

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
- Ontario Graduate Scholarship recipient (\$15,000)
- Canada Graduate Scholarships – Master's (CGS M) (\$17,500)

Master of Science

09/2020-12/2020 (withdrawn from program)

University of British Columbia (Vancouver, BC)

- Master of Science candidate in Botany
- Supervisors: Patrick Keeling and Naomi Fast
- British Columbia Graduate Scholarship recipient (\$15,000)

Bachelor's Degree (Hons): Science

04/2020

Western University (London, ON)

- Honors Specialization in Genetics
- Dean's Honor List 2017/2018; 2018/2019; 2019/2020
- Western Scholarship of Distinction 2016 (\$1000)

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 Szczygłowski
- 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

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

12/2019 – 03/2020

12/2021 – 03/2022

12/2022 – Present

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

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

2014 – 2016

Marshall McLuhan Catholic Secondary School (Toronto, ON)

- Participated in racing events at Mount St. Louis Moonstone (Coldwater, ON)

CASI Level 1 Program

12/2015

Canadian Association of Snowboard Instructors – Lakeridge Ski Resort (Uxbridge, ON) ✎

- Obtained CASI Level 1 Snowboard Instructor Certification

Staff in Training

07/2015 – 08/2015

Seneca Summer Camps – Seneca College (Toronto, ON)

- Mini-Multi's Sports Camp (ages 4 – 6)
- Engaging enthusiastically w/ children
- Planning and organizing weekly activities

Model United Nations (CHAMUN)

04/2015

Chaminade College School (Toronto, ON)

- Researching, debating, and cooperative problem-solving w/ regards to contemporary political issues

Leader in Training Program

07/2014

Seneca Summer Camps – Seneca College (Toronto, ON)

- Focuses: Management, decision making, and problem-solving skills

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

01/2023

Webinar

- Speaker for 15 min presentation
- Title: Genetic engineering advances in diatoms

SynDiatoms 2022 Workshop

12/2022

Webinar

- Speaker for 15 min presentation
- Title: Optimizing transformation methods for *Phaeodactylum tricornutum*

Nanopore Community Meeting 2022

12/2022

Metropolitan Pavilion (New York City, NY)

- Attendee for the workshop: An introduction to machine learning for Oxford Nanopore data, entailed;
 - ♦ Building a basic basecaller using HMM's
 - ♦ Building a variant caller for using a convolutional neural network in PyTorch.

MaRS Discovery District (Toronto, ON)

- Submitted abstract and selected for both oral (1/4 presenters) and poster presentations
- Title: Towards synthetic diatoms: The Pt-syn 1.0 project.

Ontario Biology Day

03/2020

McMaster University (Hamilton, ON)

Cancelled due to COVID-19

- Scheduled for 15 min presentation
- Title: Shaping the root: assessing a dose dependent role of the *Lotus japonicus* *HAR1* receptor kinase gene

TECHNICAL SKILLS**Computer Software Experience**

- Microsoft Office** (including **Excel**) – Proficient
- Krona** – Proficient
- NCBI BLAST** – Intermediate
- SnapGene** – Intermediate
- ML-DSP** – Novice
- FigTree** – Novice
- Benchling** – Proficient
- PyMOL** – Novice
- DNASTAR** – Novice
- Adobe Photoshop** – Intermediate
- Adobe Illustrator** – Intermediate
- Sony Vegas Pro** – Intermediate
- Audacity** – Intermediate

Laboratory Experience

- DNA / RNA isolation
- RE Digest
- E. coli* / yeast Transformation
- Bisulfide Conversion
- Sanger Sequencing
- qRT-PCR
- CRISPR–Cas editing
- Nanopore Sequencing
- Bioinformatics for genomics

Technique Familiarity

- Western Blotting
- Agroinfiltration
- Hairy root transformation
- GUS staining
- Minisatellite/Microsatellite analysis
- Fluorescence *in situ* hybridization
- Chaos Game Representation

PROGRAMMING AND I.T. KNOWLEDGE

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

CERTIFICATIONS

- CASI Level 1 and 2
- Smart Serve

ADDITIONAL SKILLS/HOBBIES/PASSIONS

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