

# 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: Dr. 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09/2020-12/2020 (withdrawn from program)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 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

|  |                   |
|--|-------------------|
| <b>Private Snowboarding Instructor</b>                 | 12/2016 – 03/2017 |
| ▪ Single client at novice skill level                  |                   |
| <b>Private Tutor</b>                                   | 06/2014 – 08/2016 |
| ▪ Primary focuses: Biology and Chemistry               |                   |
| ▪ Secondary focuses: Mathematics, Physics, and English |                   |

## EXTRACURRICULAR INVOLVMENT

|  |                   |
|--|-------------------|
| <b>2023 Ivey Business Plan Competition Semi-Finalist</b>   | 11/2022 – 01/2023 |
| <i>Morrisette Institute for Entrepreneurship – Ivey Business School (London, ON) ⚡</i>                         |                   |
| ▪ Semi-finalist amongst two other student “co-founders” in North American business plan competition            |                   |
| ▪ Business plan entailed developing roadside drug screening devices for law enforcement services               |                   |
| <b>London Track3 Adaptive Snow School Instructor</b>   | 12/2019 – 03/2020 |
| <i>London Track3 Ski School – Boler Mountain (London, ON) ⚡</i>  | 12/2021 – 03/2022 |
| ▪ Snowboarding instructor for children and adults with physical, developmental, visual, and hearing challenges | 12/2022 – Present |
| <b>Community Representative</b>  |                   |
| <i>Biochemistry Graduate Students Association – Western University (London, ON) ⚡</i>                          | 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   |                   |
| <b>Science Rendezvous Organizer</b>  |                   |
| <i>Science Rendezvous – Western University (London, ON) ⚡</i>  | 07/2022           |
| ▪ Organized booth for Biochemistry Department to promote science to children and parents                       |                   |
| ▪ Performed hands-on DNA extraction demos from fruit   |                   |
| <b>cGEM Competition Judge</b>  | 10/2021           |
| <i>cGEM ⚡</i>  |                   |
| ▪ Judge for national biotechnology competition in Canada   |                   |
| <b>Community Representative</b>  | 10/2020 – 04/2021 |
| <i>SynBio Canada ⚡</i>   |                   |
| ▪ Update SynBio Canada executives on synthetic biology research at UBC and BC province                         |                   |
| <b>iGEM Graduate Advisor</b>   | 10/2020 – 12/2020 |
| <i>UBC iGEM – University of British Columbia (Vancouver, BC) ⚡</i>   |                   |
| ▪ Aid in different aspects of UBC undergraduate iGEM research project  |                   |
| <b>Council Member (Botany Department Representative)</b>   | 09/2020 – 12/2020 |
| <i>Graduate Student Society – University of British Columbia (Vancouver, BC) ⚡</i>                             |                   |
| ▪ Speaker on behalf of department needs to student government body   |                   |
| ▪ Elected as representative by Botany Graduate Student Association   |                   |
| ▪ Member of the elections committee  |                   |
| <b>Writer / Researcher</b>   | 09/2018 – 04/2019 |
| <i>Western University Technology Review – Western University (London, ON) ⚡</i>                                |                   |
| ▪ Writing articles on novel technologies for a local audience  |                   |
| ▪ Sustainability department  |                   |
| <b>Chito Ryu Karate Training</b>   | 2004 – 2016       |
| <i>Higashi Dojo (Toronto, ON) ⚡</i>  |                   |
| ▪ 1 <sup>st</sup> 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   |                   |

