CAHS Research Education Program

Research Skills Seminar

Scientific Writing

3rd May 2024

Presented by

Dr Tony Kemp
Associate Professor, School of Earth Sciences
University of Western Australia

Child and Adolescent Health Service, Department of Research

Department of Health, Government of Western Australia

Scientific Writing

PRESENTATION SLIDES

Government of **Western Australia**
Child and Adolescent Health Service

Scientific Writing

3rd May 2024

Dr Tony Kemp

Associate Professor, School of Earth Sciences,
University of Western Australia

Compassion | Excellence | Collaboration | Accountability | Equity | Respect

THE UNIVERSITY OF WESTERN AUSTRALIA

Perth Children's Hospital Foundation

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Acknowledgement of Country

The Child and Adolescent Health Service acknowledge Aboriginal people of the many traditional lands and language groups of Western Australia.
We acknowledge the wisdom of Aboriginal Elders both past and present and pay respect to Aboriginal communities of today.

2

CAHS Research Education Program

Research Skills Seminar Series

- Over 20 topics across the research process
  - 1h overview
  - Handouts are provided
- Recorded and uploaded
- Feedback
  - Back of handout
  - Emailed link
- Please hold questions to the end
  - Use provided microphone

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Overview

1. **What, why, who, how**
2. **Getting started**
3. **Getting stuck**
4. **Structure and organisation**
5. **Principles of good writing**
6. **Plagiarism and ethics**
7. **Authorship**
8. **The publication process**

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In a nutshell….

- Precise, clear writing is essential
- Always keep the reader in mind!
- Remember the publication ‘chain of command’
- Persist!

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What, why, who, how?

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What makes scientific writing different?

- Precision
- Clarity
- Brevity
- Terminology ….(beware)

"Everything is vague to a degree you do not realise till you have tried to make it precise."

- Bertrand Russell

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Why write?

- Ethics and professionalism
- Avoid duplication of work
- Impact on policy and practice
- Intellectual stimulation
- Enhance our research track record
- Project deliverable (university, government or industry)
- Achieve immortality!

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Who for?

- Project participants
- Peers
- Wider community
- Sponsors
- Policy Makers

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How?

Verbal

- Radio
- Meetings
- Conferences
- Television

Written

- Summary reports
- Journal articles
- Theses
- Policies
- Newsletter
- Websites
- Social media

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Getting started

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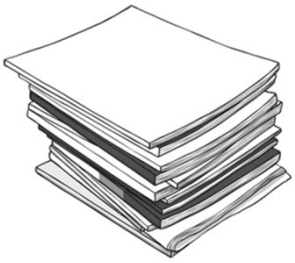
Getting Started - Practical stuff

- Key message(s). What is the one big thing?
- Choose a journal wisely. Scan through a recent volume
- Reference manager tool
- Librarians are *gold*
  - Searching publication databases
  - Research impact metrics, journal access
- Read and re-read key papers
- Set a date line. Stick to it!!



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Getting stuck

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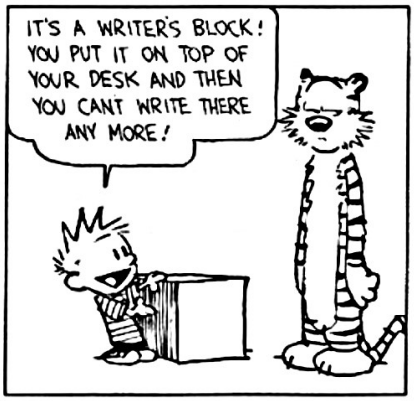
Getting stuck: Why don't we write?

- Too busy
- Not ready
- No one to work with
- Don't know how to start
- Lack of self-confidence
- I don't like writing



"Waiting for the motivation fairy."
Maria Gardiner and Hugh Kearns, *Nature 2011*

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You need to learn to write…

- When you're not ready
- When your ideas are not clear
- When you lack inspiration
- When conditions are not perfect

So this means remove barriers

Write…

- Regularly
- In tiny steps
- To a plan
- In scheduled pieces of **"quality time"**

- Choose something to write about each day

"I write only when inspiration strikes. Fortunately it strikes every morning at nine o'clock sharp ." ***- W. Somerset Maugham***

Structure and organisation

Organisation of ideas

- **Simple "scannable" roadmap of logical flow**
  - Key messages
  - List important points
- **Headings and subheadings**
  - Group related ideas
  - Map the document's structure
- **Keep the order of ideas the same within each section**

The Academic Paragraph

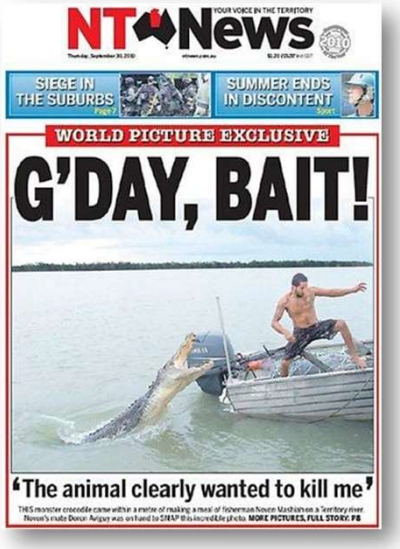
- One theme per paragraph
- Introductory or “topic” sentence is key
- Concluding or “linking” sentence to next paragraph
- Logical flow of supporting sentences in between!
- Keep to a suitable length - edit

General Structure: Peer-reviewed Journals

- Title
- Abstract
- Background
- Methods
- Results
- Discussion/Conclusion
- Acknowledgements
- References

The Title

- Critical
- Use key words
- Short and catchy
- Eye catching: clear description
- Accurate, specific, complete
- No abbreviations/acronyms
- Include main result



Some examples

Lim MSC, Hellard ME, Aitken CK.
"The case of the disappearing teaspoons: longitudinal cohort study of the displacement of teaspoons in an Australian research institute."
BMJ 2005;331:1498.

