

# Rachel X. Liu

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## Education

**Master of Sciences, Developmental Psychology** 2023 - Present

McMaster University, Canada | GPA: 4.00/4.00

Committee: Drs Gabriel Xiao (Advisor), Janet Werker (UBC), Laurel Trainor

**Master of Arts, Applied Linguistics** 2021 - 2023

Columbia University, USA | GPA: 3.92/4.00 | Advisor: Dr. Howard Williams

Thesis: *Enacting authority as an older sibling* — Finalist for Best M.A. Paper Award

**Bachelor of Arts, English Language & Literature** 2017 - 2021

Wuhan University, China | Highest Honors | GPA: 3.94/4.00

Honors Thesis: *Awareness and endeavor in multicultural American classes: An exploration of the solutions to equity problems from the perspective of quality teacher education*

## Research Experience

**Graduate Researcher & PI (McGurk Study), McMaster Baby Lab** Sept 2023 - Present

Principal Investigator: Dr. Gabriel Xiao

- Conduct 80+ eye-tracking experiment sessions to investigate the audiovisual speech integration in prelinguistic infants, leading all stages from ethics protocol to data collection, advanced data analysis, and manuscript writing
- Mentor an undergraduate thesis student, providing 40+ hours of hands-on training in eye-tracking technology, participant recruitment, data management, and study analysis
- Supervise 3 research assistants, collaborate on 2 research projects, and help manage recruitment and onboarding of undergraduate lab members

**Research Assistant & Co-PI (Lombard Study)** May 2022 - Sept 2023

Cornell University Eleanor J. Gibson Dev Psych Lab (Cornell B.A.B.Y. Lab)

Principal Investigators: Drs. Michael Goldstein & Steven Elmlinger

- Designed and led a Lombard effect experiment to investigate developmental changes in infants' auditory-vocal sensorimotor integration; responsibilities included IRB protocol, literature review, acoustic analysis, and Infant Vocalization Coding Manual
- Established a coding scheme for children's deictic gestures, and conducted time-locked coding of older siblings' gestures across 3 hours of video recordings
- Trained and supervised a research assistant and oversaw 10+ study executions
- Assisted 30+ studies on siblings' infant-directed speech (IDS), infants' conditioned place preference for IDS, and parental development on perceptions of adversity

**Research Assistant, New York University Play and Language Lab** Oct 2022 - Aug 2023

Principal Investigator: Dr. Catherine Tamis-LeMonda

- Analyzed 198 video recordings totaling 13.5 hours from 58 families, coding gestures and math-related actions by caregivers and toddlers during home math activities involving magnet boards and shape sorters

- Transcribed utterances from a 1-hour video of naturalistic mother-infant interactions for the [Play & Learning Across a Year \(PLAY\)](#) project
- Prepared study materials for the implementation of the PLAY project in Hong Kong, including documents for family recruitment, home visits, surveys, and questionnaires
- Translated the MacArthur-Bates Communicative Development Inventories (MCDI) into Mandarin to measure early vocabulary comprehension and production
- Designed 4 figure-drawings depicting embedded embodied actions in naturalistic caregiver-infant interactions

**Research Assistant, Columbia Univ. Language & Literacy Lab**

Sept 2021-May 2023

Principal Investigator: Dr. Carol Hammer, Vice Dean for Research

- Conducted Chinese-English translations for the [Exceptional Coaching for Early Language & Literacy](#) Program; compiled a lab manual and coordinated RA meetings
- Edited 290+ instructional newsletter websites for bilingual preschoolers' caregivers and teachers in 8 languages to support school readiness; created 6 book-reading recordings for Chinese-American toddlers

**Research Assistant, Columbia Univ. Language & Social Interaction Lab** Nov 2021-Oct 2022

Principal Investigator: Dr. Hansun Waring

- Analyzed audio- and video-recorded data on naturally occurring social interactions (e.g., parent-child and trainer-trainee interactions) using conversation and discourse analytic approaches
- Assisted in organizing the 10th Language and Social Interaction Conference

## Publications

Xiao, G., Liu, X., & Potter, C. (in press). *Perceptual narrowing in the domains of faces and language*. In D. Amso (Ed.), *The Oxford Handbook of The Development of Attention, Learning, and Memory*. Oxford University Press.

