

MARK PAMPUCH

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EDUCATION

Master of Science

Expected 08/2023

Western University / Schulich School of Medicine and Dentistry (London, ON)

- Master of Science candidate in Biochemistry
- Supervisor: Bogumil Karas

Master of Science

09/2020-12/2020 (withdrawn from program)

University of British Columbia (Vancouver, BC)

- Master of Science candidate in Botany

Bachelor's Degree (Hons): Science

04/2020

Western University (London, ON)

- Honors Specialization in Genetics

Ontario Secondary School Diploma

06/2016

Marshall McLuhan Catholic Secondary School (Toronto, ON)

- Ontario Scholar Distinction
- Extended French Certificate
- Gifted Program (Grade 9 – 12)

PROFESSIONAL EXPERIENCE

Summer Researcher

04/2021 – 08/2021

Western University / Schulich School of Medicine and Dentistry (London, ON)

- Supervisor: Dr. Bogumil Karas
- Project title: Towards a synthetic algal chloroplast: a streamlined platform for creating designer chloroplast genomes in *Phaeodactylum tricornutum*.

Snowboarding Instructor

12/2020 - 04/2021

Cypress Mountain Snow School – Cypress Mountain (Vancouver, BC)

Research Participant / Thesis Student

06/2019 – 04/2020

London Research and Development Centre – Agriculture and AgriFood Canada (London, ON)

Summer 2020 contract voided
due to COVID-19

- Supervisor: Dr. Krzysztof Szczylowski
- Project title: Shaping the root: assessing a dose dependent role of the *Lotus japonicus* *HAR1* receptor kinase gene

Summer Student

06/2019 – 08/2019

Biochemistry Summer Research Program – Western University (London, ON)

- Supervisor: Dr. Bogumil Karas

Snowboarding Instructor

01/2019 – 03/2019,

Boler Mountain Snow School – Boler Mountain (London, ON)

12/2019 – 03/2020

- Beginner – Intermediate skill range
- 70+ students across group and private lessons

Internship

05/2018 – 08/2018

MolecuLight Inc. – MaRS Discovery District (Toronto, ON)

- Case report forms: Data collection and processing
- Microbiological data analysis
- Literature reviews: Microbiology and Healthcare Economics
- Market research
- Competitor analyses
- Social media content strategy
- Website design aid and QA

Private Snowboarding Instructor

12/2016 – 03/2017

- Single client at novice skill level

Private Tutor

06/2014 – 08/2016

- Primary focuses: Biology and Chemistry
- Secondary focuses: Mathematics, Physics, and English

EXTRACURRICULAR INVOLVMENT**2023 Ivey Business Plan Competition Semi-Finalist***Morrisette Institute for Entrepreneurship – Ivey Business School (London, ON) ✎*

11/2022 – Present

- Finalist amongst two other student “co-founders” in international business plan competition
- Business plan entailed developing roadside drug screening devices for law enforcement services

London Track3 Adaptive Snow School Instructor

12/2019 – 03/2020

London Track3 Ski School – Boler Mountain (London, ON) ✎

12/2021 – 03/2022

- Snowboarding instructor for children and adults with physical, developmental, visual, and hearing challenges

12/2022 – Present

Community Representative*Biochemistry Graduate Students Association – Western University (London, ON) ✎*

09/2021 – Present

- Entailed promoting department or making a positive impact in the local community
 - ♦ Organized donation drive in partnership with Diabetes Canada
 - ♦ Organized biochemistry exhibit with Science Rendezvous

Science Rendezvous Organizer*Science Rendezvous – Western University (London, ON) ✎*

07/2022

- Organized booth for Biochemistry Department to promote science to children and parents
- Performed hands-on DNA extraction demos from fruit

cGEM Competition Judge

10/2021

cGEM ✎

- Judge for national biotechnology competition in Canada

Community Representative

10/2020 – 04/2021

SynBio Canada ✎

- Update Syn Bio Canada executives on synthetic biology research at UBC and BC province

iGEM Graduate Advisor

10/2020 – 12/2020

UBC iGEM – University of British Columbia (Vancouver, BC) ✎

- Aid in different aspects of UBC undergraduate iGEM research project

Council Member (Botany Department Representative)

09/2020 – 12/2020

Graduate Student Society – University of British Columbia (Vancouver, BC) ✎

- Speaker on behalf of department needs to student government body
- Elected as representative by Botany Graduate Student Association
- Member of the elections committee

Writer / Researcher

09/2018 – 04/2019

Western University Technology Review – Western University (London, ON) ✎

- Writing articles on novel technologies for a local audience
- Sustainability department

Chito Ryu Karate Training

2004 – 2016

Higashi Dojo (Toronto, ON) ✎

- 1st Dan Black Belt in Chito Ryu Karate
- Weekly senior and youth group training
- Tournament competitions
 - ♦ Kata: 4 gold, 3 bronze; Kumite: 3 gold, 1 silver, 3 bronze
- Various demonstrations at other dojos and events

Snowboarding Team <i>Marshall McLuhan Catholic Secondary School (Toronto, ON)</i>	2014 – 2016
<ul style="list-style-type: none"> Participated in racing events at Mount St. Louis Moonstone (Coldwater, ON) 	
CASI Level 1 Program <i>Canadian Association of Snowboard Instructors – Lakeridge Ski Resort (Uxbridge, ON) ↗</i>	12/2015
<ul style="list-style-type: none"> Obtained CASI Level 1 Snowboard Instructor Certification 	
Staff in Training <i>Seneca Summer Camps – Seneca College (Toronto, ON)</i>	07/2015 – 08/2015
<ul style="list-style-type: none"> Mini-Multi's Sports Camp (ages 4 – 6) Engaging enthusiastically w/ children Planning and organizing weekly activities 	
Model United Nations (CHAMUN) <i>Chaminade College School (Toronto, ON)</i>	04/2015
<ul style="list-style-type: none"> Researching, debating, and cooperative problem-solving w/ regards to contemporary political issues 	
Leader in Training Program <i>Seneca Summer Camps – Seneca College (Toronto, ON)</i>	07/2014
<ul style="list-style-type: none"> Focuses: Management, decision making, and problem-solving skills 	