Campbell I, Taylor SR
"No water, no granites – no ocean, no continents"
Geophys Res Lett 1983; 10; 1061:1064

Burell AG, Halford A et al.
"Snakes on a spaceship: an overview of Python in Heliophysics"
J Geophys Res 2018; 123

Improving your title

Boring, unhelpful…

A study of the effects of lupin feed in Dorper sheep

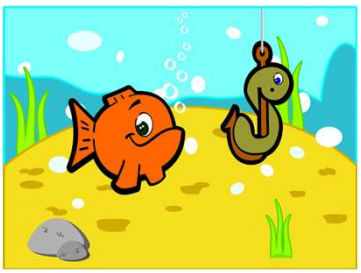
Include major results…

Lupin feed prevents underweight in Dorper sheep

Include major conclusion…

Lupin feed has potential to replace oats to maintain healthy weight in Dorper sheep

Abstract



- Good place to start, but…
- Complete LAST
- Key headings
- Consistency with objectives
- Hit the high notes!
- If unspecified keep to 250 words

Introduction / Background

- Why are we here? **– Problem and why it is important**
- What we know/don't know **– Evidence**
- What will this research add? **– Justification**
- Clear statement of hypotheses, and expected outcomes
- Define terms or concepts where needed
- Maybe ¼ of the paper

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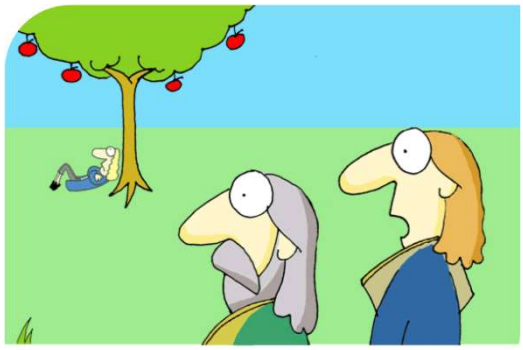
Methods

- Subheadings
- Study description
- Participant description
- Definitions
- Sample Size
- Data analysis/statistical methods
- Data collection and management
- Ethics: approval, consultation



"Reviewers have asked him to reproduce the experiment"

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Results

- Objective
- Logical
- Simple → Complex
  - Study sample
  - Simple descriptive analyses
  - More complex analyses
- Consistent presentation: order, decimals, Cis

"Present the results, all the results, and nothing but the results"

Consider presentation options

- Figures and tables
  - Useful for complex data
- Have stand alone titles
- Don't repeat in text
- Avoid "chart junk"
- Appropriate colour, text
- Follow journal requirements

Reporting Data

- Use words for numbers when…<10 or start a sentence
- Numbers less than 1 begin with a zero e.g. 0.3
- Avoid percentages if sample size <20
- Do not imply greater precision than your instrument
- Data are plural!

Discussion

This is *not* for new results

- or -

Where to repeat results

This is where you explore what the results mean

The death penalty applies!

Discussion

- What did this study find?
- Expected or unexpected?
- Strengths and limitations
- Impact on current practice/thinking
- Academic paragraphs with concluding sentences
- Recommendations, future directions

"Say what your findings mean, not what you would like them to mean, or think they ought to mean" ***- (JS Lilleyman)***

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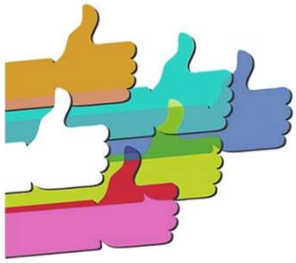
Acknowledgements

- Those who do not fulfil authorship criteria (see later) but whose contributions should be recognised
- Sponsors, participants, administrators, data collectors, technicians
- Funding bodies or schemes (ARC, NHRMC)



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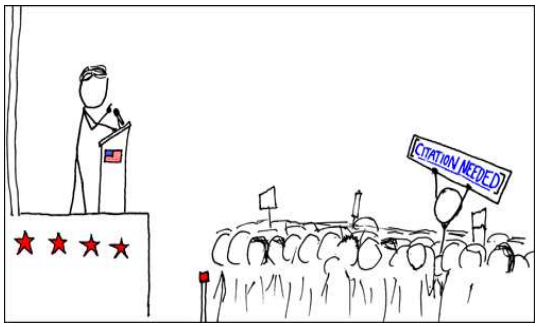
References - function

- Back up statements
- Acknowledge sources
  - Books, journals, publications, magazines, websites, databases, reports
- Avoid plagiarism
- Provide links to related works



References – How

- Add “as you go”
- Use a software package
- Follow the journal’s format
- Don’t reference unread material!
- Accuracy is everything
- Take care with self-referencing

“Which brings us to my next point.”

The “mop up”

- Check again for logical flow
- Finish the abstract – consistency
- Check – references, spelling, abbreviations
- Get someone else to read it
- Put it away for a bit…
- Check in with co-authors

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Principles of good writing

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Style – last but not least of all

W. Somerset Maugham

"There are three rules for writing.
Unfortunately, no one knows what they are."

Principles of good writing

- Use formal language, but…
- Write to suit your audience. Keep the reader in mind!!
- Use words anyone can understand
- Cut again and again
- Practice – you can always learn more!

Writing style - general

Use English that is…

- Plain
- Formal
- Precise
- Unbiased
- Consistent
- Correctly punctuated

Avoid!

- Acronyms
- Abbreviations
- Wordiness
- Footnotes
- Repetition
- Clichés
- Complex words, when a simple one will do

Style examples – things to fix

Formulaic phrase:
"for the purpose of…" *or* "due to the fact that…"

Padded verbs:
To have an expectation, hope, wish, understanding, etc.

Unnecessary "to be" and "being":
"The program is considered to be effective."

Style examples – fixed

Formulaic phrase:
"for the purpose of…" *or* "due to the fact that…"

……because

Padded verbs:
To have an expectation, hope, wish, understanding, etc.

……to expect, hope, wish, etc.

Unnecessary "to be" and "being":
"The program is considered to be effective."

……The program is effective.

More simple things to fix

Overuse of Relative Structures:

- Who
- Which
- That

There is a tendency among many writers **who** may be seen to display certain signs of lack of confidence **that** their sentences will be overloaded with relative clauses and other words **which** are generally useless in function.

More simple things to fix

Overuse of Relative Structures:

- Who
- Which
- That

~~There is a tendency among many writers **who** may be seen to display certain signs of lack of confidence **that** their sentences will be overloaded with relative clauses and other words **which** are generally useless in function.~~

Many hesitant writers overload their sentences with relative clauses and other useless words.

Use positive phrasing

Passive voice:

It is felt that an exercise program should be attempted by this patient before any surgery is performed.

Active Voice:

The patient should attempt an exercise program before surgery

I recommend that the patient attempt an exercise program before surgery

A manifesto for the simple scribe (Tim Radford)

- "When you sit down to write, there is only one important person in your life. This is someone you may never meet, called a **reader**."
- "Here is another thing to remember every time you sit down at the keyboard: a little sign that says **Nobody has to read this stuff**."
- "No one will ever complain because you have made something too easy to understand."
- **Beware of jargon**…. "science writers have to bandy words that no ordinary human ever uses, like phenotype, mitochondrion, cosmic inflation, Gaussian distribution and isostasy. So you really don't want to be effulgent or felicitous as well. You could just try being bright and happy".

A manifesto for the simple scribe (Tim Radford)

- **Beware of wordiness**

Moses did not say to Pharaoh: "*The consequence of non-release of one particular subject ethnic population could result ultimately in some kind of algal manifestation in the main river basin, with unforeseen outcomes for flora and fauna, not excluding consumer services*."

