

# RUO NING (NANCY) QIU

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EDUCATION	San Diego State University (SDSU) & UC San Diego (UCSD)	
	<i>Ph.D. Student in Mathematics and Science Education</i>	2023–Present
	University of British Columbia (UBC)	
	<i>Master of Science in Mathematics</i>	2021–2023
	University of Toronto (UofT)	
	<i>Honours Bachelor of Science with High Distinction</i>	2017–2021
PUBLICATIONS	1. <b>Qiu, R. N.</b> (expected 2025). Exploring students' understanding of a limit of a sequence: Using $\epsilon$ -strip activity with Realistic Mathematics Education framework. In (Eds.), <i>Proceedings of the 27th Annual Conference on Research in Undergraduate Mathematics Education</i> (pp. TBA). Virginia Tech. <a href="http://sigmaa.maa.org/rume/crume2025/232.pdf">http://sigmaa.maa.org/rume/crume2025/232.pdf</a>	
	2. <b>Qiu, R. N.</b> , Rasmussen, C., Carney, D., & Fortune, N. (expected 2025). The impact of an upper division inquiry-oriented content course on prospective teachers: Embracing a critical stance. In (Eds.), <i>Proceedings of the 27th Annual Conference on Research in Undergraduate Mathematics Education</i> (pp. TBA). Virginia Tech. <a href="http://sigmaa.maa.org/rume/crume2025/104.pdf">http://sigmaa.maa.org/rume/crume2025/104.pdf</a>	
	3. <b>Qiu, R. N.</b> , Vadaparty, A., Vintha, S., & Dow, S. (2025). Self-reflective crowds: Surfacing wisdom through emergent scaffolding. In <i>Proceedings of the ACM Collective Intelligence Conference (CI '25)</i> (pp. 169-187). <a href="https://doi.org/10.1145/3715928.3737478">https://doi.org/10.1145/3715928.3737478</a>	
MANUSCRIPTS IN PROGRESS (CHRONOLOG- ICALLY)	1. <b>Qiu, R. N.</b> , Rasmussen, C., Carney, D., Fortune, N., Jacome, N., & Stewart, M. (proposal accepted, full paper in progress). Bridging tertiary and secondary mathematics: Promoting a critical stance in an inquiry-oriented dynamical systems and modeling course. A special issue of <i>Mathematics Teacher Education and Development</i> .	
	2. <b>Qiu, R. N.</b> , Rasmussen, C., Fortune, N., & Carney, D. (in preparation). The impact of an upper division inquiry-oriented content course on prospective teachers: Embracing a critical stance.	
	3. Li, W., Ho, C., <b>Qiu, R. N.</b> , Wang, Y., & Ortner, C. (in preparation). Analyzing frequentist inverse problems in machine-learned interatomic potentials: A theoretical framework.	

RESEARCH  
EXPERIENCE

- Making Upper Division Mathematics Courses More Relevant for Future High School Teachers: The Case of Inquiry-Oriented Dynamical Systems and Modeling**  
SDSU, Graduate Research Assistant, NSF#2337047 Aug 2024 – Present
- Emergent Scaffolding for Knowledge Sharing in Communities**  
UCSD, ProtoLab Feb 2024 – Present
- Investigating Teaching Assistants' Beliefs About Teaching and Learning**  
UCSD, Department of Computer Science & Engineering Fall 2024
- The Chemistry Instrument Review and Assessment Library**  
SDSU, Graduate Research Assistant, NSF#1914996 Aug 2023 – 2024
- Course Sequencing in CSE and Equity Analytics Plan**  
UCSD, Research Rotation Spring 2024
- Examining the Impact of Mathematical Definitions on Students' Writing**  
UofT, Independent Study in Math Education Sept 2020 – Oct 2022
- Exploring Mathematics Models Against Diabetes: Glucose Level Analysis**  
UofT, Fields Institute, Undergraduate Research Assistant Summer 2020
- Measuring Conceptual Knowledge in First-Year Calculus**  
UofT, Research Opportunity Program Summer 2019

