when** they are used, as well as **what** they constitute and the **purpose** for which they are to be used.

Therefore, we need **context** to interpret, analyse and reuse data.
<table>
<thead>
<tr>
<th>Data Class</th>
<th>Source or process</th>
<th>Scope or content examples</th>
<th>Format examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experimental</td>
<td>Generated by lab equipment</td>
<td>Chromatograms; gene sequences</td>
<td>Lab notes; samples; specimens; methodology</td>
</tr>
<tr>
<td>Computational / Simulation</td>
<td>Generated from computation models</td>
<td>Climate models; economics prediction models</td>
<td>Methodology; SOPs; models; algorithms; scripts; simulation software</td>
</tr>
<tr>
<td>Observational</td>
<td>Recordings of specific phenomena at a specific time or location</td>
<td>Climate data; seismic data; medical imaging; survey or interview results</td>
<td>Field notebooks; photographs; films; questionnaires; responses; codebooks; audio or video recordings</td>
</tr>
<tr>
<td>Derived</td>
<td>Produced via processing or combining other data</td>
<td>Data mining; compiled databases; GIS</td>
<td>Databases; spreadsheets, data files</td>
</tr>
<tr>
<td>Reference</td>
<td>Extracted from published and/or curated datasets</td>
<td>Genbank, crystallographic databases</td>
<td>Database application; spreadsheets, data files</td>
</tr>
</tbody>
</table>

Adapted from: EDINA and Data Library University of Edinburgh.(2011) Research Data MANTRA [online course]. [https://mantra.edina.ac.uk/](https://mantra.edina.ac.uk/)
- What datasets might be generated in my research?
- What file type or format might each dataset be in?
- What are some ways to add context to research data?

Context comes from proper documentation, e.g. hypothesis/research question, methodology, definition of variables, what was done with missing values, etc.
In preparation for a Resource Management Plan, an officer discovered 14 duplicate GPS inventories of roads. However, because none of the inventories had enough metadata, it was impossible to know which inventory was best or if any of the inventories actually met their requirements.

The officer had to re-inventories all the roads. This took another 9 months.

Source: DataONE Education Module: Data Management. DataONE.
Lab notebook

Methods

Metadata

Standards

Others

Documentation
Electronic notebooks facilitate documentation by:

- **Linking** data, files and pages for easy referencing/searching
- Allowing **embedding** and viewing of data and image files within notebooks
- Ability to **track changes** → Audit trail
- Ability to be **locked and electronically signed** → Defence against claims of fraud, evidence in patent disputes, regulatory approval, etc.
- Ability to **export data** to a common file type → Exchange information or backup

• Do the following to ensure proper documentation:
  • Creating an **table of contents/index** for referencing/searching
  • Attach equipment readouts/printouts and reference to relevant experiments within notebooks
  • Create an audit trail by amending in ink and signing off
  • Indicate or remove blank spaces and sign off at the end of everyday

• Back up hardcopy (lab) notebooks by scanning (e.g. PDF format)

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**Considerations for hardcopy (lab) notebooks**

Metadata is information about data (i.e. who, what, when, where, why, and how):

- **Vague**: See page 5 of log book

- **Better**: Western blot from *Mus musculus* samples, performed on 23 Aug 2019. For methods and blots, see page 5 of log book. For digitised images, see “C:/Documents/Wblots/”.

- **Best**: ??
A digital, structured metadata (Dublin Core schema):

- Creator: A.M. Chou
- Contributor: K.P. Sem
- Date: 23 Aug 2019
- Title: Western blot from *Mus musculus* samples
- Subject: *Mus musculus*
- Identifier: 2019-08-23_Blot01.tif
- Format: TIF image

Other documentation types

- **README.txt files**
  - Highly versatile
  - Open format
  - Describe data content and general file structure

- **Templates**
  - List of variables or information for every experiment
  - Add structure to unstructured notes

- **Data dictionaries**
  - Suitable for spreadsheets and datasets containing many variables
  - May be part of README.txt file

- **Codebooks**
  - Useful for processing heterogeneous data into consistent, computable dataset

**Spectroscopy:**
- Date
- Experiment
- Sample
- Sample conc.
- Instrument power
- Wavelength
- PMT voltage
- Calibration files
- Measurement files

Adapted from [Guide to Writing "readme" Style Metadata, Comprehensive Data Management Planning & Services, Cornell University](https://example.com)
What are some **documentation methods** suitable for your research data?

What **metadata schemas** will you employ, if any?

What **tools** do you need for documentation?
1. Be mindful about your publishing choices
2. Adopt appropriate research metrics
3. Create a consistent and persistent online identity
1. Be mindful about your publishing choices

- Talk to your supervisors, seniors etc.
- Look at similar articles or articles in your citation network
- Use journal finders to search for journals by subject, publisher, keywords, etc. E.g. Journal/Author Name Estimator (JANE)

- Criteria when selecting journals
  - What are the aims and scope of the journal?
  - Has the journal published articles that are similar to yours?
  - What are the journal’s restrictions?
  - What are the journal’s metrics?

For more info, see Scholarly publishing: Journal selection LibGuide
Publishing Fundamental: Selecting the Right Journal

DATE & TIME
16 Apr 2019 (Tue),
10am - 12nn

Journal selection is an important process, as you can only submit to one journal at a time.

