Megan Cvitan

Curriculum Vitae

Personal

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Megan Cvitan

Education

McGill University, Montréal, QC — 2016 - 2020
BSc. Physics, Computer Science Minor

St. Aloysius Gonzaga Secondary School, Mississauga, ON — 2012 - 2016
Ontario Secondary School Diploma, French Immersion Certificate

Work Experience

Undergraduate Assistant Laboratory Technician — July 2020 - Sept 2020
McGill University Department of Physics, Montréal, QC

- Redeveloped the PHYS 439/469 courses by making the experiments interactive and accessible for remote instruction.
- Produced 3D models of the apparatus for future students.

Undergraduate Research Assistant — May 2019 - Aug 2019
Brunner Neutrino Laboratory, Montréal, QC
Supervised by Thomas Brunner
"Characterizing VUV Light Sources for nEXO SiPM Testing"

- Built and tested circuitry to operate a photodiode in a transimpedance amplifier.
- Programmed a linear stage to scan and an oscilloscope to record light intensity measurements of a UV LED with a photodiode detector.
- Designed numerous 3D-printed parts for laboratory use and led a team of 7 students in the production of a nEXO scale model for outreach purposes.

Director of Communications — Oct 2019 - present
McGill Space Group, Montréal, QC

- Selecting proper hardware and developing software for a prospective Low Earth Orbit Earth-imaging 3U-CubeSat device that will compete in the Canadian Satellite Design Challenge.
- Overseeing and planning the design of the antenna system and coordinating with other critical subteams (Controls, Structural, Power, Mission Operations).
- Liaising with key industry members for sponsorships and technical guidance.
- Prepared and attended a Critical Design Review presentation in front of a panel of industry professionals, including the Canadian Space Agency.

Food Service Associate — Summer 2017, 2018
Canada's Wonderland, Vaughan, ON

Awards

Academic All-Canadian Award — 2019 - 2020
U Sports, Réseau du Sport Étudiant du Québec
For outstanding academic achievement whilst competing on an elite varsity team.

CFREF McDonald Institute Award — 2019
Canadian Astroparticle Physics Research Institute, Kingston, ON

Women in Physics Canada Conference Travel Award — 2018
Université de Sherbrooke, Sherbrooke, QC
Selected from competitive pool of applicants to attend national conference.

Ontario Scholar — 2016
Government of Ontario, Canada

Junior Leadership Award — 2016
St. Aloysius Gonzaga Secondary School, Mississauga, ON

Research Involvement

High Altitude Balloon Project June 2020 - Aug 2020
McGill Space Group, Montréal, QC

- Co-led a team that launched a high altitude balloon equipped with various sensors to study atmospheric conditions.
- Designed the hardware components and the programmed the software for the long-range UHF Communications system.
- Developed the Payload software that enabled the camera to function and communicate with the on board computer.
- Coordinated launch details with Nav Canada.

Majors Research Project Jan 2020 - Apr 2020
McGill Radio Laboratory, Montréal, QC
Supervised by Cynthia Chiang and Matheus Pessoa
"Development of a Conductivity Meter for Antenna Signal Corrections in MIST"

- Investigated the effects of soil conductivity on an antenna's performance and signal readout.
- Examined different probe arrangements to measure soil conductivity and ultimately apply necessary corrections to the observed MIST antenna signal.

Undergraduate Research Project Sept 2019 - Dec 2019
McGill Extreme Gravity and Accretion Group, Montréal, QC
Supervised by Daryl Haggard and John Ruan
"Calculating the Black Hole Mass of Blazar PKS 1502+106 from Different Epochs Optical Spectra"

- Searched for changes in optical spectra of a blazar prior to and post possible neutrino detection.
- Extracted information from the C IV broad emission line to determine the mass of the black hole powering the blazar using fitting techniques and error analysis.

Poster Presentations

Canadian Undergraduate Physics Conference Nov 2019
McGill University, Montréal, QC

1st North-Eastern Symposium on Particle Physics, Astrophysics, Medical Imaging and Quantum Computing Instrumentation Aug 2019
Université de Sherbrooke, Sherbrooke, QC

McGill Physics Undergraduate Open House Sept 2019
McGill University, Montréal, QC

Oral Presentations

Summer Undergraduate Research Showcase Aug 2019
McGill Space Institute & McGill University, Montréal, QC

Majors Research Project Final Presentation Apr 2019
McGill University Department of Physics, Montréal, QC

Skills

Software and Programming
Proficient: Python, LaTeX, Java, C, Bash, Git, SPICE, SolidWorks
Familiar: HTML, OCaml, MATLAB, KiCad, Arduino

Languages
English (native), French (fluent), Croatian (native)

Extra-Curriculars

Vice President of Events May 2019 - May 2020
McGill Society of Physics Students, Montréal, QC

- Represented undergraduate physics students as a whole to external organizations including the McGill administration, the Science Undergraduate Society, other McGill departments, and other universities.
- Organized inclusive interdepartmental social, cultural and academic events for students.
- Managed a budget of $12,000 on an interdepartmental committee.

Varsity Track and Field Sept 2016 - Apr 2020
McGill University, Montréal, QC

- Dedicated 20+ hours per week to training, travelling to meets, and competing.

McGill STEM Support Committee Member Oct 2017 - Dec 2020
McGill University, Montréal, QC

- Organized multiple seminars where professors and industry professionals shared career advice to students in marginalized groups.

Communications Subteam Member Sept 2018 - Oct 2019
McGill Space Group, Montréal, QC

- Designed the antenna whilst utilizing efficient, low-power transceivers in consideration of the satellite link budget.
- Integrated telemetry and critical payload data downlink and handled the interface with the on-board computer to execute and schedule commands.

McGill Physics Makerspace Founding Member Sept 2018
McGill University, Montréal, QC

- Contributed to the development of a space dedicated to encouraging creative projects using 3D printers.

Conferences

Canadian Undergraduate Physics Conference, Presented 2019
McGill University, Montréal, QC

Women in Physics Canada, Volunteered 2019
McGill University, Montréal, QC

Canadian Conference for Undergraduate Women in Physics, Attended 2019
University of Ottawa, Ottawa, ON

Women in Physics Canada, Attended 2018
Université de Sherbrooke, Sherbrooke, QC

Volunteer Experience

Transitional and Palliative Care Volunteer Jan 2016 - Sept 2016
Oakville Trafalgar Memorial Hospital, Oakville, ON

- Worked closely with geriatric patients, distributed meals, and organized medical supplies.

Medical/Surgical Unit Volunteer Aug 2014 - Jan 2016
Georgetown Hospital, Georgetown, ON

Family Literacy Program Facilitator Sept 2014 - Mar 2016
The Region of Peel, Mississauga, ON

Student Prefect Mar 2014 - June 2016
St. Aloysius Gonzaga Secondary School, Mississauga, ON

Certifications

Laser Safety May 2019
McGill University Environmental Health and Safety, Montréal, QC

WHMIS 2015 May 2019
McGill University Environmental Health and Safety, Montréal, QC