

## Sarah Wells-Moran

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### EDUCATION

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**Wellesley College** | Wellesley, MA

Expected December 2022

*B.A. in Geosciences, Physics | Cumulative GPA: 3.80*

- Specialized courses: Intro Python, Mechanics, Electricity and Magnetism, Electronics Lab, Quantum Mechanics, Classical Mechanics, Statistical Mechanics and Thermodynamics, Mineralogy and Petrology, Sedimentology, Oceanography, Volcanology, Multivariable Calculus, Differential Equations, Linear Algebra, Intro Chemistry, Stagecraft

**Massachusetts Institute of Technology (MIT)** | Cambridge, MA

September 2019-May 2020

*Cross-registered student*

**University of Washington** | Seattle, WA

May 2017

*Western Aerospace Scholars*

- Awarded William E. Boeing Jr. Community Collaboration Award

**Camas High School** | Camas, WA

June 2018

*High School Diploma | Cumulative GPA: 3.975*

- Specialized courses: MST Magnet Program

### RESEARCH EXPERIENCE

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**Massachusetts Institute of Technology:** Earth, Atmospheric, and Planetary Sciences | Cambridge, MA

*Research Assistant, Minchew Group*

September 2020-Present

- Utilize Geographic Information Systems software to identify crevasses on ice shelves and track their deformation over time
- Analyze and visualize strain rates surrounding rifts to understand why ice fractures, helping build better models for ice sheets and climate change
- Awarded American Geophysical Union Student Travel Grant to present research at the AGU Fall 2021 Meeting

*Research Assistant, Minchew Group in collaboration with Dr. Athena Eyster*

March 2020-August 2020

- Utilized Geographic Information Systems software to identify dikes within the 3.5Ga Ameralik dike swarm
- Plotted and analyzed dike orientations to infer strain rate at the time of dike emplacement to help constrain the commencement of plate tectonics in the area
- Awarded Wellesley Career Education Grant for Student-Identified Summer Internships
- Presented research and results in a poster at the Fall 2020 American Geophysical Union Meeting

*Research Assistant, Peč Group*

September 2019-May 2020

- Utilized Photoshop to identify and trace melt pockets in laboratory-deformed Mid-Ocean Ridge Basalt samples

## PUBLICATIONS

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### In Preparation:

- **Wells-Moran, S.**, Ranganathan, M., & Minchew, B. Breaking the Ice: Understanding Large-Scale Fracture Initiation Processes on Antarctic Ice Shelves through Observations of Strain Rate and Estimates of Stress; to be submitted December 1, 2022
- Honors thesis in the Geosciences, Undergraduate Thesis, Wellesley College; to be submitted November 18, 2022

## CONFERENCES

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### Upcoming:

- **Wells-Moran, S.**, Ranganathan, M., & Minchew, B. Constraining the Conditions Under Which Ice Fractures on Antarctic Ice Shelves Using Satellite Observations; Poster, American Geophysical Union 2022 Fall Meeting, Chicago, December 2022

### 2022

- **Wells-Moran, S.**, Ranganathan, M., & Minchew, B. Breaking the Ice: Understanding Large-Scale Fracture Initiation Processes on Antarctic Ice Shelves through Observations of Strain Rate and Estimates of Stress; Poster: WAIS Workshop, Denver, CO, September 2022

### 2021

- **Wells-Moran, S.**, Ranganathan, M., & Minchew, B. Breaking the Ice: Understanding Large-Scale Fracture Initiation Processes on Antarctic Ice Shelves through Observations of Strain Rate and Estimates of Stress; Poster: American Geophysical Union 2021 Fall Meeting, New Orleans, December 2021

### 2020

- **Wells-Moran, S.**, Eyster, A., Nichols, C., Ranganathan, M., & Minchew, B. Under Pressure: Strain and Stress Constraints on the Longevity of Modern Plate Tectonics Inferred From 3.5 Ga Intrusions in Isukasia, Southwest Greenland; Poster: American Geophysical Union 2020 Fall Meeting, virtual, December 2020

## AWARDS AND GRANTS

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### **AGU Cryosphere Section Student/Post-doc/Recent Graduates Travel Grant for Diversity (CryoStuD):**

Travel grant awarded by the AGU Cryosphere section with the purpose of uplifting traditionally marginalized scientists to participate in AGU annual meetings and present their research. 6 applicants received this grant in 2022, the first year the grant was offered; 2022

