How to prepare your WCHRI abstract

A step-by-step blueprint for creating a compelling abstract submission

July 21, 2023

Facilitators

- Dr. Zeinab Momeni
  - Previous Postdoctoral Fellow, Augustana Faculty
  - Pillar: Clinical
  - Research focus: Exercise and the menstrual cycle in women with type 1 diabetes.
- Dr. Murilo Graton
  - Postdoctoral Fellow, Obstetrics & Gynecology
  - Pillar: Biomedical
  - Research focus: pregnancy complications and developmental programming.

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Save the date!

WCHRI Research Day 2023

WCHRI's annual Research Day will be held **Wednesday**, **October 18**

This year, our format will be ***in-person****!*

Abstract submission opened on **July 5** and closes **September 7 at 4 p.m.**

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Objectives

- Review the purpose of an abstract
- Discuss how to prepare a research abstract
- Practice first steps of writing your abstract
- Address specific abstract requirements for WCHRI 2023 Research Day

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What is the purpose of your abstract?

- ✓ To present a large amount of information in a concise manner
- ✓ To engage the reader

When are abstracts required?

1. Submitting a manuscript for publication
2. As part of grant applications
3. **Seeking consideration for a conference presentation**

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Why is an abstract important?

- Entry point to decide whether your work is accepted, presented, and in what format
- Some readers will not read beyond the abstract (too little time, short attention span, or they may have to pay to read the full paper…)
- A well written abstract can catapult your work into the view of others; a poorly written abstract can be ignored, discarded, and potentially remembered by others (sully your reputation to some extent)

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A note on structure

Structured: specific headings/sections required

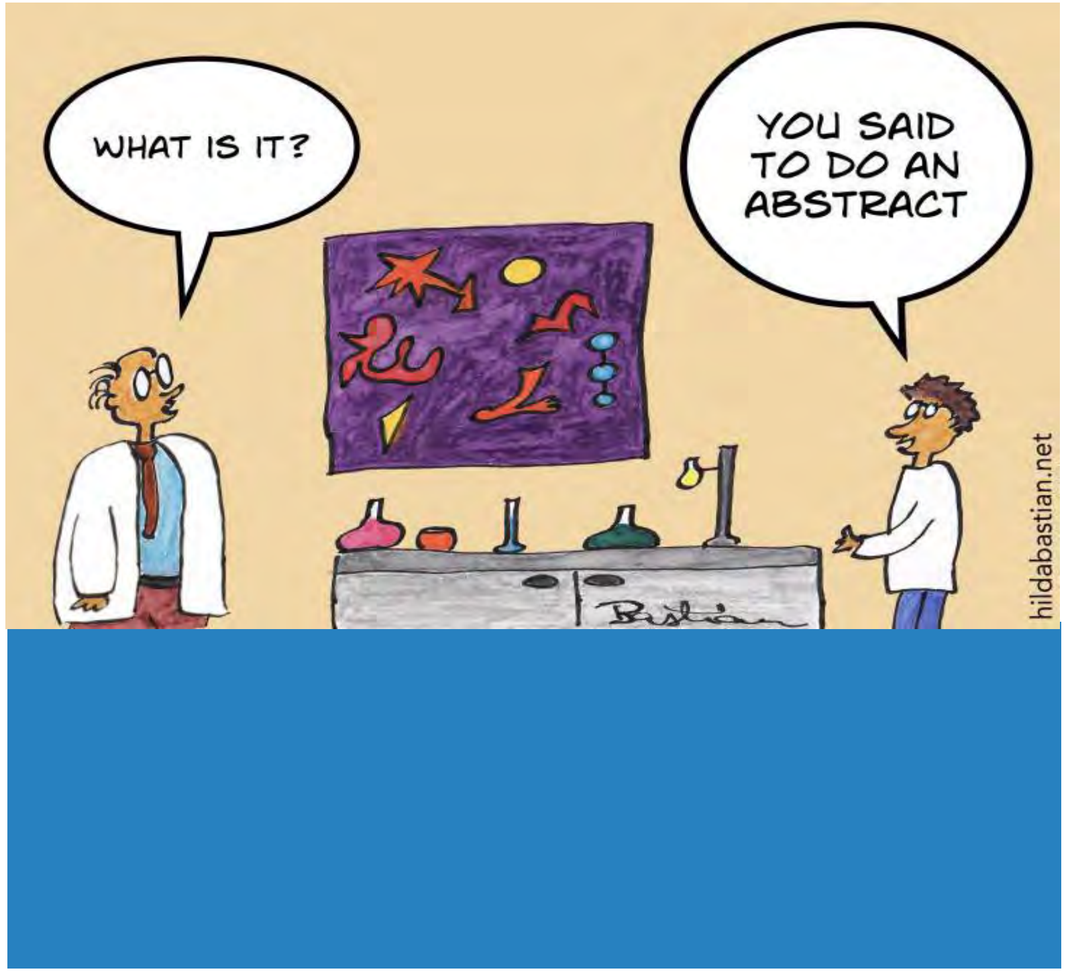
OR

Unstructured: simple paragraph

Both types contain the same things:
i.e., the **why**, **who**, **what**, **where**, **how** and **so what**?

Key Features

1. **Self-contained**: tells a story
2. **Focused**: short — just the highlights
3. **Succinct:** brevity is a virtue!



