Ben Woodward, FRCGS

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At a Glance

- **Geographer:** Lifelong interest in and comprehensive understanding of geography, as demonstrated by exceptional results in the International Geography Olympiad, Canadian Geographic Challenge, Ontario Envirothon, and other competitions.
- **Geovangelist:** Genuine passion for geography and environmental education, as demonstrated by my involvement with organizations like Canadian Geographic Education, Esri Canada Education and Research, Skills Ontario, and Forests Ontario, and my recent induction as a fellow of the Royal Canadian Geographical Society.
- **Innovator:** Ability and willingness to become highly proficient in GIS technologies, web development, and other related skills to create unique and cross-disciplinary digital maps and apps.

Education

Bachelor of Environmental Studies, Honours **Geography** and Environmental Management, with Joint Major in **Earth Sciences** and Specialization in **Geomatics**, University of Waterloo, Waterloo, Ontario (September 2019 to April 2024)

Achievements and Awards

- Awarded the Dean's Scholarship of Excellence for demonstrating a passion for environmental issues.
- Achieved a 90%+ average in all full academic terms thus far, including a 94% average across all geography courses.

Sample Courses

- GEOG 490 – Honours Thesis (*Towards Understanding the Causes of Spatial Heterogeneity in the Recession of Lake Huron's Coastal Bluffs: A Multi-Methodological Approach*)
- GEOG 481 – GIS Project Course (*Impact of Urban Rail Transport Projects on Service Levels, Ridership, and Transport Equity*)
- GEOG 391 – Field Research (*Food Insecurity at the University of Waterloo: A Spatial Perspective*)
- EARTH 390 – Methods in Geological Mapping
- EARTH 333 – Sedimentology (also TAed)
- EARTH 235 – Stratigraphy and Earth's History (also TAed)
- GEOG 281 – Introduction to GIS (also TAed)

Work Experience

GIS Education and Research Assistant at Esri Canada (May 2022 to April 2023)

- Created Mobilizing Justice's [Transportation Equity Dashboard](#) to visualize transportation access throughout Canada.
- Assisted with the development of the [Complete Streets](#) VR Application.
- Presented several GIS workshops and demonstrations to academics and GIS professionals.

GIS Researcher and Analyst at the DECIMA Project (September 2022 to December 2022)

- Created a 3D map of 17th century Livorno using ArcGIS Online, including names of tenants, cost of rent, and other information for each residential building.
- Created maps, graphs, and time series animations to visualize "crime" patterns in 16th and 17th century Florence.

Geomatics Technician at the Canadian Soil Information Service (January 2022 to April 2022)

- Used R, R-Shiny, and Linux to create and deploy data analysis and visualization web apps for internal use.
- Extracted and processed remotely sensed data (e.g., satellite imagery and derivatives) using Google Earth Engine, R, QGIS, and other technologies.

GIS and Digital Archives Assistant at the Bayfield Historical Society and Archives (June 2021 to September 2021)

- Used my knowledge of the React and Django web frameworks, database design, and Linux to develop, deploy, and host the [Bayfield Historical Web Map](#). Later developed the more general purpose [Local History Atlas](#).

GIS Technician at the Region of Peel (January 2021 to April 2021)

- Used my knowledge of Python/ArcPy to develop an object-oriented error-checking system run through model builder that flags common errors in spatial datasets.

Volunteer Experience

Waterloo Association of Geography Students (President September 2022 to December 2023, Executive 2020 to December 2023)

- Plan community-building events for students, including student-professor nights, games nights, and hockey nights.
- Organize educational events, including Waterloo's first in-person GIS day since 2019.
- Represent students at geography department meetings.

Canadian Geography Workshop Series (2020 to present)

- Worked closely with my teammates from the International Geography Olympiad to develop, present, and record twelve free workshops to help keen students learn the fundamentals of geography.
- Created and deployed geoworkshops.ca, a website used to make our workshops, activities, quizzes, and external geography resources more accessible to Canadian students.
- Inducted as a fellow of the Royal Canadian Geographical Society for leading the development of this workshop series.

Forests Ontario/Ontario Envirothon (2021 to present)

- Won Forests Ontario's White Pine Award for 2022 (see below).
- Expertly judged teams of high school students from across Ontario on their Envirothon case presentations.
- Emphasized the important role of geographic education in combatting environmental issues including biodiversity loss and climate change at Forests Ontario's 2022 Strength in Biodiversity conference.

Selected Awards

2nd Place – Esri Canada App Challenge (May 2023)

- Worked with a team of Waterloo students to create a suite of web and mobile apps using ArcGIS Experience Builder and AppStudio to help cities manage their urban forest.

Geoff Peach Memorial Scholarship for Coastal Research – Lake Huron Coastal Centre (March 2023)

- Awarded a scholarship from the Lake Huron Coastal Centre to help fund my undergraduate thesis on the history and present of coastal change along Lake Huron's southeastern shoreline, with a focus on bluff recession.

3rd Place - Esri Canada App Challenge (May 2022)

- Worked with a team of Waterloo students to create a disaster response web app using OpenLayers, React, ArcGIS Online, and Survey 123.

White Pine Award - Forests Ontario (February 2022)

- Awarded to a student who contributes to forestry education and awareness.

Peoples' Choice Awards - Western GIS Week Conference (November 2021, 2022)

- Awarded for presentations on the Bayfield Historical Web Map and Local History Atlas, as voted by conference attendees.

Gold Medal (3rd place worldwide) - International Geography Olympiad (August 2019)

- Qualified for a four-member team Canada in both 2018 and 2019 by designing and executing my own field studies.
- Excelled at challenging examinations that tested the geographic thinking, fieldwork, and graphicacy skills of 168 top geography students from 43 countries, allowing me to place third worldwide in the Olympiad in 2019.

National Champion - Canadian Geographic Challenge Level 2 (June 2017)

- Demonstrated exceptional geographic knowledge and fieldwork skills by winning Canada's top geography bee.

Skills

- Leadership, communication, and teamwork, as demonstrated by my involvement with the Waterloo Association of Geography Students and other groups.
- Self-starter, as demonstrated by my ability to teach myself new skills and get involved in various projects.
- Fieldwork – Sediment sampling in coastal and nearshore subaqueous environments. Soil and tree identification. Basic drone licence. G drivers' licence with perfect driving record.
- GIS and remote sensing skills – ArcGIS Pro, QGIS, ArcGIS Online, Google Earth Engine, OpenDroneMap.
- Software development skills – JavaScript (including React, Svelte), Python (Django), PostgreSQL/PostGIS, QML, Unity.
- Data analysis – R, Python (including spatial data analysis in these languages, especially analysis of demographic data).
- Historical/archival research – Experience working with archival records, including microfilm, photographs and maps, and historical texts in various languages.