

Katarzyna (Kasia) Lucy Porteous Warburton

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EDUCATION

2018 - 2022: **PhD in Applied Mathematics** DAMTP, University of Cambridge
“The Tidal Variability of Antarctic Glaciers” (supervised by Prof. Jerome Neufeld and Dr Duncan Hewitt)

2017 - 2018: **M.Math.** University of Cambridge, Trinity College.
Distinction, 10th (out of ~ 250 students), highest mark of all students studying Fluid Mechanics.

2014 - 2017: **B.A. Mathematics**, University of Cambridge, Trinity College.
First class honours, ranked in top ten (out of ~ 250 students) in all three years, highest mark of all students studying Applied Mathematics.

AWARDS AND FUNDING

2022: **Research Fellowship**, Trinity College Cambridge (deferred to 2024).

2022: **Society of Fellows Postdoctoral Fellowship**, Dartmouth College.

2022: **Houghton Distinguished Postdoctoral Fellowship**, MIT EAPS (declined).

2020: **Smith-Knight Rayleigh-Knight Prize** (1st Class - the highest of five groups): awarded by the University of Cambridge for an extended essay on “any subject in Mathematics and its applications”.

2018: **Vice-Chancellor’s Award**, for the 250 highest ranked students across all disciplines starting research at the University of Cambridge.

2018 - 2021: **Research Scholarship**, Trinity College Cambridge.

2018 - 2022: **Fully-funded NERC Studentship**, as part of the Earth Systems Sciences DTP.

2018: **Rouse-Ball Travelling Studentship in Mathematics**, for a visit to Cornell University, supervised by Prof. Mingming Wu.

2016: **LMS Undergraduate Research Bursary**, for “Silo honking: experimental investigation into the origins and characteristics of sound emission from granular flow in a vertical tube”, supervised by Dr Nathalie Vriend.

2015 - 2017: **Junior Scholarship** (2015) and **Senior Scholarship** (2016-17), Trinity College Cambridge, for performance in the undergraduate Mathematical Tripos.

PUBLICATIONS

Warburton, K.L.P., Hewitt, D.R. and Neufeld, J.A. Shear dilation in wet granular till modifies subglacial sliding rates (submitted)

Warburton, K.L.P., Hewitt, D.R. and Neufeld, J.A. Tidal Grounding-Line Migration Modulated by Subglacial Hydrology, *Geophysical Research Letters*, 2020 e2020GL089088

Warburton, K.L.P., Hewitt, D.R. and Neufeld, J.A. The elastic Landau-Levich problem on a slope, *Journal of Fluid Mechanics*, 2020 883 (A40)

SELECTED TALKS

EGU General Assembly, May 2022 (invited)

AGU Fall Meeting, Dec. 2021 *Shear dilation in granular till modifies subglacial sliding rates*

IGS British Branch, Sept. 2021 *Time-dependent soft-bedded sliding laws*

Maths on Ice Forum, Feb. 2021 (invited) *Tides below glaciers*

BAS Ice Dynamics and Paleoclimate Seminar, Nov. 2020 (invited) *Linking surface velocity and subglacial hydrology*

APS DFD, Nov. 2020 *A granular model for the transient response of subglacial till*

DAMTP Geophysical and Environmental Processes Seminar, Oct. 2020 *From top to bottom: using surface velocity variations to look below glaciers*

IGS British Branch, Sept. 2020 *Constraining till permeability via tidal velocity variations* - **John Glen Prize for best student talk**

AGU Fall Meeting, Dec. 2019 *Tidal grounding line migration modulated by subglacial hydrology*

APS DFD, Nov. 2019 *Glacial Squeegee: elastic Landau-Levich and the tidal modulation of ice streams*

TEACHING

2018 - present: Supervisor for undergraduate students in Mathematics at the University of Cambridge (Trinity College, Trinity Hall, St Catharine's, Robinson, King's College, and Clare College) for Dynamical Systems, Vectors and Matrices, and Mathematical Biology.

2021: Workshop leader, Murray Edwards College STEP summer school for female Mathematics applicants

2021: Co-supervisor, NERC Research Experience Placement: Sebastiaan Hoek, 'Transient moulin morphology as a window on glacial rheology'

OTHER

I have reviewed for *Journal of Geophysical Research: Earth Surface*.

Co-chair, "Modelling Approaches" session, IGS British Branch 2021

Interviewer, undergraduate Mathematics applicants at Trinity College, Cambridge

Leader of the UK's European Girls Mathematical Olympiad program: lecturing, coaching, examining, and running training camps for exceptional young mathematicians with a focus on increasing the opportunities for girls in Mathematics.