He said "*the waters which are in the river ... shall be turned to blood, and the fish that is in the river shall die, and the river shall stink*."

See: https://www.theguardian.com/science/blog/2011/jan/19/manifesto-simple-scribe-commandments-journalists?CMP=twt_gu

Plagiarism and ethics

Plagiarism

- Presenting another's work or ideas as your own
- Always cite sources for
  - Author's specific words
  - Information and ideas
  - Images
- Common knowledge does not need to be cited
- Some journals use text-matching software to screen manuscripts

"Vice-chancellor resigns amid claims of plagiarism"
July 2002 – The Sydney Morning Herald

Plagiarism

"Your manuscript is both good and original; but the part that is good is not original, and the part that is original is not good."

Commonly misattributed to Samuel Johnson

Quote

- Use quotation marks " "
- Reference immediately

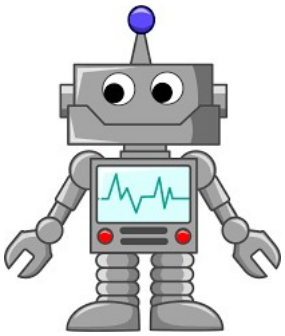
Paraphrase

- Use own words, usually very short
- Reference in text soon after use

Summary

- Reduction of a large piece of writing e.g. into a paragraph

AI???



- Journals require use of generative AI or AI technology to be disclosed in a statement
- In the writing process, can only be used to improve readability and language
- But can be used to analyse data
- Must maintain compliance with the terms of use of the tool or technology
- Closely monitored, policies likely to change…
- Authors (humans) are accountable for paper content!

Authorship

Authorship

- Implies responsibility and accountability for published works
- Pre-decide authorship (ideally in writing)
- Must have intellectual engagement
- Assign roles in manuscript preparation
- All co-authors must have seen the paper and agree to its submission
  - » Some guidelines!!

Who is an author? ICMJE policy

Substantial contributions are required for ALL FOUR of the following:

1. Conception and design, or analysis and interpretation of data; **and**
2. Drafting the article or revising it critically for important intellectual content; **and**
3. Final approval of the version to be published; **and**
4. Agree to be accountable for all aspects of the work; ensure questions related to accuracy or integrity of any part of the work are investigated and resolved

International Committee of Medical Journal Editors
ESSENTIAL for maintaining integrity in scientific publications

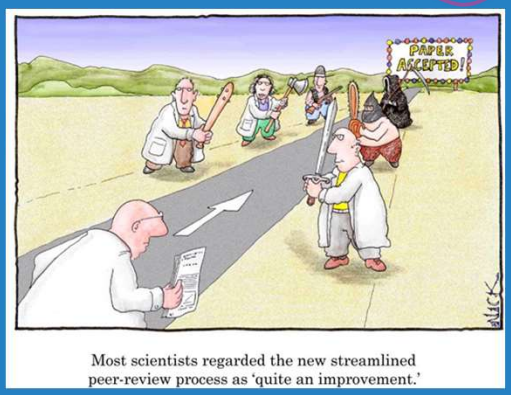
Authorship vs. acknowledgements

- Generally first author = person writing the paper
- Ordering of the other authors based on various criteria
- CRedit (Contributor Roles Taxonomy) statement. See Allen *et al.* (2019) Learned Publishing (https:///doi.org/10.1002/leap.1210)
- Also: *"Authorship: Who's on first?" Dance, A. Nature, 489, 591-593 (2012)*

"Those who win grants, head departments, refer patients, measure variables, and apply standard statistical tests are important in science, but they should receive credit for what they have done and no more."

- NW Goodman, BMJ, 1994

Publication



Most scientists regarded the new streamlined peer-review process as 'quite an improvement.'

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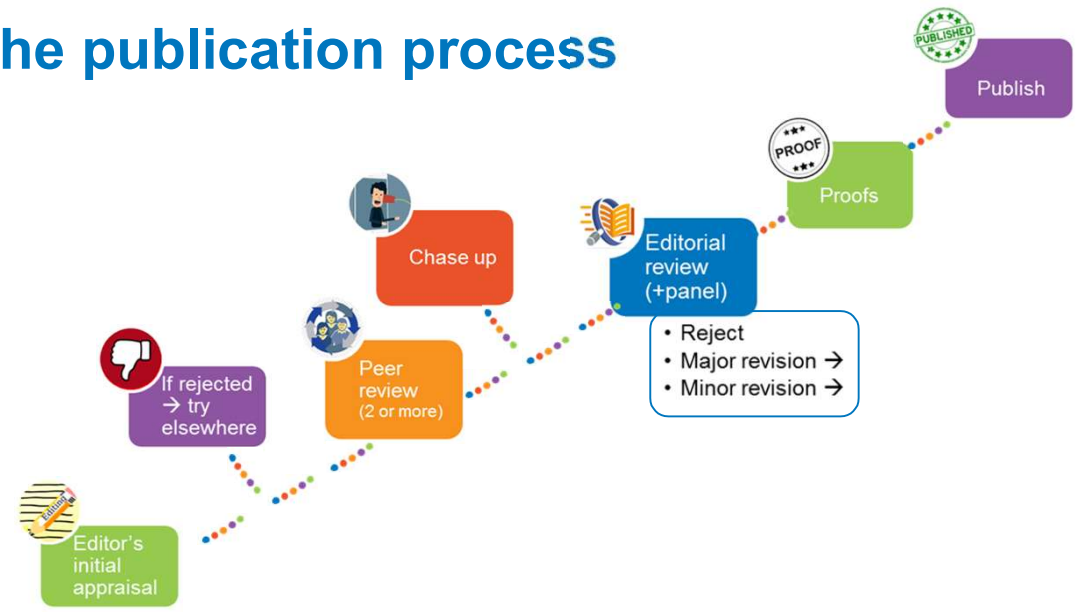
The publication process



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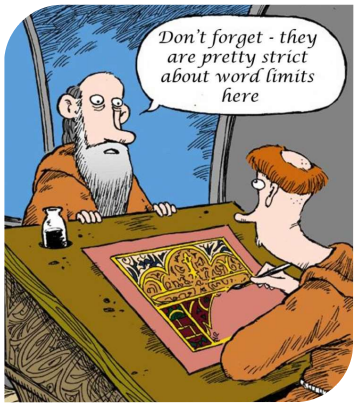
Choosing a journal

- Highly ranked journal in your discipline
- Ask peers/content experts, look at previous papers
- Know the journal's audience precisely
- Aim high – impact factors
- Maximise discoverability and your impact
- Quality over quantity. Short format journal
- Comply with instructions to authors
- Open access?



Choosing a journal

Relevant

- Is there a good fit between your topic and the scope of the journal?
- Does the journal target the right audience?
- What better meets your publishing aims – a major multidisciplinary journal with a broad reach, or a subject-specific journal for researchers in your field?