## Manuscripts Under Review

Liu, X. (2024). *Enacting authority as an older sibling*. *Studies in Applied Linguistics & TESOL*. Manuscript under review.

## Manuscripts in Preparation

Liu, X., Yan, L., Krasotkina, A., & Xiao, N. *Audiovisual integration in prelinguistic Canadian and Chinese infants*. Manuscript in preparation.

Elmlinger, S., Liu, X., Chang, E., & Goldstein, M. *The developmental origins of auditory-vocal integration in human infants*. Manuscript in preparation.

## Presentations

Singh, L., D'souza, D., Rocha-Hidalgo, J., Zjakic, H., Xiao, G., Krasotkina, A., Dillmann, J., Yan, L., Liu, X., Fratacci, A. (2024, July). *Effects of diverse audio-visual experiences on early*

*cognitive development*. Symposium presented at the XXIV International Conference for Infant Studies (ICIS), Glasgow, Scotland.

**Liu, X.**, Yan, L., Goyal, A., Hu, S., Krasotkina, A., & Xiao, N. (2024, June). *Audiovisual integration in prelinguistic Canadian and Chinese infants*. Presented at the University of Toronto Language Research Day, Toronto, Canada.

**Liu, X.**, Yan, L., Goyal, A., Hu, S., Krasotkina, A., & Xiao, N. (2024, April). *Audiovisual integration in prelinguistic Canadian and Chinese infants*. Presented at the McMaster PNB Graduate Research Day, Hamilton, Canada.

**Liu, X.** (2023, October). *Enacting authority as an older sibling*. Paper accepted for presentation at the 11th Meeting of the Language and Social Interaction Working Group (LANSI), Teachers College, Columbia University, New York, USA.

## Posters

Ripley, S., Fang, W., **Liu, X.**, Xiao, G., & Trainor, L. (2024, November). *Bidirectional Effects of Infant-Directed Singing and Speech in Caregiver–Infant Interactions: A Planned Dual Eye-Tracking Study*. Poster presented at the 20th Annual NeuroMusic Conference, Hamilton, Canada.

**Liu, X.**, Yan, L., Goyal, A., Hu, S., Krasotkina, A., & Xiao, N. (2024, July). *Audiovisual integration in prelinguistic Canadian and Chinese infants*. Poster presented at the XXIV International Conference for Infant Studies (ICIS), Glasgow, Scotland.

**Liu, X.**, Yan, L., Goyal, A., Hu, S., Krasotkina, A., & Xiao, N. (2024, May). *Audiovisual integration in prelinguistic Canadian and Chinese infants*. Poster presented at the 53rd Annual Jean Piaget Society Conference, Toronto, Canada.

## Honors and Awards

<b>Research Presentation Award, 2<sup>nd</sup> Place</b> Department of Psychology, McMaster University	2024
<b>International Graduate Studies Committee (GSC) Award Finalist</b> Department of Psychology, McMaster University	2024
<b>Best M.A. Paper Award Finalist</b> Teachers College, Columbia University	2023
<b>\$2,869 Department Fund</b> Teachers College, Columbia University	2022
<b>\$2,637 Higher Education Relief Funding</b> U.S. Department of Education	2022
<b>\$2,000 Excellence Scholarship</b> Teachers College, Columbia University	2022
<b>\$2,000 Excellence Scholarship</b> Teachers College, Columbia University	2021