Standard abstract components

1. Title
2. Introduction and Background
3. Methods
4. Results
5. Conclusions

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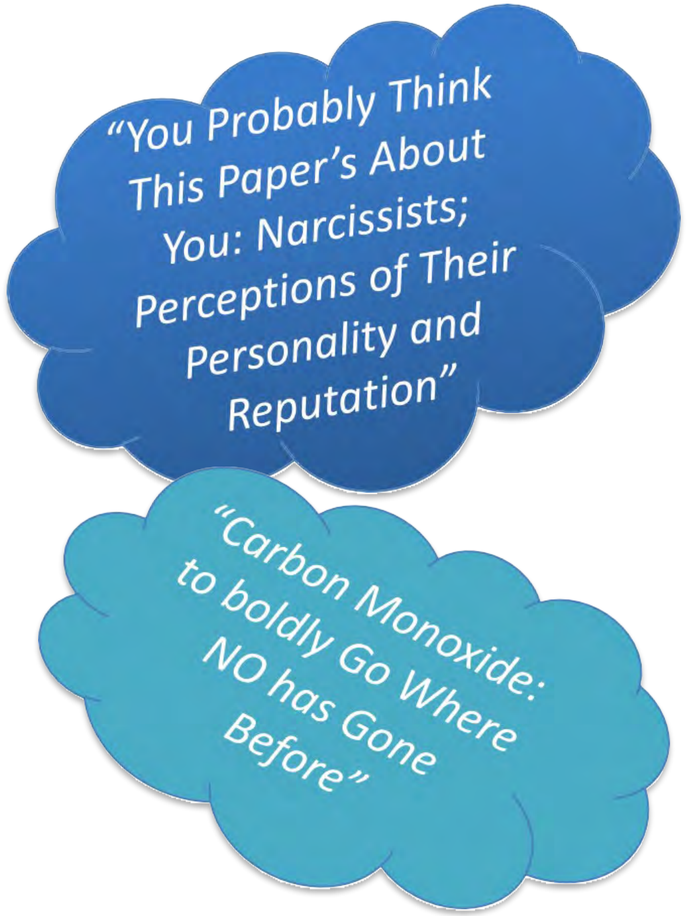
The title

- Your title might be the only thing that people read—use this as an opportunity to "hook" the reader's interest. OK to be 'catchy'
- Avoid making your title too broad, vague, or dense...try to limit to 10-15 words max (WCHRI limits to 265 characters)
- Convey *concepts* involved, the *sample* or population, and *methods* (if possible)
- Focus more on what you found than on what you did*
- Avoid 'question' titles (unless the point is that we do not know)
- Include a verb if possible—easier for the reader to process.



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Did this attention grabber grab your attention?

Take a minute and write a title for your abstract.

Is it catchy?

Do you think reviewers would want to:

Read the abstract/look at the poster/attend your presentation?

Introduction

Introduces your topic of study to readers:

1. **Context**: Why did you do this work? Clearly articulate the purpose—build a rationale
2. **Aim and objective**: Try to include a declarative statement

- Be **succinct—space is at a premium!**
- Remember**: *(positivist) scientific studies are not done to prove that something is true, but to find out truth!***

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Methods – General

- Goal: explain what you did! Keep it simple
- Variable: depends on type of research - Qualitative vs Clinical vs Population Health vs Fundamental
- Always need to include:
- Study design, setting, eligibility criteria, primary outcome, measurement tools
- Sometimes can include:
  - Secondary outcomes

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Methods – Study design

- Needs to be concisely stated
- Observational vs. interventional
- Pilot, case control, case series, cohort study, randomized controlled trial
- Qualitative, quantitative, mixed methods

Methods – Setting

- For any research involving a sample population it is important to note the setting
- Try to include where overall; i.e., Alberta, Canada
- Then specific place; i.e., hospital vs outpatient vs community
- Try to be as specific as possible, without breaching confidentiality

Methods – Sample

- Detail the specific sample or population
- Consider including details about age, gender, ethnic background, species, genotype, drug, and controls
- Try to include the most significant inclusion/exclusion criteria
- Power calculation details are not necessary