Discoverable

- Indexed in Web of Science or Scopus
- If not Open Access, does the publisher allow a version to be made available in your institutional repository?
- Is the lead-time to publication clear and reasonable, on the journal website?
- Has the journal optimised visibility by adopting standardised numbers (ISSN or ISBN) and permanent links (DOI)?

Reputable

- Peer-reviewed?
- Where have your colleagues/ supervisor/ well- regarded researchers in your discipline published?
- Is it indexed in the relevant database(s) for your discipline? Have you checked Ulrichsweb?

Cover Letters

- Write separately
- **Catch the editor's attention**
- Fit with readership
- Key findings/intent, and their significance
- Statistical input
- Community involvement/endorsement
- Suggest reviewers

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"Front Page" information

- Title
- Authors
- Institutions associated with authors (get right!)
- Contact details of corresponding author
- Key words/phrase – at least 5 / running title
- Conflict of interest and funding declarations
- "Original work not submitted elsewhere"

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Selection of reviewers

- Suggest who and who not
- Avoid your buddies
- your own references may be used
- May be outside your exact field
- “Double blind” review desirable

“Is it just me or are these review panels getting a lot tougher?”

‘One benefit of aiming high is that there is a chance an astute review will help you improve your paper.’ Guyatt & Haynes.

J Epidemiol (2006);59:900-6

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Response to reviewers

- Read, digest, wait a bit….
- Address every point (succinctly)
- Point to exact locations in text where changes made
- Structure by: Review 1, point 1, and so on..
- Provide “track changes” and “final” versions
- Be agreeable, diplomatic, respectful. Avoid arguing with the reviewer
- Discuss with your co-authors

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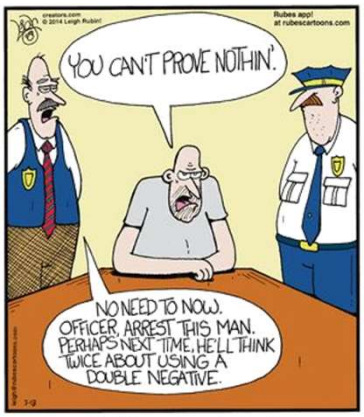
If rejection….

Take comments on board.

Pick another journal … and get on with it!

Proofing – The Final Stage!

- Will go to corresponding author
- Answer editorial questions
- Check spelling, syntax, tables, figures, and their placement, formatting
- Make corrections, but no new material



Another successful bust by the grammar police

Measuring research impact and visibility

- Citation metrics (citations, H-index)
- Downloads of your papers from online sources
- Social media mentions / media mentions
- Socialise your research – tweet about it, write about it on LinkedIn, write for The Conversation, share it with colleagues. Always include the article DOI.

Summary

- Write as you go
- Be succinct, clear, organised
- Style is important
- A good title is essential
- Avoid plagiarism
- Edit and reference accurately
- Apply authorship criteria
- Understand the publication process
- **PERSIST**!!!

Questions?
Comments

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Coming up next

17 May Project Management
Melanie Wright, SMHS

20 May World Clinical Trials Day Special Event
Setting Up Clinical Trials Workshop
with Dr Charlie McLeod, Telethon Kids Institute

Register → **trybooking.com/eventlist/cahsresearcheducationprogram**

We love feedback

A survey is included in the back of your handout, or complete online
https://tinyurl.com/surveyScientificWriting

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Scientific Writing

RESOURCE NOTES

Table of Contents

1. Some writing tips

Tyrone Pitt - Journal editor

- Make sure that you have something of substance to say. Just because you have done a study or developed an experimental strategy does not mean that the work merits publication. There are too many 'me-too' papers and 'salami slicers' (2 or 3 papers when 1 would be better) around.
- Tell a story with a beginning, middle, and end. What was the gap in the literature? How do you intend to fill it? How did you do it? What results did you get? Do you need all the Tables, Figures? Were results novel, confirmatory, predictable? How does the study take the subject forward and which aspects need to be explored further?
- When writing, keep it simple and logical, avoid thesis type introductions and phrase the question being asked, make sure the methods can be reproduced but avoid padding, ensure that the text does not duplicate the tables and figures but complements them, avoid repetition, make the discussion lively and interesting as this should be the best part of the paper. If an author struggles too much with the discussion this should tell them that perhaps the paper doesn't have that much to say. General rule: less is more!
- Choose a journal according to the subject matter and follow instructions to authors assiduously as editors get grumpy otherwise.

Allen Cheng - Menzies School of Health Research – on journal publication

- It gets easier with practice
- Write the paper before you get the results (i.e. have an a priori hypothesis) - you should be able to drop in the numbers and alter the discussion afterwards
- Don't take reviewers comments personally and if its accepted by the first journal you submitted it to, you should have aimed higher

Joseph McCormack – Journal editor

- What audience are you trying to reach? Are your article and choice of journal targeting them?
- Make sure the final sentence of your abstract delivers the message - frequently this will be the only one read.
- Be concise. Use this sentence as an example.

Jonathan Carapetis – Telethon Kids Institute – on Journal publication

- Cut the crap. No unnecessary words or flowery prose. This is scientific writing not creative writing.
- Figure out before you start writing what are the 2 or 3 (max) main messages you want the reader to take away. These messages should be in the abstract and the last 1-2 paragraphs. They will also help you to edit the article at the end. Anything that detracts from the main messages must go.
- Don't be precious. Cutting data, tables, figures etc, almost always improves a paper. Just because you spent lots of time producing it doesn't make it indispensable.
- A picture (or in this case a table or figure) is worth a thousand (well, not quite) words. And DON'T restate in the text what appears in tables or figures.

- Don't assume that the reader already knows a lot about the subject. Simple explanations and simple words are always best.
- An introduction should state only what is absolutely necessary to set the scene for the rest of the paper. It is not a thorough literature review.
- The discussion should relate specifically to the results (but not repeat the results), but should also put the results in some perspective.

