

HIGHLIGHTS FROM WINTER 2024

CARLETON

MATHLAB



The MathLab conducts research into the cognitive processes involved in numerical and mathematical abilities. Research projects are designed to study different aspects of mathematical cognition including its development across different ages and cultures. We study basic cognitive processes and numeracy skills such as the retrieval and representation of mathematical knowledge and the application of that knowledge to real-world situations.

AIM SUMMIT 2024

The AIM (Assessment and Instruction for Mathematics) Summit 2024 was a success! We doubled our number of attendees since the last summit, and had speakers from both Canada and the US, as well as 3+ provinces. Big shout-out to every one of the AIM Summit planning committee that helped make this event possible. Thank you to all who attended or presented.

Breakout session leaders: Tracie Anthony, John Mighton, Helena Osana, Jo-Anne LeFevre, Sandy Youmans, Arielle Orsini, Julie Houle, Sarah Powell, Alison Hardy, Sheri-Lynn Skwarchuk, Lisa Monson, Sarah Melo, Scott McKenzie, Ashley Kozak, Blayne Primeau, Heather Douglas, and Vretta inc..

The summit planning committee was made up of MathLab members, thanks for your hard work organising and running the summit:

- Dr. Rebecca Merkley
- Liza Kahwaji
- Dr. Shuyuan Yu
- Leah Marshall
- Ayushi Chitranshi
- Tru Gamble
- Jenna Rice
- Grace Yee



Planning committee AIM founders

COG SCI SPRING CONFERENCE

Cog Sci students of all levels came out to present their research at the first Spring Conference held in person since 2019. Our Math Lab presenters included: Taeko Bourque, Faith Chambers, Ayushi Chitranshi, Liza Kahwaji, Jules Lavoie, Leah Marshall, Jenna Rice, & Grace Yee.



We were so lucky to have Dr. Andy Brook, founder of Carleton Cognitive Science as the keynote speaker. Special thanks to our lab members on the planning committee:

- Taeko Bourque
- Leah Marshall
- Liza Kahwaji
- Ayushi Chitranshi
- Grace Yee

ACADEMIC CV VS RESUME WORKSHOP

The WiCSC+ Trainee Board delivered a workshop aimed at students wishing to learn more about academic CVs and resumes. Members of the Board presented a brief presentation on the differences between a traditional resume and an academic CV. This was followed by an open Q&A session hosted by panelists with a range of academic, alt-ac, and industry work experience.

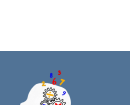
- Speakers:
- Taeko Bourque
 - Liza Kahwaji
 - Vanessa Cunha (University of Ottawa)
 - Elora Wales (University of Ottawa)



PURE CONFERENCE

Undergraduate Psychology students presented their research at the Psychology Undergraduate Research Event (PURE). Congratulations to MathLab members Spencer O'Brien and Alastair Amsden for successfully presenting their thesis work.

PUBLICATIONS

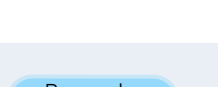


Draper, C. E., Cook, C. J., Allie, R., Howard, S. J., Makaula, H., Merkley, R., Mshudulu, M., Rahbeeni, N., Tshetu, N., & Scerif, G. (2024). The Role of Partnerships to Shift Power Asymmetries in Research with Vulnerable Communities: Reflections from an Early Childhood Development Project in South Africa. *Journal of Cognition and Development*, 25(2), 222-241. <https://doi.org/10.1080/15248372.2023.2215863>

Douglas, H., Coleman, K., LeFevre, J. (2024). Counting On Early Mathematics: Understanding, Assessing, and Building Children's Early Number Skills. In Colgan, L. & Youmans, A. (Eds). In *Beyond 1, 2, 3: Strengthening Early Mathematics Education in Canada*. Canadian Scholars, Toronto.