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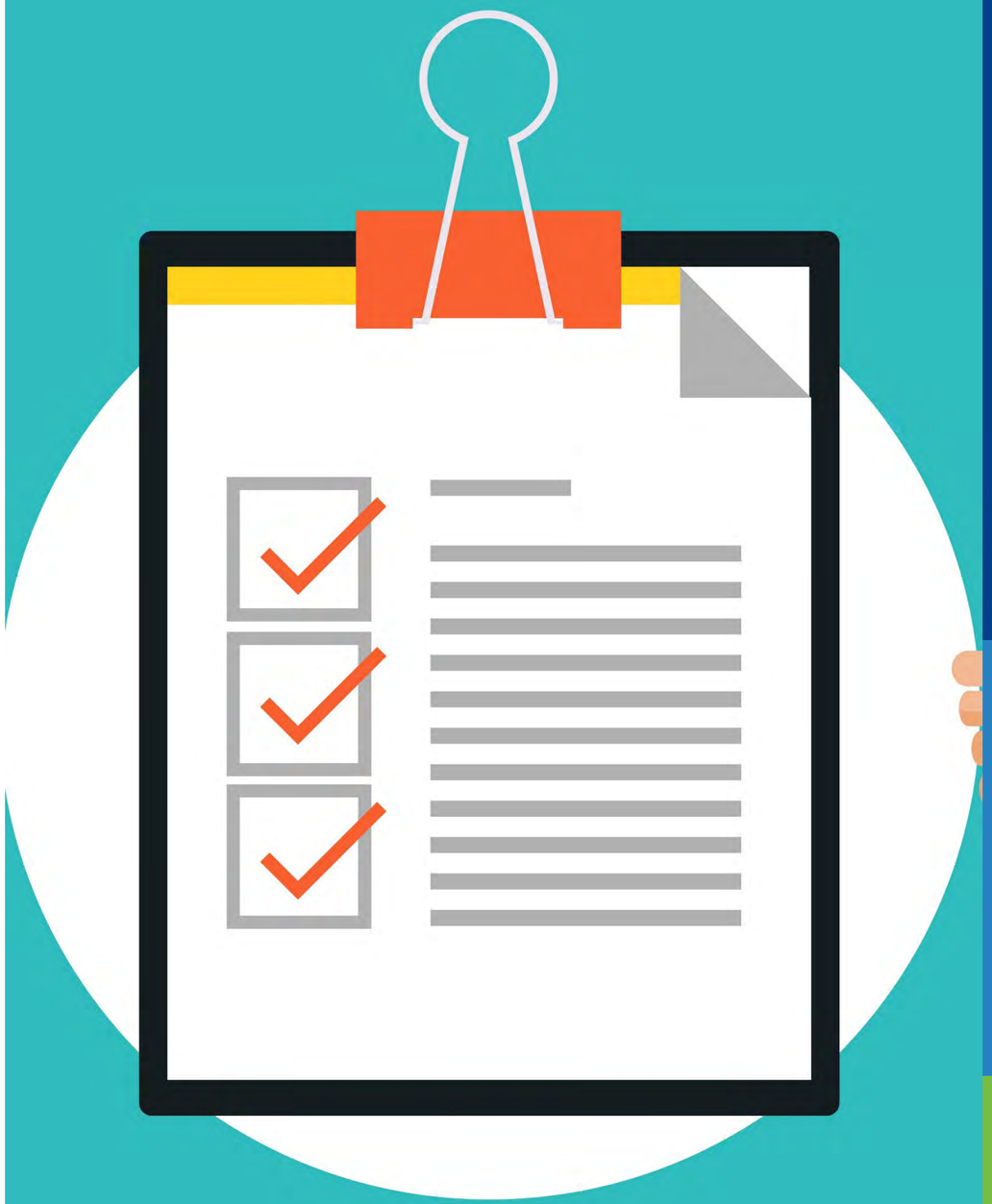
Methods – Measurement tools/instruments

- List the names of the most significant tools, instruments, or surveys used (especially for the primary outcome)
- No need for detailed information on reliability or validity



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Methods – Analysis

- A general statement about how the analysis was done; i.e., Cox proportional regression, or compared to wild-type animals…
- More important for abstracts proposing work to be done

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Results

- Clinical research: Start with a succinct summary of subject characteristics
  - E.g., We enrolled 120 participants (mean age 17.1 ± 0.6 years, 55% female), 81% having CHD and 19% a cardiomyopathy.
- Quantitative: Provide results for primary aim first (even if not significant), including assessment of variation and p values
- Provide results for important secondary aims (if space allows)
- Qualitative: 1-2 descriptive statements (e.g., summary of key themes)

Results

- Do not comment on trends
- Consider a Table or Figure if allowed
- Don’t try to detail ALL results!

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Conclusions

- What is the main point you want your audience to take home? Usually, a single sentence referring back to the purpose.
- If the study is well designed and executed, it hopefully supports or refutes the original hypothesis
- Conclusions must be supported by the Results

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Conclusions

Implications

- Not necessary, but good to have
- Potential impact
- Practice change or support current practice

Limitations

- Not typically in an abstract
- No study is perfect – demonstrates your awareness of this to reviewers

Future Directions

- Shows readers you are thinking of next steps
- Reasonable at WCHRI; would not do at National or International meetings
- Don't do for incomplete projects

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Clinical Example

Title: Transition Preparation for Young Adolescents with Congenital Heart Disease: A Clinical Trial

Introduction:

Adolescents with congenital heart disease (CHD) require lifelong specialized cardiology follow-up and the knowledge and self-management skills needed for chronic disease management. Prior studies have demonstrated the benefit of educational transition interventions for older adolescents. However, the American Heart Association has recommended that transition interventions begin by age 13. We hypothesized that a nurse-led transition intervention will result in improved self-management skills and CHD knowledge among 13–14-year-olds with moderate or complex CHD.

Clinical Example

Methods:

- Single center randomized controlled trial. Participants were randomized to a transition intervention or usual care. The intervention group received a 1-hour individualized session with a cardiology nurse, focusing on CHD education and self-management. The primary endpoint was change in transition readiness score between baseline and 6 months, using the validated TRANSITION-Q, a 14-item instrument. The secondary endpoint was change in MyHeart score (CHD knowledge) between baseline and 6 months.