AWARDS

Canada Graduate Scholarships – Master's Program <i>Issued by the Natural Sciences and Engineering Research Council of Canada (NSERC)</i>	09/2022
<ul style="list-style-type: none"> \$17,500 	
Ontario Graduate Scholarship <i>Issued by the Ontario Government</i>	09/2022
<ul style="list-style-type: none"> \$15,000 Awarded but declined due to conflict with NSERC award 	
Ontario Graduate Scholarship <i>Issued by the Ontario Government</i>	09/2021
<ul style="list-style-type: none"> \$15,000 	
British Columbia Graduate Scholarship <i>Issued by the Government of British Columbia</i>	09/2020
<ul style="list-style-type: none"> \$15,000 	
Deans Honor List <i>Issued by Western University</i>	2017 – 2020
Western Scholarship of Distinction <i>Issued by Western University</i>	09/2016
<ul style="list-style-type: none"> \$1000 	

PUBLICATIONS

- Pampuch, M., Walker, E.J.L., and Karas, B.J. (2021) Towards synthetic diatoms: The *Phaeodactylum tricornutum* Pt-syn 1.0 project. Current Opinion in Green and Sustainable Chemistry. <https://doi.org/10.1016/j.cogsc.2022.100611> ↗

CONFERENCES / PRESENTATIONS

2023 Bioenergy Conference <i>Webinar</i> <ul style="list-style-type: none">▪ Speaker for 15 min presentation▪ Title: Genetic engineering advances in diatoms	01/2023
SynDiatoms 2022 Workshop <i>Webinar</i> <ul style="list-style-type: none">▪ Speaker for 15 min presentation▪ Title: Optimizing transformation methods for <i>Phaeodactylum tricornutum</i>	12/2022
Nanopore Community Meeting 2022 <i>Metropolitan Pavilion (New York City, NY)</i> <ul style="list-style-type: none">▪ Attendee for the workshop: An introduction to machine learning for Oxford Nanopore data, entailed;<ul style="list-style-type: none">♦ Building a basic basecaller using HMM's♦ Building a variant caller for using a convolutional neural network in PyTorch.	12/2022
Canada SynBio 2022 <i>MaRS Discovery District (Toronto, ON)</i> <ul style="list-style-type: none">▪ Submitted abstract and selected for both oral (1/4 presenters) and poster presentations▪ Title: Towards synthetic diatoms: The Pt-syn 1.0 project.	05/2022
Ontario Biology Day <i>McMaster University (Hamilton, ON)</i> <ul style="list-style-type: none">▪ Scheduled for 15 min presentation▪ Title: Shaping the root: assessing a dose dependent role of the <i>Lotus japonicus</i> <i>HAR1</i> receptor kinase gene	03/2020 <i>Cancelled due to COVID-19</i>

CERTIFICATIONS

edX Verified Certificate for CS50's Introduction to Computer Science <i>Issued by HarvardX</i> <ul style="list-style-type: none">▪ Credential ID: b2f0e720dcab45dabf14307458bffa8 ↗	11/2022
CASI Level 2 Snowboard Instructor Certification <i>Issued by the Canadian Association of Snowboard Instructors (CASI-ACMS)</i>	03/2021
Smart Serve <i>Issued by Smart Serve Ontario</i> <ul style="list-style-type: none">▪ Credential ID: e180222444625RS	02/2018
CASI Level 1 Snowboard Instructor Certification <i>Issued by the Canadian Association of Snowboard Instructors (CASI-ACMS)</i>	12/2014

PROGRAMMING AND I.T. KNOWLEGE

- **Python** – Intermediate
- **R and R studio** – Intermediate
- **bash/Unix** – Intermediate
- **Git/GitHub** – Intermediate
- **SQL** – Novice
- **JavaScript** – Novice
- **HTML** – Novice
- **CSS/Sass** – Novice
- **C** – Basic

TECHNICAL SKILLS

<u>Computer Software Experience</u>		<u>Laboratory Experience</u>	<u>Technique Familiarity</u>
▪ Microsoft Office (including Excel) – Proficient	▪ PyMOL – Novice	▪ DNA / RNA isolation	▪ Western Blotting
▪ Krona – Proficient	▪ DNASTAR – Novice	▪ RE Digest	▪ Agroinfiltration
▪ NCBI BLAST – Intermediate	▪ Adobe Photoshop – Intermediate	▪ <i>E. coli</i> / yeast Transformation	▪ Hairy root transformation
▪ SnapGene – Intermediate	▪ Adobe Illustrator – Intermediate	▪ Bisulfide Conversion	▪ GUS staining
▪ ML-DSP – Novice	▪ Sony Vegas Pro – Intermediate	▪ Sanger Sequencing	▪ Minisatellite/Microsatellite analysis
▪ FigTree – Novice	▪ Audacity – Intermediate	▪ qRT-PCR	▪ Fluorescence <i>in situ</i> hybridization
▪ Benchling – Proficient		▪ CRISPR–Cas editing	▪ Chaos Game Representation
		▪ Nanopore Sequencing	
		▪ Bioinformatics for genomics	

ADDITIONAL SKILLS/HOBBIES/PASSIONS

- Photo and video editing
- Rock climbing
- Snowboarding
- Trilingual (English, French, Polish) + Basic Spanish
- Web development
- Fitness enthusiast