

Louis Croquette

(514) 812-6514 [Canada] • louis.croquette@mail.mcgill.ca

EDUCATION

McGill University – Faculty of Science, Montreal, Canada	2023 – 2026E
TRIUMF – Vancouver, Canada	2022 – 2026E
Doctor in Philosophy, Nuclear Physics, CGPA: 4.00/4.00	
McGill University – Faculty of Science, Montreal, Canada	2020 – 2022
CERN (European Center for Nuclear Research) – Geneva, Switzerland	2021 – 2022
Master of Science, Nuclear Physics, CGPA: 3.80/4.00	
McGill University – Faculty of Science, Montreal, Canada	2016 – 2020
Bachelor of Science, Major in Physics, Minor in Management, CGPA: 3.57/4.00	

PUBLICATIONS

F.M. Maier, F. Buchinger, L. Croquette, P. Fischer, H. Heylen, F. Hummer, C. Kanitz, A.A. Kwiatkowski, V. Lagaki, S. Lechner, E. Leistenschneider, G. Neyens, P. Plattner, A. Roitman, M. Rosenbusch, L. Schweikhard, S. Sels, M. Vilen, F. Wienholtz, S. Malbrunot-Ettenauer. **Increased Beam Energy as a Pathway Towards a Highly Selective and High-Flux MR-ToF Mass Separator.** *Accepted by Nucl. Instrum. Meth. A.*

ORAL AND POSTER PRESENTATIONS

Poster Canadian Association of Physicists (CAP) Congress 2023, June 18-23 2023, Fredericton, New Brunswick, Canada
Won best First Place Poster Prize in Division of Nuclear Physics
Commissioning of a Paul trap for Collinear Laser Spectroscopy of Exotic Radionuclides performed in a 30 keV MR-ToF device

Oral Presentation Winter Nuclear and Particle Physics Conference (WNPPC) 2023, February 16-19, 2023, Banff, Alberta, Canada
Commissioning of a Paul trap for Collinear Laser Spectroscopy of Exotic Radionuclides performed in a 30 keV MR-ToF device

RESEARCH and WORK EXPERIENCE

TRIUMF and McGill University, Geneva, Switzerland and Montreal, Canada

Doctoral Student

January 2023 – Present

- Thesis project on formation of Francium molecules using 2-photon photoassociation as part of fundamental symmetry studies
- Operated and characterized neutral atom magneto-optical trap (MOT), measured trap losses due to multiple effects

CERN and McGill University, Geneva, Switzerland and Montreal, Canada

Master's Student

September 2020 – December 2022

Thesis title: *Commissioning of a Paul trap for Collinear Laser Spectroscopy of Exotic Radionuclides performed in a 30 keV MR-ToF device*

- Thesis topic on MIRACLS (Multi Ion Reflection Apparatus for Collinear Laser Spectroscopy) experiment at ISOLDE facility at CERN
- Constructed and commissioned ultra-high vacuum ion-manipulation devices for precision spectroscopy measurements
- Led systematic study of a compact radio-frequency quadrupole (Paul) trap, and analyzed data to characterize a new design

McGill University, Montreal, Canada

Teacher's Assistant

September 2020 – December 2021

- Introductory Physics (Mechanics and Waves) – developed and administered quizzes for students, evaluated final quiz grades and managed inquiry emails, created and led tutorials, curated weekly assignments for students
- Data Science and Observational Astrophysics – assisted during in-class lectures, explained course content to students, answered emails and provided input for students during lab sessions, graded student assignments

Royal Bank of Canada, Montreal, Canada

Business Associate (Investments)

May 2019 – August 2019

- Prepared project-specific data analyses and presentations to discuss results and recommendations at team meetings
- Developed agile processes to streamline internal RBC Investment procedures, providing more efficient service to banking clients
- Investigated investment accounts and associated transactions to identify errors and lead to cost-savings of \$50,000

Operations Agent (Loans and Wire Transfers)

May 2018 – August 2018

- Verified and processed wire instructions, contacted clients for conversion confirmation and resolved incoming enquiries by phone
- Investigated and rectified errors to maintain precise internal records, optimized process to increase completion rate by 10%
- Deposited loan payments in a timely manner to bring customer requests and files up-to-date

LEADERSHIP AND EXTRACURRICULAR

TRIUMF, Vancouver, Canada

GAPS Tour Guide Pilot Program Administrator

January 2023 – Present

- Managed team of graduate students and postdocs responsible for delivery of tours of TRIUMF to the public
- Led recruitment and training efforts to ensure consistent supply of tour guides to match demand
- Liaised between TRIUMF business units and administration to establish reliable processes for onboarding and remuneration
- As of July 2023, five tour guides have provided 150+ tours of the laboratory to 1,000+ visitors

McGill Peer Support Centre, Montreal, Canada

Chair of Operations

October 2019 – April 2020

- Oversaw 80 front-line volunteers and a team of 10 people managing the Peer Support Centre's operations
- Developed and implemented PSC's overarching vision, leading projects to improve volunteer experience/reinforce internal documents
- Developed and maintained existing connections with all relevant McGill University services and departments

Finance Coordinator

March 2019 – April 2020

- Actively managed a budget and investments of over \$65,000 in assets to further the mission of peer support on McGill campus
- Liaised with undergraduate student union to provide timely information to the executive team about developments in fiscal policy
- Organized training activities such as workshops to educate volunteers about the value of and skills required for peer support

Desautels African Business Initiative, Montreal, Canada

May 2018 – April 2019

Co-Director of Logistics

- Coordinated the detailed day-of logistics of DABI conference, which hosted 10 professionals and 150 participants
- Organized event scheduling, transitions, volunteers, preparations, and registration, and booked venue, catering, and equipment
- Advised the Executive Directors about efficient schedule organization and timing for events, and prepare accordingly

SKILLS AND INTERESTS

Research Skills: Ultra-high vacuums, ion traps, neutral particle traps, lasers, high voltage, safety systems, ion sources

Computer Skills: Python, C++, Autodesk Inventor, Excel, R, PowerPoint, Word, and LaTeX

Languages; Nationalities: Fluent English and French, advanced Spanish; French, American, Canadian Work Permit

Interests: Snowboarding, piano, rock climbing, hiking, biking, learning languages, Physics Olympics (captain)