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Clinical Example

Results:

- We enrolled 60 participants to intervention (n=30) or usual care (n=30). Mean baseline TRANSITION Q scores (range 0-100) were 47±14 (usual care) vs. 49 ± 10 (intervention). At 6 months, TRANSITION Q scores were 44 ± 14 (usual care) vs. 54 ± 9 (intervention). Adjusted for baseline score, TRANSITION Q scores at 1 and 6 months were higher in the intervention group (OR 5.9, 95% CI 1.3-10.5, p=0.01). Mean MyHeart score (range 0-100) increased from 54 ± 24 to 57 ± 22 (usual care) vs. 48 ± 24 to 71 ± 16 (intervention). Adjusted for baseline score, MyHeart scores at 1 and 6 months were higher in the intervention group (OR 18.5, 95% CI 11.5-25.5, p<0.0001). Participants age 14 had a greater increase in TRANSITION Q score at 6 months compared to 13 year olds (p=0.046).

Conclusion:

- A nurse-led transition intervention resulted in improved transition readiness and CHD knowledge among young adolescents.

Transition Preparation for Young Adolescents with Congenital Heart Disease: A Clinical Trial

Andrew S. **Mackie**[1,2], Kathryn N. Rankin[2], Maryna Yaskina[2,3], Jody Gingrich[1], Michelle Schuh[1], Elina Williams[1], Adrienne H. Kovacs[4], Brian W. McCrindle[5], David Nicholas[6], Gwendolyn Rempel[7]

[1]*Stollery Children's Hospital,* [2]*University of Alberta,* [3]*Women and Children's Health Research Institute,* [4]*Oregon Health & Science University,* [5]*Hospital for Sick Children, University of Toronto,* [6]*University of Calgary, and* [7]*Athabasca University*

Background

- Adolescents with CHD require lifelong specialized cardiology follow-up and transition to adult care
- Prior studies have demonstrated the benefit of educational transition interventions for older adolescents (age 16+)
- The American Heart Association has recommended that transition interventions begin by age 13
- 13-14 year olds are developmentally different from older adolescents

Objectives

To determine the impact of a nurse-led *transition intervention* in combination with *usual care,* compared to *usual care alone,* on young adolescents':

1. Self-management skills
2. Participant's knowledge of their CHD

Methods

- Single site cluster randomized control trial
- 2 study arms:
  - Transition intervention + usual care
  - Usual care

Acknowledgement

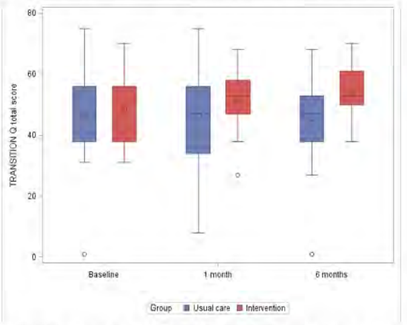
This research was funded by the generous support of the Stollery Children's Hospital Foundation through the Women and Children's Health Research Institute.

A nurse-led **transition intervention** resulted in **improved transition readiness and congenital heart disease knowledge** among young adolescents

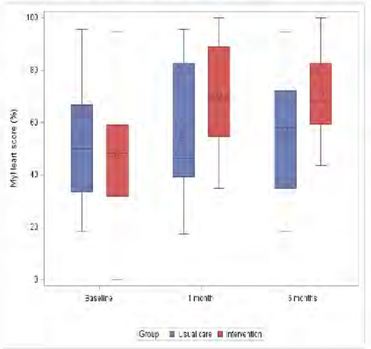
Sample	• 60 participants enrolled • Moderate or complex CHD • 13-14 years old
Intervention	Transition Intervention + Usual Care (n=30) vs Usual Care (n=30)
Outcome Measures *(Baseline, 1 and 6 months post-intervention)*	Change in self-management skills (TRANSITION-Q) Change in CHD knowledge (MyHeart Score)

Results

TRANSITION-Q scores at 1 and 6 months were higher in the intervention group (OR 5.9, 95% CI 1.3-10.5, p=0.01)



MyHeart scores at 1 and 6 months were higher in the intervention group (OR 18.5, 95% CI 11.5-25.5, p<0.0001)



Conclusion

A nurse-led transition intervention resulted in improved transition readiness and CHD knowledge among young adolescents.

CHD knowledge among participants in the intervention group did not decline between 1 and 6 months, likely reflecting the value of the health passport, which may have served as a resource reminding them of what they learned about their CHD.

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Example – basic science

Tet2 Deficiency Rejuvenates Hematopoietic Stem and Progenitor Cells during Ageing

Ageing is accompanied by a significant reduction of hematopoietic competence driven by various causes including epigenetic alternations. Ten-eleven translocation 2 (TET2) has been well delineated as a critical epigenetic regulator that affects hematopoietic progenitor and stem cells (HSPCs) function. Tet2 deficiency confers advantages in clonal expansion of HSPCs and skews myeloid lineage differentiation, giving rise to increased risk of hematological malignancy transformation. TET2 loss-of-function mutations are frequently detected in aged HSPCs, thereby raising the question of how Tet2 deficiency affects HSPCs self-renewal and lineage specification during ageing.

To address this question, we harvested HSPCs from wild-type (WT) or Tet2KO young and aged donor mice, followed by competitive bone marrow transplantations to monitor age-dependent functional alterations. Despite the enlargement of the HSC pool size (the number of cells with regenerative potential) in aged mice, the aged WT HSPCs exhibited lower self-renewal capability and displayed impaired hematopoietic differentiation when competed against young stem cells. However, we found that both aged and young Tet2-deficient HSPCs shared comparable peripheral blood reconstitution, indicating no engraftment defects were caused by age for Tet2-deficient HSPCs. In parallel, scRNA-seq analysis revealed that Tet2 deficiency and age promoted the expansion of HSC compartment in a synergistic manner, leading to the largely augmented pool size of Tet2-deficient aged HSCs. But unlike aged WT stem cells, these expanded aged Tet2-null stem cells retained high self-renewal potential and possessed a competitive advantage of lineage outputs both in vitro and in vivo. Overall, through conducting repopulation assays and single-cell transcriptomes analysis, we have demonstrated that Tet2 ablation alters age-dependent HSC functional decline, revealing a disparate ageing process in the Tet2-deficient haemopoietic system.