## Outstanding Undergraduate Award

Wuhan University

## 1<sup>st</sup>, 2<sup>nd</sup>, & 3<sup>rd</sup> Class Scholarship

Wuhan University

2017-2021

## National Approval for Innovation & Entrepreneurship Project

Wuhan University

2020

# Professional Experience

## Zumba Instructor, McMaster Pulse Fitness Centre

Aug 2024 - Present

- Lead high-energy Zumba classes for a diverse group of students, faculty, and staff, consistently attracting 20+ participants per session
- Create an inclusive, motivating environment that promotes physical fitness and mental well-being, enhancing participants' overall lifestyle and wellness
- Collaborate with the fitness team to promote wellness programs and inspire long-term healthy habits within the McMaster community

## Co-founder & CHRO, Youer Consulting International, Inc.

June 2024 - Present

- Co-found a mission-driven company dedicated to expanding educational access and advancing equity for marginalized international students in North America
- Recruit and manage 25+ elite academic advisors, including professors from top American and Canadian institutions, ensuring exceptional expertise and high service quality
- Implement strategic HR initiatives to optimize talent acquisition, streamline performance management, and foster a culture of transparency, efficiency, and accountability
- Assist the CEO and COO in company-wide management, driving innovation and collaboration to enhance academic pathways and support networks for diverse clients

## E-board member, McMaster PNB Department Colloquium

Sept 2023 - Present

- Direct logistics and reception preparation for 15+ colloquium sessions, including speaker scheduling, technical setups, and catering
- Oversee budgets and expenses, coordinating speaker travel and accommodations to optimize departmental resource allocation
- Promote events and increase departmental engagement, attracting 50+ participants per session while ensuring smooth event execution

## Curriculum Development Intern, New Oriental Education Group

Aug 2020 - Mar 2021

- Authored and developed TOEFL and SAT prep books, benefiting over 2,800 students
- Analyzed 10+ core educational products and provided data-driven recommendations, improving content and increasing student engagement by 25%

# Teaching Experience

## Teaching Assistant, McMaster University

Aug 2023 - Present

- Support three courses (Abnormal Psychology, Human Learning & Cognition, Neuroanatomy & Neurophysiology) by holding office hours, grading assignments, and providing feedback to over 300 students

- Lead exam review sessions and assist with course management, including organizing materials and updating grades

### **English Tutor & Academic Mentor, *Various Institutions*** 2017 - 2022

- Tutored 20+ students, from middle school to college, in English grammar, writing, and reading comprehension, providing feedback on 20+ essays to enhance narrative, persuasive, and descriptive writing skills
- Boosted academic performance, helping students raise exam scores by over 20 points and secure 1st place in regional writing competitions
- Collaborated with parents to foster engagement in their children's education and promote positive parent-child dynamics

### **Public Speaking Trainer, *Wuhan University*** Sept 2019 - Jan 2021

- Taught oral English to 16 retired professors, focusing on practical communication through task-based and audiolingual methods
- Offered personalized feedback, improving fluency in conversations and effective use of tone and body language

### **Teaching Support, *Columbia Secondary School*** Jan - May 2019

- Assisted 5 underperforming marginalized students in English Language Arts, resulting in an average improvement of 2.3 points in their reading and writing skills
- Organized 10+ debate sessions and facilitated discussions on social issues and Shakespearean dramas, promoting critical thinking and argumentation skills
- Documented student progress in 8 teaching journals, helping adapt teaching methods for better learning outcomes

## **Professional Development**

Teaching & Learning Certificate of Completion	In Progress
Canada Red Cross Standard First Aid & CPR/AED Level C – Intermediate	2024
International Zumba Instructor License	2024
Violence and Harassment Prevention	2024
AODA and Human Rights Code	2023
Sexual and Related Misconduct Training	2023
Responsible Conduct of Research in Social & Behavioral Sciences	2022
Conflict Transformation & Anti-Oppression Seminar	2022

## **Technical Skill**

**Eye-Tracking:** Eyelink 1000 Plus

**Naturalistic Recording Analysis:** Datavyu, ELAN, Praat, Audacity

**Data Analysis:** R, SPSS

**Software/Tools:** GitHub, Qualtrics, Tableau, InDesign, Pixlr, GIMP, Keynote, Microsoft Office

## **Language**

Full professional proficiency in English and Mandarin; elementary proficiency in French