Lafay, A., Adrien, E., Lonardo Burr, S. D., Douglas, H., Provost-Larocque, K., Xu, C., LeFevre, J.-A., Maloney, E. A., Osana, H. P., Skwarchuk, S.-L., & Wylie, J. (2023). Transcoding of French numbers for first- and second-language learners in third grade. *Quarterly Journal of Experimental Psychology*, 77(2), 393-407. <https://doi.org/10.1177/17470218231174339>

Susperreguy, M. I., Di Lonardo Burr, S., Xu, C., Douglas, H., Bourque, T., Del Río, F., Salinas, V., & Lefevre, J. A. (2024). The role of mathematical vocabulary in the development of mathematical skills for Spanish-speaking students. *Cognitive Development*. 70. 101441. <https://doi.org/10.1016/j.cogdev.2024.101441>



Wege, T. E., Merkley, R., Jasim, S., Ansari, D., & Cheung, P. (2024). "Three yellow stars and three red hearts: Can subset-knowers learn number word meanings from multiple exemplars? *Proceedings of the Annual Meeting of the Cognitive Science Society*, 46(0). <https://escholarship.org/uc/item/1vj8c2v2>

Xu, C., Li, H., Di Lonardo Burr, S., Si, J., LeFevre, J.-A., & Zhuo, X. (2023). We cannot ignore the signs: The development of equivalence and arithmetic for students from grades 3 to 4. *Journal of Cognition and Development*, 25(1), 46-65. <https://doi.org/10.1080/15248372.2023.2245507>

Yu, S., Sidney, P., Kim, D., Thompson, C. A., & Opfer, J. E. (2024). From integers to fractions: The role of analogy in transfer and long-term learning. *Journal of Experimental Child Psychology*, 243, 105918. <https://doi.org/10.1016/j.jecp.2024.105918>

EVENTS



MATHLAB SUMMER PRESENTATIONS

JUNE 21-23
Ottawa ON
CPA 2024
Canadian Psychological Association

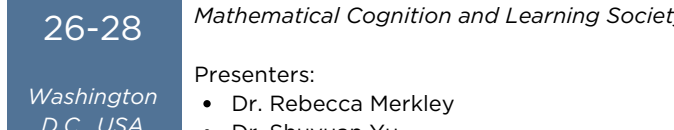
- Presenters:
- Dr. Shuyuan Yu
 - Liza Kahwaji
 - Ellen Doucet
 - Mikayla Perrier

JUNE 25-27
Edmonton AB
CSBBS 2024
Canadian Society for Brain, Behaviour and Cognitive Science

- Presenters:
- Ayushi Chitranshi

JUNE 26-28
Washington D.C., USA
MCLS 2024
Mathematical Cognition and Learning Society

- Presenters:
- Dr. Rebecca Merkley
 - Dr. Shuyuan Yu
 - James Vellen
 - Taeko Bourque
 - Jenna Rice
 - Liza Kahwaji



PROJECT HIGHLIGHTS

AIM

The second AIM summit was held this year! Read above for more information.

EMA@SCHOOL

Preparing for implementing the screener for another year in collaboration with school partners. We are working with Vretta inc., to develop a digital version.

LLAMA

Published papers (check out the new publication above!) and more are in progress!

MATHLAB POTLUCK LUNCH!



The lab got together in February for an informal gathering, some yummy food, and a member photo! We missed our members who weren't able to attend.

Weekly Lab Meetings

Thursdays, 11:30 - 12:30
Location: DT2201 & Zoom

Schedule of topics is on Teams and email reminders will be sent out to the mailing list. To suggest a topic, email Taeko or post in the Teams MathLab chat.

Reading Groups

Reading groups are combined for the summer!

Time & location: Meetings take place during our weekly lab meetings

Read with Us!

We will be reading this paper in an upcoming reading group meeting! Check it out for yourself!

Frey, M., Gashaj, V., Nuerk, H.-C., & Moeller, K. (2024). You can count on your fingers: Finger-based intervention improves first-graders' arithmetic learning. *Journal of Experimental Child Psychology*, 244, 105934.

MEMBERS

[View website](#)



FACULTY

Dr. Jo-Anne LeFevre
Lab Director, Chancellor's Professor of Cognitive Science and Psychology, Chair of Department of Cognitive Science.