P1-A-1

Investigating the developmental programmed cell death of Cajal-Retzius cells in the hippocampus

Zain H. Patel*, Mi Wang*, Qiumin Tan
Department of Cell Biology, University of Alberta
Edmonton AB, T6G 2H7, Canada
** These authors contributed equally to this work*

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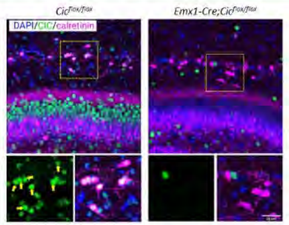
FACULTY OF MEDICINE & DENTISTRY

Background

- Cajal-Retzius (CR) cells are a transient group of neurons that are important for development of the brain (1-2).
- They appear during embryogenesis and secrete reelin to support synaptic formation and neuronal migration (3-4).
- In the mouse neocortex, ~95% of the CR cell population die during early postnatal development via apoptosis (5).
- In the hippocampus, 80% of the CR cell population undergo programmed cell death via an unknown, non-apoptotic mechanism (1-2, 6).
- Capicua (Cic) is a transcriptional repressor involved in neurodevelopment (7). Data from our lab indicates that Cic is highly expressed in CR cells, and that Cic regulates CR cell death.
- The aim of this study is to elucidate the mechanism by which hippocampal CR cells die.

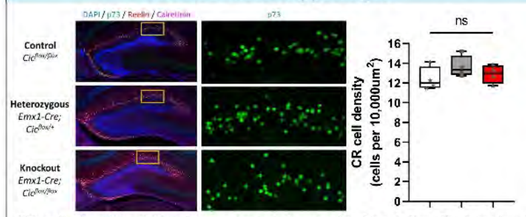
Results

Cic is efficiently deleted from CR cells via Emx1-Cre



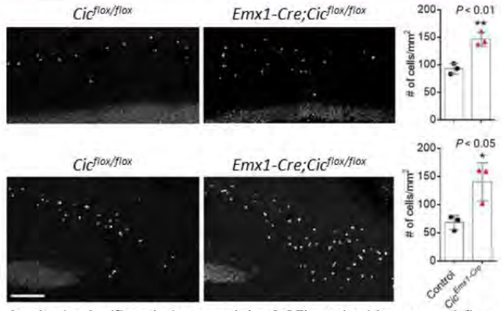
Cic (green) is highly expressed in, and efficiently deleted from CR cells (magenta) in the *Emx1-Cre Cic* knockout mouse. Calretinin-positive CR cells are distinguished by their tadpole-like morphology.

Early postnatal CR cell density is unaffected in the *Emx1-Cre Cic* knockout mouse hippocampus



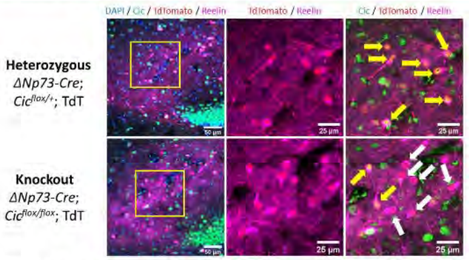
CR cell density at the hippocampal fissure in *Emx1-Cre Cic* knockout mice aged postnatal day 5 (P5) are similar between control (white), heterozygous (grey) and knockout (red) mice. Data were analyzed via one-way ANOVA with a significance level of 0.05.

CR cell density is increased in the adult *Emx1-Cre Cic* knockout mouse hippocampus



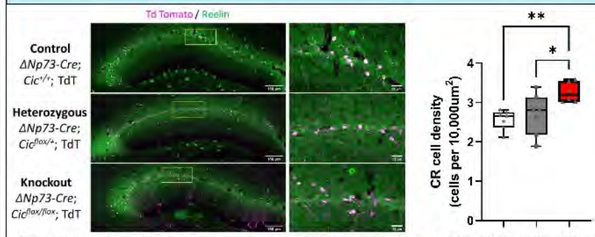
CR cell density is significantly increased ($p<0.05$) at the hippocampal fissure (**top**) and the stratum lacunosum moleculare (**bottom**) in 11 week-old *Emx1-Cre Cic* knockout mice.

Generation of a Cajal-Retzius cell-specific *Cic* knockout mouse model



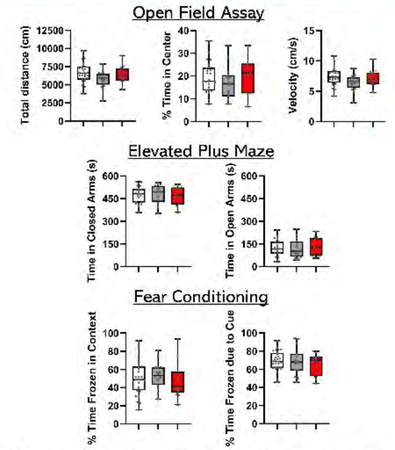
Cic was efficiently and specifically deleted from 76%±15% of CR cells in the hippocampus in the *ΔNp73-Cre* Cic KO mouse model. CR cells are identified by co-localization of TdTomato and Reelin signal. Yellow arrows point to Cic-positive CR cells. Cyan arrows point to Cic-negative CR cells.