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

## AWARDS

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

## 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

|  |   |
|--|---|
| <b>2023 Bioenergy Conference</b><br><i>Webinar</i> <ul style="list-style-type: none"><li>▪ Speaker for 15 min presentation</li><li>▪ Title: Genetic engineering advances in diatoms</li></ul>  | 01/2023                                     |
| <b>SynDiatoms 2022 Workshop</b><br><i>Webinar</i> <ul style="list-style-type: none"><li>▪ Speaker for 15 min presentation</li><li>▪ Title: Optimizing transformation methods for <i>Phaeodactylum tricornutum</i></li></ul>  | 12/2022                                     |
| <b>Nanopore Community Meeting 2022</b><br><i>Metropolitan Pavilion (New York City, NY)</i> <ul style="list-style-type: none"><li>▪ Attendee for the workshop: An introduction to machine learning for Oxford Nanopore data, entailed;<ul style="list-style-type: none"><li>♦ Building a basic basecaller using HMM's</li><li>♦ Building a variant caller for using a convolutional neural network in PyTorch.</li></ul></li></ul>  | 12/2022                                     |
| <b>Canada SynBio 2022</b><br><i>MaRS Discovery District (Toronto, ON)</i> <ul style="list-style-type: none"><li>▪ Submitted abstract and selected for both oral (1/4 presenters) and poster presentations</li><li>▪ Title: Towards synthetic diatoms: The Pt-syn 1.0 project.</li><li>▪ Video: <a href="https://www.linkedin.com/feed/update/urn:li:activity:6938749677995470848/">https://www.linkedin.com/feed/update/urn:li:activity:6938749677995470848/</a> ↗</li></ul> | 05/2022                                     |
| <b>Ontario Biology Day</b><br><i>McMaster University (Hamilton, ON)</i> <ul style="list-style-type: none"><li>▪ Scheduled for 15 min presentation</li><li>▪ Title: Shaping the root: assessing a dose dependent role of the <i>Lotus japonicus</i> <i>HAR1</i> receptor kinase gene</li></ul>  | 03/2020<br><i>Cancelled due to COVID-19</i> |

## CERTIFICATIONS

|   |         |
|---|---------|
| <b>edX Verified Certificate for CS50's Introduction to Computer Science</b><br><i>Issued by HarvardX</i> <ul style="list-style-type: none"><li>▪ Credential ID: <a href="#">b2f0e720dcab45dabf14307458bffa8</a> ↗</li></ul> | 11/2022 |
| <b>CASI Level 2 Snowboard Instructor Certification</b><br><i>Issued by the Canadian Association of Snowboard Instructors (CASI-ACMS)</i>  | 03/2021 |
| <b>Smart Serve</b><br><i>Issued by Smart Serve Ontario</i> <ul style="list-style-type: none"><li>▪ Credential ID: e180222444625RS</li></ul>   | 02/2018 |
| <b>CASI Level 1 Snowboard Instructor Certification</b><br><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>                |
|--|---|-------------------------------|---|
| ▪ <b>Microsoft Office</b> (including <b>Excel</b> ) – Proficient | ▪ <b>PyMOL</b> – Novice                   | ▪ DNA / RNA isolation         | ▪ Western Blotting                          |
| ▪ <b>Krona</b> – Proficient                                      | ▪ <b>DNASTAR</b> – Novice                 | ▪ DNA assembly / delivery     | ▪ Agroinfiltration                          |
| ▪ <b>NCBI BLAST</b> – Intermediate                               | ▪ <b>Adobe Photoshop</b> – Intermediate   | ▪ Microbiology techniques     | ▪ Hairy root transformation                 |
| ▪ <b>SnapGene</b> – Intermediate                                 | ▪ <b>Adobe Illustrator</b> – Intermediate | ▪ Bisulfide Conversion        | ▪ GUS staining                              |
| ▪ <b>ML-DSP</b> – Novice   | ▪ <b>Sony Vegas Pro</b> – Intermediate    | ▪ Sanger Sequencing           | ▪ Minisatellite/Microsatellite analysis     |
| ▪ <b>FigTree</b> – Novice  | ▪ <b>Audacity</b> – Intermediate          | ▪ qRT-PCR                     | ▪ Fluorescence <i>in situ</i> hybridization |
| ▪ <b>Benchling</b> – Proficient                                  |   | ▪ CRISPR–Cas editing          | ▪ Chaos Game Representation                 |
|  |   | ▪ Nanopore Sequencing         |   |
|  |   | ▪ Bioinformatics for genomics |   |

## LANGUAGES

English (Native)  
Speaking: ★★★★★  
Listening: ★★★★★  
Reading: ★★★★★  
Writing: ★★★★★

French  
Speaking: ★☆☆☆☆  
Listening: ★★☆☆☆  
Reading: ★★★★★  
Writing: ★★☆☆☆

Polish  
Speaking: ★★★★★  
Listening: ★★★★★  
Reading: ★★☆☆☆  
Writing: ★☆☆☆☆

## ADDITIONAL SKILLS/HOBBIES/PASSIONS

- Photo and video editing
- Rock climbing
- Snowboarding
- Web development
- Resistance training
- Fitness enthusiast