

## Jack McKoen

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### EDUCATION

University of Alberta, *M.Sc. in Mathematics (Supervisor: Adam Topaz)* Expected 2025

University of Alberta, *B.Sc. Honors in Mathematics, with First Class Honors* 2022

### SCHOLARSHIPS & AWARDS

**Canada Graduate Scholarship - Master's**, NSERC (*\$27 000*) 2024-2025  
Research Proposal: Formalizing the  $\infty$ -Categorical Yoneda Lemma in Lean

**Walter H. Johns Graduate Fellowship**, University of Alberta (*\$7100*) 2024-2025  
top-up award for holding a NSERC CGS-M

**Graduate Recruitment Scholarship**, University of Alberta (*\$5000*) 2023-2024  
“to recruit superior graduate students who have the potential to contribute to the University of Alberta’s community and research”

**Undergraduate Student Research Award**, NSERC (*\$9000*) 2022  
Research Proposal: Formalizing Valuation Theory in Lean

**Murray Thomas Gibson Memorial Scholarship**, University of Alberta (*\$1500*) 2020-2021  
for “superior academic achievement in the honors Mathematics program”

**Jason Lang Scholarship**, Government of Alberta (*\$2000*) 2020-2022  
for academic achievement at an Alberta post-secondary institution

**Dean’s Honor Roll**, University of Alberta 2020-2022  
for academic achievement

**Alexander Rutherford Scholarship**, Government of Alberta (*\$2500*) 2018  
“to recognize and reward academic achievement of senior high school students and encourage them to pursue post-secondary studies”

### EVENT CONTRIBUTIONS

- Jack McKoen, Toward functor quasi-categories in Lean, *Lean Together 2025*, Online, January 2025
- Jack McKoen, Formalizing Category Theory in Lean, *Alberta Graduate Mathematics and Statistics Conference*, University of Alberta, July 2024
- Jack McKoen (as workshop participant), *Formalizing algebraic geometry (AIM Workshop)*, Online, June 2024
- Jack McKoen, Simplicial Homotopies in Lean, *Lean Together 2024*, Online, January 2024

### WORK EXPERIENCE

**Graduate Teaching Assistant**, *University of Alberta* 2023-Present

- conducting tutorials / seminars, grading assignments

**Teaching Assistant, Decima Robinson Support Centre** 2022-Present

- tutoring students for most first and second year mathematics courses

**Undergraduate Teaching Assistant, University of Alberta** 2022

- graded assignments for first and second year mathematics courses

**Teaching Assistant & Grader, Art of Problem Solving** 2019-2020

- assisted in introductory and intermediate mathematics classes by answering questions and directing students
- graded introductory and intermediate mathematics assignments for grades 2-12

### TEACHING & GRADING (at UofA)

**MATH 447 - Elementary Topology, grading** Winter 2025

**MATH 209 - Calculus for Engineering III, grading** Fall 2024

**MATH 102 - Applied Linear Algebra, tutorial instructor, grading** Winter 2024

**MATH 348 - Differential Geometry of Curves and Surfaces, grading** Fall 2023

**MATH 100 - Calculus for Engineering I, tutorial instructor, grading** Fall 2023

**MATH 216 - Introduction to Analysis, tutorial instructor, grading** Fall 2022

### OTHER EXPERIENCE

**IAS \ PCMI Graduate Summer School Participant** July 2024

Research Topic: Motivic Homotopy Theory

### EXTRACURRICULAR

**President of SIGMAS, University of Alberta** 2024-2025  
 president of the Society in Graduate Mathematics and Statistics

**Vice President of SIGMAS, University of Alberta** 2023-2024  
 vice president of the Society in Graduate Mathematics and Statistics

**APIRG Working Group Grant, Alberta Public Interest Research Group (\$4000)** 2023-2025  
 grant awarded twice to student group *Edmontunes* while serving as (vice-)president