Cic regulates CR cell death via a cell-autonomous mechanism



CR cell density at the hippocampal fissure of 7 week-old *ΔNp73-Cre* Cic KO mice (red) is significantly greater than control (white) and heterozygous (grey) mice. Data were analyzed via one-way ANOVA with a significance level of 0.05.
* $p<0.05$; ** $p<0.01$

Increased CR cell density in the adult hippocampus does not affect certain behaviours



Deleting Cic specifically from CR cells does not affect spontaneous locomotor activity, anxiety and context- and cue-dependent memory. Data were analyzed via one-way ANOVA with a significance level of 0.05. Legend: $Cic^{flox/flox}$ (white; N=29); *ΔNp73-Cre;* $Cic^{flox/+}$ (grey; N=16); *ΔNp73-Cre;* $Cic^{flox/flox}$ (red; N=15)

Future Directions

- Single-cell RNAseq of Cajal-Retzius cells from the dentate gyrus of the *ΔNp73-Cre Cic* knockout mouse to determine the mechanism of CR cell death in the hippocampus.
- Behaviour assays to evaluate effects of deletion of Cic from CR cells on spatial learning and memory.

Acknowledgements

We acknowledge the support of the Canadian Foundation for Innovation (CFI), the Canadian Institutes of Health Research (CIHR), the Natural Sciences and Engineering Research Council of Canada (NSERC), the Women and Children's Health Research Institutes (WCHRI), and the Government of Alberta. Dr. Qiumin Tan is a Canada Research Chair in Molecular Genetics of Human Disease. This research was undertaken, in part, thanks to funding from the Canada Research Chairs program.

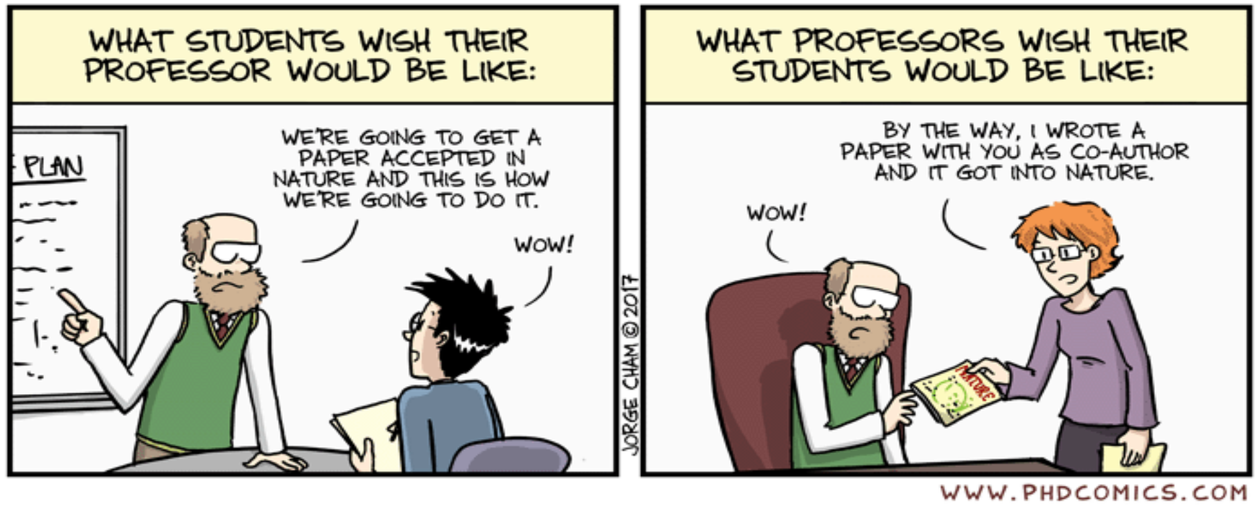
Scan QR code for reference list.

Authorship

- Should only include people who did the study: conception, design, data gathering, number crunching and writing
- Generally, in order of contribution, with senior author last

  (author order can vary by field)

Refer to:
"Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journal":
http://www.icmje.org/icmje-recommendations.pdf



Citations

- Typically **not** included
- Consider space is at a premium

Abbreviations

- Avoid/minimize!
- Consider space is at a premium
- If NEEDED, write in full for first use

Linguistics style tip 307. No linguistics abstract (henceforth LA) should contain more than two totally novel abbreviations (henceforth TTNA). Abstracts that violate TTNA impose an unreasonable burden on the poor tired and cranky abstract reviewer (henceforth PTACAR), causing PTACAR to lose track of the TTNAs, and rendering it far more likely than otherwise that LA will be given a lower score than it deserves (henceforth LSTID). LAs that violate TTNA and are consequently LSTIDed by PTACAR deserve the score that they get.

Corollary: Don't introduce a new abbreviation unless you immediately use it, and frequently. Otherwise PTACAR gets really p.o.'ed (henceforth POed) trying to find what the stupid abbreviation (henceforth SA) means on page 2 that was introduced in a parenthesis somewhere on page 1 and never reused. And of course don't introduce any abbreviation that you're never going to use.