Dr. Heather Douglas
Adjunct Research Professor in the Department of Cognitive Science

Dr. Rebecca Merkley
Adjunct Research Professor in the Department of Cognitive Science

RETURNING MEMBERS

Dr. Shuyuan Yu
Postdoctoral Researcher, Cognitive Science

James Vellan
Ph.D. Student, Psychology

Seyeon Kim
Ph.D. Student, Psychology

Taeko Bourque
Ph.D. Student, Cognitive Science

Christian Atta Aglah
Ph.D. Student, Cognitive Science

Abbey Gandhi
Ph.D. Student, Cognitive Science

Steph Gunning
M.Cog.Sci Student, Cognitive Science

Jenna Rice
M.Cog.Sci Student, Cognitive Science

Alexander Kirby
M.A. Student, Psychology

Ayushi Chitranshi
M.Cog.Sci Student, Cognitive Science

Kenda Parsons
M.Cog.Sci Student, Cognitive Science

Liza Kahwaji
M.A. Student, Psychology

Leah Marshall
B.Cog.Sci Student, Cognitive Science

Georgia Livingstone
B.Cog.Sci Student, Cognitive Science

Faith Chambers
B.Cog.Sci Student, Cognitive Science

Grace Yee
PBD Student, Cognitive Science

Abida Kadri
B.A. Student, Psychology

GRADUATING MEMBERS

Nicole Ermuth
B.Cog.Sci Student, Cognitive Science

Liza Kahwaji
B.Cog.Sci Student, Cognitive Science

Alastair Amsden
B.A. Student, Psychology

Sara Nafar
B.Cog.Sci Student, Cognitive Science

Spencer O'Brien
B.A. Student, Psychology

Jules Lavoie
B.Cog.Sci Student, Cognitive Science

Grace Yee
PBD, Cognitive Science

Abbey Gandhi
M.Cog.Sci Student, Cognitive Science

NEW MEMBERS

Tru Gamble
B.Cog.Sci Student, Cognitive Science

Emma Choupina
B.Cog.Sci Student, Cognitive Science

Skylar Haines
B.Cog.Sci Student, Cognitive Science

Philip Di Domenico
B.Cog.Sci Student, Cognitive Science

Sofia Mah
M.A. Student, Psychology

Brooke Smith
M.A. Student, Psychology

Ellen Doucet
Ph.D. Student, Psychology

RESOURCES



KNOWLEDGE MOBILIZATION

Social Media, Infographics, Research Summaries

The Socials Team works to share research from the lab, general knowledge from the field, and the 'hidden curriculum'.

@carletonmathlab
@CarletonMathLab
<https://carleton.ca/mathlab/>

Lab Member Profiles:
Fill out this [form](#) to update / add a Math Lab profile.

To learn more or join us, please contact:

- Liza Kahwaji
- Taeko Bourque
- Leah Marshall

STUDENT ASSOCIATIONS

Joining one of Carleton University's on campus student associations is a great way to meet new people, attend fun events, and pursue your interests outside the classroom.

Undergrad Associations

Cognitive Science Student Association: CCSA
[@cu.cogsciassociation](#)
<https://carletonccsa.wixsite.com/ccsa>

Carleton Psychology Society: PSCarletonU
[@pscarletonu](#)

Grad Associations

Cognitive Science Graduate Students Association: CSGSA
Carleton Cognitive Science Graduate Group
[2023-2024 Executive Board](#)

Psychology Graduate Students' Association
Carleton University: Carleton PGSA
[@pgsa.carleton](#)
<https://carletonccsa.wixsite.com/ccsa>

If you'd like to contribute to the next newsletter, contact [Liza](#).

MATHLAB HANDBOOK

Joining a lab can be confusing, so we have created a MathLab handbook in our Teams files. You can find helpful resources including definitions, links to important files, writing tips and more. Everyone is welcome to contribute to the handbook files.

To access: Teams > mathlab > Main Channels > Math Lab > Files > 0-MathLab Handbook

PICKERING CENTRE

Grad students supervised by Jo-Anne:

You are automatically registered as Student Members of the Pickering Centre. Members have access to funding for conferences, professional experiences, invited speaker series, and more!

- For more info, visit the [Pickering Centre](#)

CU COG SCI GRAD RESEARCH SHOWCASE

Grad students & upper-year undergrads:

Get a behind-the-scenes glimpse at published papers and conference presentations by current students in Cognitive Science.

- For more info, visit the [Grad Research Showcase](#)
- To submit an entry, contact [Taeko](#)

WORKSHOPS & CERTIFICATES

Grad students:

Carleton has Graduate Professional Development workshops ([view schedule](#)). Some of these can count towards paid TA training and/or [Trajectory certificates](#). There are currently 3 certificates available:

- Professional Writing
- Communications & Engagement
- Research Management

DON'T MISS OUT! MathLab is on TEAMS. All MathLab content and chats are on teams. If you do not have access, please contact [Taeko](#) or [Jo-Anne](#).