CONFERENCE  
TALKS

1. Marcroft, T. A., **Qiu, R. N.**, & Komperda, R. (2025, March). *Patterns in the development and use of education instruments in the Journal of Chemical Education (2010–2020)*. Talk presented at the ACS Spring 2025 National Meeting, San Diego, CA.
2. **Qiu, R. N.**, Rasmussen, C., Fortune, N., & Carney, D. (2025, February). *The impact of an upper division inquiry-oriented content course on prospective teachers: Embracing a critical stance*. Paper presented at the Research in Undergraduate Mathematics Education Conference (RUME 2025), Alexandria, VA.
3. **Qiu, R. N.**, Rasmussen, C., Fortune, N., & Carney, D. (2024, October). The impact of a redesigned differential equations course on prospective teachers: Embracing a critical stance. Talk presented at the American Mathematical Society (AMS) Western Sectional Meeting, University of California, Riverside, CA.
4. **Qiu, R. N.**, Marcroft, T. A., & Komperda, R. (2024, July). *Instrument development and use in the Journal of Chemical Education (2010–2014)*. Talk presented at the Biennial Conference on Chemical Education, University of Kentucky, KY.
5. Smith, K., & **Qiu, R. N.** (2024, February). *Cohort-based program and seminar course for first-year science students*. Facilitated dialogue presented at the 43rd Annual Conference on The First-Year Experience, Seattle, WA.
6. Barresek, K., Li, X., **Qiu, R. N.**, & Siefken, J. (2022, October). *Exploring the effectiveness and usage of math definitions in exam responses*. Talk presented at the Northeastern Conference on Research in Undergraduate Mathematics Education, Online.
7. **Qiu, R. N.**, & Ortner, C. (2022, July). *Estimating interatomic potentials as a Bayesian inversion problem*. Talk presented at the Ottawa Math Conference, Online.
8. **Qiu, R. N.**, & Li, X. (2021, March). *Exploring the effectiveness and usage of math definitions in exam responses*. Talk presented at the Trinity College Undergraduate Research Conference, Online.
9. Bachina, P., **Qiu, R. N.**, Wan, G., & Yang, X. (2020, August). *Testing math models against diabetes: Glucose level analysis*. Talk presented at the Canadian Undergraduate Mathematics Conference, Online.
10. Ing, K., & **Qiu, R. N.** (2019, July). "What makes a good calculus test?": A summer research project. Talk presented at the Canadian Undergraduate Mathematics Conference, Queen's University, ON.

POSTERS	1. Qiu, R. N. (2025, February). <i>Exploring students' understanding of a limit of a sequence: Using <math>\epsilon</math>-strip activity with Realistic Mathematics Education framework</i> . Poster presented at RUME 2025, Alexandria, VA.	
	2. Qiu, R. N., Marcroft, T. A., & Komperda, R. (2024, June). <i>A case study: Comparing instruments in chemistry education and mathematics education with a coding scheme</i> . Poster presented at the UC STEM T <sup>3</sup> PN Conference, University of California, Irvine, CA.	
	3. Qiu, R. N., Marcroft, T. A., & Komperda, R. (2024, April). <i>A case study: Comparing instruments in chemistry education and mathematics education with a coding scheme</i> . Poster presented at the MAA SoCal-Nev Section Meeting, University of San Diego, CA.	
	4. Qiu, R. N., Marcroft, T. A., & Komperda, R. (2024, March). <i>A case study: Comparing instruments in chemistry education and mathematics education with a coding scheme</i> . Poster presented at the SDSU Student Symposium, San Diego State University, CA.	
	5. Ing, K., LeBlanc-Doucet, T., Mayes-Tang, S., Moorooogen, Y., & Qiu, R. N. (2020, January). <i>Measuring conceptual knowledge of first-year calculus</i> . Poster presented at MathEd Forum Research Day, Fields Institute, University of Toronto, ON.	
WORKSHOPS	1. PEER-SoCal (University of San Diego) <i>Regional Field School on Discipline-Based Education Research</i>	July 2024
	2. Critical Issues in Mathematics Education (UC Berkeley) <i>Bringing Innovation to Scale: Teaching-Focused Faculty as Change Agents</i>	Apr 2024
ACADEMIC SERVICES	MSED Graduate Student Council <i>Graduate Student Co-Representative</i>	2025 – Present
	Manuscript Reviews <i>27th Annual Conference on Research in Undergraduate Mathematics Education</i> <i>ACM Collective Intelligence Conference 2025</i>	2024 – Present
	UBC IAM Graduate Student Committee	2023
AWARDS & HONORS	SDSU University Graduate Fellowship	2025–26
	SDSU Presidential Graduate Research Fellowship	2023
	UBC Faculty of Science Graduate Award	2021–22
	UofT Dean's List Scholar	2018–21
	UofT Scholar	2017
PROFESSIONAL & TEACHING EXPERIENCE	Mentor TA, Dept. of CSE, UC San Diego <i>CSE599 - Teaching Methods in Computer Science</i>	Fall 2024
	<b>VERSA</b> Pod Mentor, REU Program, UC San Diego	Summer 2024
	Small Class Instructor, Dept. of Mathematics, UBC <i>MATH101 - Integral Calculus with Applications</i>	Winter 2023
	Graduate Teaching Assistant, UBC <i>MATH200 - Calculus III, MATH444 - Mathematical Research and Writing, MATH105 - Integral Calculus with Applications to Commerce and Social Sciences, &amp; MATH405 - Numerical Methods for Differential Equations</i>	Sept 2021 – May 2023
	Graduate Curriculum Assistant, Dept. of Science, UBC	Summer 2022
	Teaching Assistant, Dept. of Mathematics, UofT <i>MATH223 - Linear Algebra</i>	Sept 2018 – May 2021
	Observation Teaching Assistant, UofT	Sept 2019 – May 2020, Spring 2021
	Remote Course Community Advisor, Work Study Program, UofT	Summer 2020

## SKILLS

**Certificate:** [CIRTL](#) Associate (Math Instructional Skills Workshop & Summer Teaching Institute at UBC)

**Technical:** Qualtrics, Python, Java, Julia, R, MATLAB, SQL,  $\text{\LaTeX}$ .

**Languages:** Mandarin, English.