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Clinical Example

Title: Transition Preparation for Young Adolescents with Congenital Heart Disease: A Clinical Trial

Introduction:

Adolescents with congenital heart disease (CHD) require lifelong specialized cardiology follow-up and the knowledge and self-management skills needed for chronic disease management. Prior studies have demonstrated the benefit of educational transition interventions for older adolescents. However, the American Heart Association has recommended that transition interventions begin by age 13. We hypothesized that a nurse-led transition intervention will result in improved self-management skills and CHD knowledge among 13–14-year-olds with moderate or complex CHD.

Key Words

- This is how reviewers will be determined — think carefully
- May be different than words in the title
- Typically 3-5

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Example

Antimicrobials: Strategies for targeting obesity and metabolic health?

Murphy EF, Clarke SF, Marques TM, Hill C, Stanton C, Ross RP, O'Doherty RM, Shanahan F, Cotter PD.

Alimentary Health Ltd.; Cork, Ireland; Teagasc Moorepark Food Research Centre; Fermoy, County Cork, Ireland; Department of Microbiology; University College Cork; Cork, Ireland; Alimentary Pharmabiotic Centre; University College Cork; Cork, Ireland; Department of Medicine; Division of Endocrinology and Metabolism and Department of Microbiology and Molecular Genetics; University of Pittsburgh; Pittsburgh, PA USA; Department of Medicine; University College Cork; Cork, Ireland.

Abstract

Obesity is associated with a number of serious health consequences, including type 2 diabetes, cardiovascular disease and a variety of cancers among others and has been repeatedly shown to be associated with a higher risk of mortality. The relatively recent discovery that the composition and metabolic activity of the gut microbiota may affect the risk of developing obesity and related disorders has led to an explosion of interest in this distinct research field. A corollary of these findings would suggest that modulation of gut microbial populations can have beneficial effects with respect to controlling obesity. In this addendum, we summarize our recent data, showing that therapeutic manipulation of the microbiota using different antimicrobial strategies may be a useful approach for the management of obesity and metabolic conditions. In addition, we will explore some of the mechanisms that may contribute to microbiota-induced susceptibility to obesity and metabolic diseases.

KEYWORDS: antimicrobials, firmicutes, gut microbiota, metabolic disease, obesity

Consider Your Audience!

- General or subspecialist population?
- Expert or lay public?
- WCHRI will be broad, including trainees and researchers from a variety of research fields, as well as WCHRI funders and donors.
- Safe target: intelligent non-experts in your field!

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Timing: When to start?

- The sooner the better!
- It will be an iterative process
- Need to have co-authors' input
- Consider asking a non-author to review for clarity

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Follow the Directions!

- READ the DIRECTIONS, BELIEVE the DIRECTIONS, and FOLLOW the DIRECTIONS!!!

- There is significant research in this area and the most common reason for an abstract not being accepted for presentation at a meeting is not following the directions!

Recap: Components

- **What the problem is and why we should care?**
  - ➢Background (identify problem in previous research/common practice or gap in knowledge)
  - ➢Aims or objectives
  - ➢Participants/methods (only essential details)
- Methods/approaches and results
- Conclusions and significance (contributions to the field, clinical practice, novelty)

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What if I don't have data yet?

- WCHRI encourages students in early stages to submit an abstract (if funded, it's a requirement!)
- It is all about you getting experience and feedback
- Present your research question, planned methodology, and potential knowledge gained
- Posters are always judged with consideration of the level and stage of training

WCHRI Research Day
October 18, 2023

Submission deadline: **September 7, 4 p.m.**

Access the registration & abstract submission form

Refer to our **Research Day website** for complete details

wchrird.ca

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ORCID: What and Why?

- Your ORCID is a new field requested by WCHRI

What is ORCID?

- An author identifier for your academic work. Think of like your health card # for your publications and grants.

Why is it needed?

- Having an ORCID identified with this submission will allow WCHRI to track its outcomes.

- It will also ensure that you are credited for this opportunity

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ORCID: How to find and/or get one?

If you already have one:

- Login to your account
- It's the # on the left-hand side of the page underneath your name.

