# Elizabeth McGeorge

elizabeth.mcgeorge@noaa.gov
LinkedIn
e-mcgeorge
Seattle, WA

## Professional Experience

### University of Washington — Postdoctoral Scholar

**Jan 2024 – Current | Seattle, WA**

- Collaboration with Dr. Yolande Serra (UW CICOES), Dr. Dongxiao Zhang (UW CICOES/NOAA PMEL) and Dr. Meghan Cronin (NOAA PMEL).
- Investigating the usefulness of acoustic doppler current profilers (ADCPs) on Saildrones for calculating vertical velocity. This work aims to assist in reducing model biases in the eastern tropical Pacific and improving skill in El Niño Southern Oscillation (ENSO) predictions.

### University of Canterbury — Lecturer

**Mar 2022 – Nov 2022 | Christchurch, New Zealand**

- Lectured on two courses in 2022: ENCH298 and EMTH119. For both, I was responsible for delivering lectures, providing regular office hours and both writing and marking examinations.

### University of Canterbury — Teaching Assistant

**Feb 2018 – Nov 2022 | Christchurch, New Zealand**

- Ran help sessions in applied mathematics, mainly in linear algebra and differential equations. Topics covered in linear algebra include vector spaces, linear transformations, eigenvalues, and orthogonality with applications to Markov chains, population and economic models, least squares approximation, cryptography, coding theory, data compression. Topic in differential systems include systems of linear and non-linear first order differential equations, phase plane techniques, numerical methods, stiff systems, Laplace transforms (including initial value problems, shift theorems, step functions and impulses, convolution, resonance), Fourier series and elementary Fourier transforms.

## Publications

*2024 E. K. McGeorge, M. Moyers-Gonzalez, M. Sellier, and P. L. Wilson (Apr. 2024). "Recovery of basal slip and ice thickness for ice flwo describe by the Shallow Ice Approximation using an adjoint based optimisation method in two-dimensions." In preparation.

2022 E. K. McGeorge, M. Moyers-Gonzalez, M. Sellier, and P. L. Wilson (Dec. 2022). "Exact recovery of kiwi-shaped bed topography in a no-slip ice sheet using only surface data." 23rd Australasian Fluid Mechanics Conference Proceedings. Sydney.

2022 E. K. McGeorge, M. Moyers-Gonzalez, M. Sellier, and P. L. Wilson (Mar. 2022). "An augmented Lagrangian algorithm for recovery of ice thickness in unidirectional flow using the Shallow Ice Approximation". In: Applied Mathematical Modelling 107, pp. 650–669.

2021 E. K. McGeorge, M. Sellier, M. Moyers-Gonzalez, and P. L. Wilson (Jan. 2021). "Bedrock reconstruction from free surface data for unidirectional glacier flow with basal slip". In: Acta Mechanica 232.1, pp. 305–322

## Education

### PhD (Mathematics)

**2019 - 2023 | University of Canterbury**

Beyond Observations: Recovery of unknown parameters in ice flows using optimisation techniques and other tools. Conferred October 11, 2023.

### BSc (Hons. First Class)

**2015 - 2018 | University of Canterbury**

Major: Mathemtics

**GPA: 8.75 / 9.00**

## Computing Skills

### Programming

**Proficient:**

Python • MATLAB • LaTeX

**Familiar:**

Sage Math • R

### Libraries/Frameworks

pandas • matplotlib • xarray • netcdf4

### Tools/Platforms

Git • conda

## Teaching Skills

- Lecturing
- Writing examinations
- Preparing lecture notes
- Marking student work
- Pastoral care

## References

**Miguel Moyers-Gonzalez**, Associate Professor, University of Canterbury

**Mathieu Sellier**, Head of Mechanical Engineering, University of Canterbury