Read More


DATE & TIME
17 Apr 2019 (Wed),
10am - 12nn

Publishing in top-tier journals brings your research publications to a higher level. In this...

Read More
2. Adopt appropriate research metrics

http://libguides.nus.edu.sg/eng_research/evaluate/citation_analysis
A Precisely Regulated Gene Expression Cassette Potently Modulates Metastasis and Survival in Multiple Solid Cancers

FWCI: A measure of how well cited a publication is compared to similar publications
<table>
<thead>
<tr>
<th>Cited Works</th>
<th>Citing Articles (cited by)</th>
<th>Number of Citations (times cited) for each cited work</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>b, A</td>
<td>4</td>
</tr>
<tr>
<td>b</td>
<td>A, B, C</td>
<td>3</td>
</tr>
<tr>
<td>c</td>
<td>D, E</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>6 Citing Articles</td>
<td>8 - Total citation counts</td>
</tr>
<tr>
<td></td>
<td>1 Self-Citation</td>
<td></td>
</tr>
</tbody>
</table>
The *h*-index is an author-level metric that attempts to measure both the **productivity** and **citation impact** of the publications of a researcher.

- A researcher with a *h*-index of *n* has published *n* papers each of which has been cited **at least *n* times**.
• **Journal Citation Reports** (JCR): Information on **Journal Impact Factor**. The higher the impact factor the more influential the journal is considered to be.

• **Scopus Journal Metrics**: A free listing of journal metrics (i.e. **CiteScore**, etc) in Scopus database.
• It is used as a proxy to determine how important a given journal is in its field
• The journal Impact Factor is the average number of times articles from the journal published in the past two years have been cited in the JCR year

![Journal Impact Factor Calculation](image)

Calculation:

\[
\text{Cites to recent items} \div \text{Number of recent items} = \frac{637}{104} = 6.125
\]
Better to judge a journal by its quartile ranking in a particular subject category.
• Categories of research metrics
  • Article-, author-, journal-level, etc.
  • Citation count: Absolute and field-weighted

• Understand limitations of use
  • Always use a basket of metrics

2. Adopt appropriate research metrics
• Publish with consistent name
• Register for ORCID; it is a unique, persistent identifier
• Ensure each of your scholarly output has a unique, persistent identifier, e.g. DOI

3. Create a consistent and persistent online identity
ORCID iD
“Connecting Research and Researchers”

What is it?
It is a unique and persistent 16-digit identifier expressed as an url that connects you to your research activities throughout your career.

Benefits
• Eliminates name ambiguity
• Increases research visibility
• Connects you to your works and affiliations
• Stay with you for life
• Saves you time

http://orcid.org/0000-0002-1825-0097

Register @ https://orcid.org/register
When do I use an ORCID iD?

• Submitting manuscript to publisher
• Grant submission
• Peer review
• Your websites / social media
• CV

For more info, see http://libguides.nus.edu.sg/orcid
Sharing publications on networking platforms?

• Long-term accessibility and sustainability not guaranteed
  • Social Science Research Network (SSRN) was acquired by Elsevier in May 2016

• Research social networks are not considered as “Open Access”
  • Elsevier and American Chemical Society (ACS) filed lawsuits against ResearchGate in Germany and USA between 2017-2018
  • Academia.edu was asked by Elsevier to take down papers in Dec 2013

• Find where and appropriate version to share at https://www.howcanishareit.com/

<table>
<thead>
<tr>
<th>Pathways to open access</th>
</tr>
</thead>
</table>

**Gold OA**
- Article becomes open access *immediately* on publication
- Available to fully open access journals, as well as hybrid journals
- Very often, an article processing charge is required

**Green OA**
- Publish in a subscription-based journal
- Making a *version* of your article (i.e. preprint, postprint, and/or published PDF) available via a repository
- No article processing charge is required

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**Check SHERPA/RoMEO**

What is pre-print, post-print, and publisher's PDF?

*What is pre-print, post-print, and publisher's PDF?*
Our goal is to collect, preserve and showcase the research output of NUS researchers in order to:

- Support them in increasing their research visibility
- Demonstrate the research excellence of NUS to the world
Access Options
- Free
- All Research Disciplines
- Safe & Perpetual Storage
- Usage Statistics & Citations
  - SCOPUS™
    - Citations: 10
    - Checked on Mar 6, 2018
  - WEB OF SCIENCE™
    - Citations: 10
    - Checked on May 8, 2018
  - Page view(s)
    - 166
    - Checked on Jul 8, 2018
  - Download(s)
    - 114
    - Checked on Jul 8, 2018
  - Google Scholar™
  - Check

DOI & Handle
- Searchable & Discoverable

NUS’ institutional repository
What we do

1. PLAN & CONDUCT
   Learn about literature review, databases, academic writing via workshops and personalised advisories

2. PUBLISH RESEARCH
   Find out more about publishing in impactful journals and with scholarly presses through talks and workshops

3. ENHANCE VISIBILITY
   Enhance your research visibility through the use of ORCID IDs, the adoption of green open access and more

4. ARCHIVE & PRESERVE
   Preserve publications and research data in our ScholarBank@NUS to facilitate new knowledge creation and fulfil funders' mandates

5. MEASURE IMPACT
   Measure and benchmark the quality and impact of your research output using citation metrics using tools like Scopus, SciVal, Web of Science

Librarians are here to help