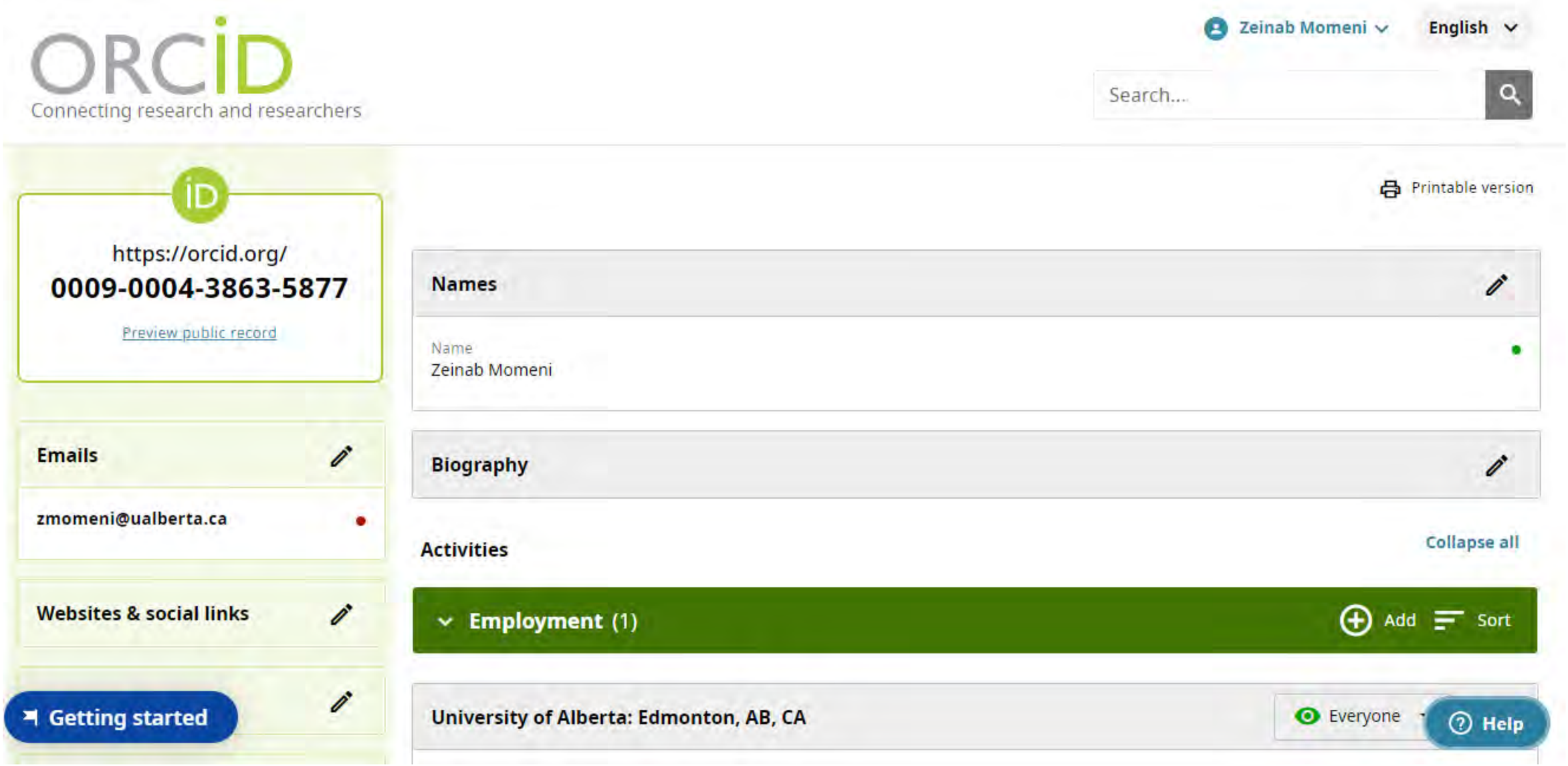
If you think you have one, but you can't remember your login/password:

- When you login, there's a link if you've forgotten this information

To register:

- Use this link to sign up (https://orcid.org/register)
- It's best to keep your account public (don't panic, we'll
- talk about privacy in the next slide)

ORCID: example



ORCID: example

Education and qualifications (0) Add

Add details about where you have studied and educational or professional qualifications you have been awarded.
Learn more about adding education or qualifications to your ORCID record

Invited positions and distinctions (0) Add

Add details of invited positions you have held and awards or prizes you have received in recognition of your achievements.
Learn more about adding invited positions or distinctions to your ORCID record

Membership and service (0) Add

Add details of society or association memberships and donations of time or other resources in the service of an organization.
Learn more about adding a membership or service to your ORCID record

Funding (0) Add

Add grants, awards and other funding you have received to support your work.
Learn more about adding funding information to your ORCID record

Works (0) Add

Add your research outputs such as publications, data sets, conference presentations and more.

Help

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ORCID: use in publications

RESEARCH ARTICLE

Human Mutation HGVS HUMAN GENOME VARIATION SOCIETY WILEY

Novel *CIC* variants identified in individuals with neurodevelopmental phenotypes

Saloni Sharma[1] | Brenna Hourigan[1] | Zain Patel[1] | Jill A. Rosenfeld[2,3] |
Katie M. Chan[2] | Michael F. Wangler[2] | Joanna S. Yi[4] | Anna Lehman |
the CAUSES Study | Gabriella Horvath[6] | Paul A. Cloos[7,8] | Qiumin Tan[1]

Thank you

Questions?

UNIVERSITY OF ALBERTA

Alberta Health Services

STOLLERY CHILDREN'S HOSPITAL FOUNDATION

AWHF
alberta women's health foundation

women & children's health research institute

Abstract scoring and presentation

- Limit abstracts: One abstract per academic member trainee
- Relevant abstracts will be posted on WCHRI Research Day website
- Abstracts are reviewed and recommended for presentation type and relevance
- Presentations are allocated to one of the following formats:
    - 5-minute poster presentations
    - 10-minute oral presentations
- Learning Session: How to prepare your presentation for WCHRI Research Day (September 20, 11:30 a.m.)

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WCHRI Abstract Requirements

- Four sections are required: **Introduction, Methods, Results and Conclusions**
- You must complete the registration/abstract requirements in REDCap.
- You can use symbols, special characters and sub/superscript.
- Copy and paste from a source document into REDCap.
- Maximum 3,300 characters

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Other WCHRI Requirements

- The presenter does not need to be the first author.
- Please make sure you (and your supervisor) proofread your abstract before submission to avoid typos—your submission is final!