Dan Sexton – Duke University

- Schedule time to write. I prefer early AM before undertaking any other task; others may prefer late in the evening, weekends etc. Whatever time is chosen the time should be definite and the schedule followed even if you are not in the mood or "not ready" to write. If this occurs just sit there but don't ignore the commitment. When faced with a big project I typically get up and work on the writing/re-writing, outlining for short daily or every-other-day sessions. Typically a session will be 30 minutes, rarely is it >60 minutes. It is easier and better for me to work for 30 minutes 4 or 5 days a week than to try to find time for a 3 hour session. Actually I often get rolling after 20 or 30 minutes and keep working for another 30 minutes--rarely longer.
- Make an outline. If done correctly, each outline becomes a paragraph and voila--the paper takes shape. For example, a typical paper has an introduction, methods, results and discussion. A typical outline of the introduction consists of 3 or 4 basic points, each of which can easily be made into a paragraph. For example , a typical introduction may have the following components:
    - Historical background about the disease or problem
    - Pre-existing research or literature about the topic
    - Unresolved issues about the topic or problem
    - How or why was this study done?
- Make a rough draft. Don't worry about getting each paragraph perfect when you start--a rough or even crude first draft is a critical first step. This rough draft that can be later revised or re-revised or even re-re-revised.
- Like a glass of Guinness or a newly opened bottle of wine, your writing should be allowed to sit for a time before used (or revised). I often write draft #1 knowing that it isn't very good and then I let it sit for a few days or longer. When I return to it I am often surprised how easy it is to revise and improve it whereas the same improvement would have been far more difficult if done immediately after writing draft #1.
- Poor organization is the reason many papers are hard to read. Think of your paper as a set of stacked blocks that must be in logical order. Each block is a paragraph. Paragraphs are grouped into sections which are in turn further grouped in a logical order. Each paragraph should contain one key idea. The lead sentence of each paragraph clearly states this idea. Subsequent sentences expand, clarify or further develop these ideas. Paragraphs should rarely contain more than 3-5 sentences.
- Put the subject before the verb. "Jack and Jill went up the hill NOT Up the hill went Jack and Jill".
- Don't surprise the reader with fancy sentences. Keep it simple and keep your sentences short. Short direct sentences may initially strike you, the writer, as boring. However, long vague complex sentences usually confuse your reader. Readers appreciate not having to decipher your syntax.

- Use linking words to tie together sentences in a paragraph and then use linking phrases to tie together paragraphs. e.g. "The clinical diagnosis of RMSF is often difficult. There are three main reasons diagnosis is difficult. First.... Second and Third....." The next paragraph could start out as follows: "In addition to difficulties in making a clinical diagnosis, there are also difficulties in confirming a diagnosis with laboratory tests." Note that each sentence in the paragraph is linked. And the two paragraphs are further linked. In a sense, the leader is patiently being taken by the hand and led through a discussion. Readers appreciate such guidance in my experience

Ruth Armstrong – Journal editor

- Find something new to say...and know why it matters
- Choose a format... and then follow it
- Read your work out aloud and listen to yourself
- When you have the "final" version, sleep on it... and ask a literate non-expert to read and comment
- Read the "advice to authors"... and follow it!
- Read back issues of the your chosen journal... and copy style, length and format
- Target your journal correctly.
- Read and follow the ICMJE's "Uniform Requirements for Manuscripts Submitted to Biomedical Journals: Writing and Editing for Biomedical Publication" (www.icmje.org)

David Thomas – Menzies School of Health Research

- Imagine your audience, then write for them. What do you need to tell them about your work (and what don't they need to know!). Be kind to them. Imagine standing next to them as they read – if you feel yourself wanting to apologise for a section, saying 'a bit boring you might want to skip this', then re-write the section or drop it.
- Read, and keep reading, especially when you are writing yourself. Read theses, academic writers you admire for their writing, non-academic writers you admire. Read with a writer's eye and ear. Think about why you think a piece was well written – what tips are there for your own writing.
- The conclusion is not a summary. This is often the hardest intellectual work of a thesis, but takes a short time compared to the slog of the rest. Please don't rush it and just summarise what you have already said. How well you answer the 'so what' question is the difference between an adequate and a very good thesis. Before you start try writing a one-pager that describes what your thesis adds to the academic conversation.
- Your readers want to know your argument about what you found, not a story of what you did. You can quickly describe your journey in the acknowledgements or very briefly in the Introduction. Your thesis should flow to tell the story of your argument, not I did this, found this, then did this, etc.

2. Authorship

“Authorship .. conveys responsibility. Authoring a scientific paper implies an unqualified endorsement of the quality and integrity of the work performed as well as the appropriate distribution of credit for that work. You can only assume responsibility if you were intellectually engaged in the work and in writing the manuscript. Assuming the responsibility that goes with authorship is not only an ethical obligation, but also a debt we owe for the patronage of taxpayers and private benefactors.”
K. Strange, Am J Physiol Cell Physiol 2008 (listed at the end of this document – please read – short and excellent).

“Authorship is also the primary mechanism for determining the allocation of credit for scientific advances and thus the primary basis for assessing a scientist's contributions to developing new knowledge.” from The Guidelines for the Conduct of Research in the Intramural Research Program at NIH.

“Authorship obviously conveys professional benefit. Students in many biomedical research graduate programs cannot earn a Ph.D. without publishing one or more first-authored papers. Promotion and tenure at research institutions are determined in part by publication. External professional recognition, including extramural funding, requires publication as a demonstration of research innovation, productivity, independence, and expertise in a research area. Awarding authorship to someone who has not contributed significantly to a scientific investigation inappropriately and dishonestly conveys benefit to them. It can also reduce appropriate benefit to those who actually contributed to the work” K. Strange, Am J Physiol Cell Physiol 2008

2.1. Criteria

- All requirements for authorship must be met: this means contributions to
    1. Conception and design, or analysis and interpretation of data; **AND**
    2. Drafting the article or revising it critically for important intellectual content; **AND**
    3. Final approval of the version to be published; **AND**
    4. Agree to be accountable for all aspects of the work; ensure questions related to accuracy or integrity of any part of the work are investigated and resolved
- Must not put people on “to be nice” or to show you are grateful - Use acknowledgments for these people – and make sure the person being acknowledged is aware of this
- There should NOT be a “cast of thousands” – it’s not possible for large numbers of people to meet all the authorship criteria
- Acquisition of funding, collection of data, or general supervision of the research group, alone, does not justify authorship
- Authorship means being able to take public responsibility

Examples of authorship gone wrong (in part from K. Strange article)

- “The paid employee” e.g. those collecting or processing specimens without other contributions
- “Hangers on” – every single person working in a team/laboratory/department
- “Coercive authorship”: Heads of department automatically expecting authorship, or worse still, “senior” authorship - but actually scientific fraud and a form of professional misconduct.
- “Honorary or gift” authorship – “gesture of respect”
- "Mutual support" authorships – doubling up to increase apparent productivity
- "Ghost authors" – deceitful omission of an author – where bonefide academics give their name to a paper that is actually ghost written by a professional writer (e.g. drug companies); similarly:
- Denial of authorship – where people contribute in good faith to generating data/design issues (e.g. statisticians) but are not included in the authorship list
- Duplication authorship: publication of the same work in multiple journals

2.2. Order

- Generally first author = person writing the paper
- Authors then follow in order of contribution
- Ordering of other authors may be based on various criteria
    - “last position” may be considered as important as “first position”
- Be aware that Medline and some other systems only list the first three positions
- Senior authors (last position): are those who "generally direct, oversee, and guarantee the authenticity of the work reported" and "implicitly take responsibility for the work's scientific accuracy, valid methodology, analysis, and conclusions. McKneally M. 2006

The following table is Table 3 in K.Strange: Authorship: Why not just toss a coin?