**West Antarctic Ice Sheet Workshop Early Career Travel Grant:** Awarded to early career researchers to facilitate their attendance to the annual WAIS workshop; 2022

**American Geophysical Union Fall 2021 Student Travel Grant:** Awarded to students who demonstrate

strong scientific merit in their abstract to assist students with a combination of costs associated with attending the Fall 2021 AGU Meeting; 2021

**Sara F. Langer Award for Excellence in the Geosciences:** Awarded by Wellesley College to a rising Senior, majoring in geology, who exhibits eager curiosity in the field of geology, a dedication to excellence inside and outside the classroom, and a generosity of spirit in her day-to-day contributions to the College; 2021

**Wellesley Career Education Summer Internship Grant:** Provides a stipend for students to pursue an unpaid summer internship program that they identify on their own; 2020, 2021

**William E Boeing Jr. Community Collaboration Award:** Awarded by Western Aerospace Scholars to a student who demonstrates outstanding communication and collaboration skills during the WAS Summer Residency Program; 2017

## LEADERSHIP EXPERIENCE

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### Wellesley College Student Organizations:

*Club Rocks, President* May 2020-Present

- Organize Club Rocks events, coordinate with Geosciences Department faculty, apply for student organization events funding, and communicate events to Club Rocks members
- Successfully organized talks with Dr. Rachel Bernard and Dr. Carol Finn, a grad school panel, and Bad Geology Movie Nights during the course of the pandemic

*Society of Physics Students, Social Media Content Curator* May 2020-Present

*Nordic Ski Team, Social Chair* May 2020-Present

- Member of the Wellesley College Nordic Ski Team since September 2018
- Successfully organized social events such as game nights and Petting Zoo(m)s to facilitate team bonding
- Responsible for creating community both on and off the snow

*Crew Team Varsity Athlete* September 2018-October 2019

## FIELD WORK

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**University of Maine | Orono, ME** June 6<sup>th</sup>-August 5<sup>th</sup>, 2022

### *Juneau Icefield Research Program*

- Learned how to safely travel and conduct research in a glaciated environment
- Traversed 75 miles across the Juneau Icefield from Juneau, AK to Atlin, BC
- Worked with faculty on projects including interferometry, GPS-mapping of ice velocity, ground penetrating radar, and ice coring
- Dug mass balance pits
- Presented research to residents of Atlin, and to tourists at the Mendenhall Glacier Visitor Center

**Johns Hopkins University | Baltimore, MD**

### *Sample Collection for Geochronology of Rodinia Rifting*

August 5<sup>th</sup>-11<sup>th</sup>, 2021

- Measured sections and collected samples of Precambrian rocks in Northeastern Washington
- Observed and noted grain size, deformation, composition, and other identifying features of each outcrop
- Hiked and navigated forest roads to outcrops

**United States Geological Survey:** Cascades Volcano Observatory | Vancouver, WA

*Mount Rainier Debris Flow Monitoring*

July 7<sup>th</sup>-9<sup>th</sup>, 2021

- Hiked Fairfield Seismic Nodes to deployment locations within the Mount Rainier National Forest
- Carried 4-5 nodes in backpack along trails for ~4 miles to deployment sites

**Oregon State University** | Corvallis, OR

*Cascadia 2021 Project*

June 2021

- Deployed and retrieved 69 Fairfield Seismic Nodes in Northwest Oregon
- Navigated forest roads to deployment sites, dug holes, and oriented and leveled nodes for deployment

## EMPLOYMENT

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**Wellesley College** | Wellesley, MA

September, 2022-Present

*Physics Department Grader*

**211info** | Portland, OR

March 2020-May 2021

*Covid-19 Information Specialist*

- Utilized empathy to answer phone calls and emails, and assess client's needs
- Explored database and refer client to the information and resources that best fit their needs
- Adapted to changes in information quickly and professionally to reassure and afford support to clients in a time of uncertainty
- Collaborated with team members to handle 42,000 total contacts just in the month of January 2021

**Burgerville** | Camas, WA

Summer 2018, 2019

*Prep Cook*

## CERTIFICATIONS

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**NOLS** | Wilderness First Aid

Expires October 9<sup>th</sup>, 2024

**NOLS** | Epinephrine Auto Injector

Expires October 9<sup>th</sup>, 2024

## SKILLS

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Adobe Creative Cloud | Google Suite | HTML | Inkscape | LaTeX | MATLAB | Microsoft Office Suite | Python | QGIS