Author Category	Contribution and Responsibility to the Work and Publication
First author	• Fulfils ICMJE authorship criteria. • Performs bulk of the experimental work.
Senior author	• Fulfils ICMJE authorship criteria. • Typically the last person on an authorship list. • Directs, oversees, and guarantees the authenticity of the work. • Takes responsibility for the scientific accuracy, valid methodology, analysis, and conclusions of all work described in the paper. • Able to explain all of the results described in the paper.

Corresponding author	• Fulfils ICMJE authorship criteria. • Typically assumed by the first or senior author. • Communicates with editors and readers. • Provides specific information on the contributions of all co-authors to the paper. • Ensures that all authors are aware of and approve the submission of the manuscript, its content, authorship, and order of authorship.
Middle/contributing author(s)	• Fulfils ICMJE authorship criteria. • Contributions do not rise to those of first or senior author. • Order of middle/contributing authors should reflect their relative contributions to the paper.

2.3. Websites on authorship

- Allen L., O'Cpnnell, A and Kiermer, V (2019) How can we ensure visibility and diversity in research contributions? How the Contributor Role Taxonomy (CRediT) is helping the shift from authorship to contributorship. Learned Publishing, 32: 71-74. https:///doi.org/10.1002/leap.1210

- Authorship: Who's on first?" Dance A. Nature: (2012):489;591-593 https://www.nature.com/articles/nj7417-591a

- The vexed question of authorship: views of researchers in a British medical faculty. BMJ (1997) 314 : 1009. http://www.bmj.com/content/314/7086/1009.full

- Authorship and contributorship http://resources.bmj.com/bmj/authors/article-submission/authorship-contributorship

- Selected references on authorship. Council of Science Editors: http://www.councilscienceeditors.org/i4a/pages/index.cfm?pageid=3407

- Authorship: Why not just toss a coin? K.Strange http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2544445/

- Put my name on that paper: Reflections on the ethics of authorship. M McKneally. http://www.ncbi.nlm.nih.gov/pubmed/16515898

- Deciding authorship order. Brennan PM, Jubb A, Baillie JK, Partridge RW (humorous article) BMJ 2013*;* 347 doi: https://doi.org/10.1136/bmj.f7182 (2013)

- Honorary and ghost authorship in high impact biomedical journals: a cross sectional survey. Wislar JS, Flanagin A, Fontanarosa PB, DeAngelis CD BMJ 2011*;* 343 doi: https://doi.org/10.1136/bmj.d6128 (Published 25 October 2011)

3. Useful websites and articles

3.1. Training in research communication planning:

- Training in research communication planning. Research for Impact. University of Cape Town
  https://www.coursera.org/lecture/research-for-impact/planning-for-effective-research-communication-part-i-ICd7W

3.2. Getting Stuck and Getting Started

- Kearns H., Gardiner M. Waiting for the motivation fairy. Nature 472, 127 (2011)
  https://doi.org/10.1038/nj7341-127a

- Kearns H., Gardiner M. Turbocharge your writing today. Nature 472, 127 (2011)
  https://www.utas.edu.au/__data/assets/pdf_file/0020/470711/Turbocharge-Workshop-Article-in-Nature-Journal.pdf

- Borja A. 11 steps to structuring a science paper editors will take seriously. Elsevier (2014)
  https://www.elsevier.com/connect/11-steps-to-structuring-a-science-paper-editors-will-take-seriously

- Ruben A. How to write like a scientist. Science mag. (2012)
  https://www.sciencemag.org/careers/2012/03/how-write-scientist

4. Thesis writing and university guides

4.1. University of Melbourne

- Writing my Thesis.
  http://gradresearch.unimelb.edu.au/preparing-my-thesis/writing-the-thesis

4.2. UWA Graduate Research School

- Graduate Research School Zoom Webinars
  http://www.postgraduate.uwa.edu.au/students/resources/seminars

- UWA Writing Communities
  http://www.postgraduate.uwa.edu.au/students/resources/communities

- UWA Graduate Research School Workshops
  http://www.postgraduate.uwa.edu.au/students/resources/workshops

4.3. Curtin University – Higher Degree by Research

- https://students.curtin.edu.au/essentials/higher-degree-by-research/resources-development/
- https://students.curtin.edu.au/essentials/rights/academic-integrity/

4.4. Edith Cowan University – Academic Writing Guide

https://ecu.au.libguides.com/sb.php?subject_id=81955

5. General academic writing

- Guidelines on style for scientific writing (NZ): www.sportsci.org/jour/9901/wghstyle.html
- Advice on academic writing (Canada): http://www.writing.utoronto.ca/advice
- The Writing Centre: https://writing.wisc.edu/handbook/grammarpunct/commonerrors/
- Grammar and punctuation: http://jacklynch.net/Writing/
- General writing: https://owl.purdue.edu/owl/general_writing/index.html
- 25 commandments: https://www.theguardian.com/science/blog/2011/jan/19/manifesto-simple-scribe-commandments-journalists?CMP=twt_gu
- Writing and Revising: https://www.uvic.ca/hsd/nursing/undergraduate/transfer/resources/writing/index.php
- Wordiness: http://www.writing.utoronto.ca/advice/style-and-editing/wordiness
- Unbiased language: http://www.writing.utoronto.ca/advice/style-and-editing/unbiased-language
- "Uniform Requirements for Manuscripts Submitted to Biomedical Journals: Writing and Editing for Biomedical Publication" https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3142758/
- Writing Clear Science: https://www.writingclearscience.com.au/
- Coursera: https://www.coursera.org/learn/sciwrite

6. Titles

- Making your research paper discoverable: Title plays the winning trick. Kumar MJ 2013
  http://mamidala.wordpress.com/2013/08/11/making-your-research-paper-discoverable-title-plays-the-winning-trick/

- Heading for success: or how not to title your paper. Huggett S 2011.
  http://www.researchtrends.com/issue24-september-2011/heading-for-success-or-how-not-to-title-your-paper/

7. Getting published

- Guidance for new authors
  http://www.bmj.com/about-bmj/resources-authors/article-submission/guidance-newly-qualified-doctors-get-published
- Choosing a journal:
  https://onesearch.library.uwa.edu.au/discovery/fulldisplay?context=L&vid=61UWA_INST:UWA&search_scope=MyInst_and_CI&tab=Everything&docid=alma99100827902101

8. Research support

CAHS Library - Library at Child and Adolescent Health Service

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A free, open-access resource designed to upskill busy clinical staff and students and improve research quality and impact.

Project Management

17th May 2024 12.30 -1.30pm

Examining the project life-cycle

Efficient and effective project management techniques are essential to move your research project from initiation to execution, through to success.

This seminar provides insights to improve internal communications, foster team alignment, facilitate risk management and improve workflows for smooth processes and engaged stakeholders.

Meet the presenter

Excellent health care, every time
Care ▪ Integrity ▪ Respect ▪ Excellence ▪ Teamwork

Melanie Wright
Director of Research - South Metropolitan Health Service

Mel has 40 years of healthcare experience and for the past 7 years has led strategic transformation of the research environment in SMHS, achieving significant cultural change, to one where researchers are supported, enabled and empowered to conduct high quality local, state and international research projects. Mel is passionate about project management, research and involving consumers with lived experience in every aspect pf healthcare as equal and active partners.

Mel has over 10 years of healthcare project management experience. Mel is also passionate about teaching, coaching and mentoring staff to achieve their very best.

Perth Children's Hospital Auditorium

Level 5, 15 Hospital Ave Nedlands
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or
Access online via Teams or
Watch from a hosted video-conferencing site

- Fiona Stanley Hospital
- Lions Eye Institute
- Pathways in Shenton Park
- Royal Perth Hospital

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A light lunch is provided for our in-person attendees. Bookings are essential.

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2024 Seminar Schedule

Interactive in pdf format
Last updated 2/5/24

#	DATE	TOPIC	PRESENTER	ENROL	WATCH
1	9 Feb	**Research Fundamentals**	Dr Kenneth Lee, UWA	-	2024
2	16 Feb	**Introductory Biostatistics**	Michael Dymock, TKI	-	2024
3	8 Mar	**Social Media in Research**	Dr Amy Page, UWA	-	2024
4	22 Mar	**Introduction to Good Clinical Practice**	Alexandra Robertson, CAHS	-	2024
5	19 Apr	**Research Governance**	Dr Natalie Giles, CAHS	-	2024
6	3 May	**Scientific Writing**	A/Prof Tony Kemp, UWA	REGISTER	2023
7	17 May	**Project Management**	Melanie Wright, SMHS	REGISTER	2023
8	7 Jun	**Research Impact**	Dr Tamika Heiden, Vic	REGISTER	2023
9	14 Jun	**Consent and Participant Recruitment**	Prof Daniel Fatovich and Mark Woodman, EMHS	REGISTER	2024
10	21 Jun	**Consumer & Community Involvement in Research**	Belinda Frank, TKI	REGISTER	2023
11	19 Jul	**Getting the Most out of Research Supervision**	A/Prof Sunalene Devadason, UWA/CAHS	REGISTER	2022
12	26 Jul	**Oral Presentation of Research Results**	Dr Giulia Peacock, CAHS	REGISTER	2023
13	2 Aug	**Sample Size Calculations**	Michael Dymock, TKI	REGISTER	2023
14	9 Aug	**Rapid Critical Appraisal of Scientific Literature**	Dr Natalie Strobel, ECU	REGISTER	2023
15	16 Aug	**Media and Communications in Research**	Peta O'Sullivan, CAHS	REGISTER	2023
16	23 Aug	**Knowledge Translation**	Prof Fenella Gill, Curtin/CAHS	REGISTER	2023
17	30 Aug	**Conducting Systematic Reviews**	Prof Sonya Girdler, Curtin Uni	REGISTER	2023
18	6 Sep	**Involving Aboriginal Communities in Research**	Cheryl Bridge, TKI and co.	REGISTER	2023
19	11 Oct	**Grant Applications and Finding Funding**	Dr Tegan McNab, TKI	REGISTER	2023
20	18 Oct	**Data Collection & Management (REDCap)**	Dr Giulia Peacock, CAHS	REGISTER	2023
21	25 Oct	**Statistical Tips for Interpreting Scientific Claims**	Michael Dymock, TKI	REGISTER	2023
22	1 Nov	**Survey Design and Techniques**	Dr Giulia Peacock. CAHS	REGISTER	2023
23	15 Nov	**Ethics Processes for Clinical Research in WA**	Dr Natalie Giles, CAHS	REGISTER	2023
24	22 Nov	**Qualitative Research Methods**	Dr Lorna Davin, Uni Notre Dame	REGISTER	2023
25	29 Nov	**Innovation and Commercialisation**	Dr Helga Mikkelsen (Brandon BioCatalyst) & Ashley Schoof (TKI)	REGISTER	2022

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Seminars are held from 12:30-1:30pm at Perth Children's Hospital Auditorium and are broadcast live online through Avaya and Teams.
Seminars are recorded and uploaded to our website within a week of presentation. Topics are subject to change with appropriate email notice provided.
Handouts are revised and updated regularly. Attendance certificates are available on request.

CAHS Research Education Program

2024 Research Skills Workshop Series

Setting up Clinical Trials Workshop

20th May 2024 12.00 - 2.00pm

Clinical trials are the benchmark for testing interventions in healthcare. This workshop aims to provide practical advice to clinical researchers who want to gain insight on how to develop and complete their clinical trial on time and within budget. Learn practical aspects of the steps involved in developing a clinical trial from the research idea to protocol development and execution.

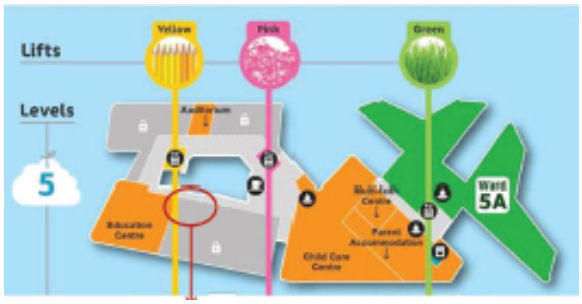
Dr Charlie McLeod

Paediatric Infectious Diseases Clinician Researcher, Research Fellow, Raine Fellow, Deputy Director of the Wesfarmers Centre of Vaccines and Infectious Diseases Telethon Kids Institute

Charlie McLeod is an Infectious Diseases clinician researcher, RAINE clinical research fellow (2021-24), deputy director at the Wesfarmers Centre for Vaccines and Infectious Diseases (Telethon Kids Institute) and a clinical lead in the Infectious Diseases Implementation Research Team at Telethon Kids Institute.

McLeod's interest lies in patient-centred, policy driven research using innovative clinical trial methodologies and analytic approaches. They are currently co-leading the Platform Trial in COVID-19 priming and BOOsting (PICOBOO), an MRFF-funded adaptive platform trial evaluating different COVID-19 booster strategies in immunocompetent Australians.

PCH, level 6 TKI Manda



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2024 Research Skills Workshop Series

Perth Children's Hospital Foundation

The Research Education Program (REP) Research Skills Workshop Series, supported by the Perth Children's Hospital Foundation and the Telethon Kids Institute, offers a series of interactive workshops that focus on building the most fundamental research skills required to undertake clinical research projects.

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Workshops aim to directly build user skills and knowledge in a guided environment, with time to ask questions specific to your own project.

Presented by: CAHS Research Department and invited guests **Location:** PCH, TKI Seminar Room, Level 5 (W)

Topic	Day	Date	Time	Max *(in-person)*
Workshop 1 - Navigating Research Ethics and Governance in WA If you are undertaking a research project or are thinking about becoming involved in research, understanding the review and approval requirements for your research project may appear intimidating. This workshop aims to help you understand the process of ethical and governance review for research approvals at CAHS - includes PCH, CACHS, CAHMS and Neonatology.	Wed	1 May	1.30pm - 3:30pm	**40**
Workshop 2 - Setting up Clinical Trials Clinical trials are the benchmark for testing interventions in healthcare. This workshop aims to provide practical advice to clinical researchers who want to gain insight on how to develop and complete their clinical trial on time and within budget. Come learn practical aspects of the steps involved in developing a clinical trial from the research idea to protocol development and execution.	Mon	20 May	12.00 noon - 2.00pm Level 6 TKI Manda	**40** Register
Workshop 3 - Manuscript Writing Journal publications are an integral part of dissemination of research findings. However, it can be overwhelming to convert several months of research into a succinct manuscript that will be loved by peer-reviewers and attract readers. This workshop is designed to give those who have completed their research projects, practical skills to transform their research data into publishable peer-reviewed literature.	Tue	11 June	2.00pm - 4:00pm	**40** Register
Workshop 4 - Oral Presentation of Research Results Dissemination of research findings is integral in knowledge translation and clinical practice change. Oral presentations provide rapid dissemination of research findings to a target audience. We invite you to a practical session that will provide useful tips, practice sessions and personalised feedback to help deliver an adequate depth of your research findings to various research stakeholders.	Tue	13 Aug	2.00pm - 4:00pm	**40** Register

IMPORTANT

Places are strictly limited and offered on a first-come, first-serve, basis. If you are not able to attend a workshop for which you have registered, please contact Research Education Program support via phone or email to cancel your reservation and/or be placed on the waitlist.

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CAHS Research Education Program

REDCap Workshop Series

Research Electronic Data Capture

Perth Children's Hospital Foundation

The Research Education Program - supported by the Perth Children's Hospital Foundation and the Telethon Kids Institute - offers a series of hands-on workshops that focus on the most integral features of REDCap and its application to your research project data. Workshops aim to directly build user skills in a guided environment, with time to ask questions and work on your own project.
Dates below are still being finalised so check back again for latest version.

Presented by: Research Education Program Research Fellow Dr Giulia Peacock

Location: PCH, TKI Seminar Room, Level 5 (West).

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Topic	Day	Date	Time	Max No *(in person)*
Workshop 1 – Basic Walkthrough	Tuesday	27 Feb	2:30pm to 4:30pm	Watch
Workshop 2 – Intermediate Walkthrough	Tuesday	12 March	1:00pm to 3:30pm	Watch
Workshop 3 – Advanced REDCap - Creating Surveys	Tuesday	30 April	1:00pm to 3:30pm	**40**
Workshop 4 – REDCap Troubleshooting Workshop	Tuesday	28 May	2:00pm to 4:00pm	**40** Register
Workshop 5 – Basic Walkthrough	Tuesday	16 July	1:00pm to 3:30pm	**40** Register
Workshop 6 – Intermediate Walkthrough	Tuesday	20 Aug	1:00pm to 3:30pm	**40** Register
Workshop 7 – Advanced REDCap - Creating Surveys	Tuesday	10 Sep	2:00pm to 4:30pm	**40** Register
Workshop 8 – REDCap Troubleshooting Workshop	Tuesday	15 Oct	1:00pm to 3:30pm	**40** Register

IMPORTANT

Attendance is open to all Department of Health and Telethon Kids Institute staff.

Places are strictly limited and offered on a first-come, first-serve, basis. If you are not able to attend a workshop for which you have registered, please contact Research Education Program support via phone or email to cancel your reservation and/or be placed in another workshop or on the waitlist.

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CAHS Research Education Program

REDCap Research Electronic Data Capture Workshop Series

Workshop 4: Troubleshooting REDCap

28th May 2024 2.00 - 4.00pm

Help is here!

- This workshop explores a more in-depth look at advanced features in REDCap and how to design and distribute a survey through REDCap.
- Enrolment in this workshop requires previous attendance at one of our preliminary sessions (Basic OR Intermediate) or be able to demonstrate that you are already administering projects within REDCap.
- Do you know how to create a project from scratch AND are you comfortable with applying branching logic? If no please register for an Intermediate Workshop. This workshop is for users who are already comfortable using the REDCap interface.

Meet the presenter

Open to all WA Health and TKI staff only.

Dr Giulia Peacock

CAHS Research Education Program Research Fellow

Giulia graduated medical school from the University of Notre Dame Fremantle in 2014. She supplements her clinical work as an Advanced Paediatric Trainee by conducting and publishing research in paediatric cardiology and through active involvement in medical education.

She is currently completing her Masters in Clinical Science, Child Health Research at the University of Western Australia. She hopes to ensure easy accessibility to research education and support, to create best outcomes for all patients.

PCH, TKI Level 5 Seminar Room

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Scientific Writing

Thank you for your interest in this seminar

Please complete this 1-minute evaluation.
Your feedback will help guide future presentations and educational activities.

How did you attend the seminar?

- ○ Live seminar at Perth Children's Hospital
- ○ Hosted video-conference on-site (e.g. FSH, Lions Eye, RPH etc.)
- ○ Online via Avaya or Teams
- ○ Viewed online recording

Please rate your agreement with the following statements:

	N/A	Strongly Disagree	Disagree	Neither	Agree	Strongly Agree
The aims and objectives were clear	○	○	○	○	○	○
The session was well structured	○	○	○	○	○	○
Presentation style retained my interest	○	○	○	○	○	○
The speaker communicated clearly	○	○	○	○	○	○
The material extended my knowledge	○	○	○	○	○	○
The additional resources were helpful	○	○	○	○	○	○

What were the best aspects of the seminar?

What changes or improvements would you suggest?

How did you hear about the seminar?
(you can select multiple answer)

- ☐ Email invitation from Research Education Program
- ☐ CAHS Newsletters e.g. The Headlines, The View, CAHS Research Newsletter
- ☐ "Health Happenings" E-News
- ☐ Healthpoint Intranet Upcoming Events
- ☐ Collegiate lounge screen or other posted promotional material
- ☐ Telethon Kids Institute screen or other posted promotional material
- ☐ Telethon Kids Institute Newsletter
- ☐ Other

Thank you!

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