

ANDREW TEDSTONE

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Education

- 2011-15 PhD “Hydrological controls on Greenland ice sheet motion”.
University of Edinburgh. Awarded 10/2015. Advisor: Prof. Peter Nienow.
- 2010-11 M.Phil. Polar Studies (with Distinction), University of Cambridge, UK.
- 2007-10 BA then MA, Geographical Tripos (1st Class), University of Cambridge, UK.

Employment history

- 08/2024 – present Assistant Professor (SNSF), Institute of Earth Surface Dynamics, University of Lausanne, CH.
- 03/2022 – 06/2024 Senior Researcher & Maître d’Assistant, Department of Geosciences, University of Fribourg, CH.
- 08/2019 – 03/2022 Senior Researcher, Department of Geosciences, University of Fribourg, CH. Part of the European Research Council ‘Cassandra’ project. Principal Investigator: Prof. Horst Machguth.
- 01/2016 – 08/2019 Post-doctoral research associate, Geographical Sciences, University of Bristol, UK. Part of the NERC ‘Black and Bloom’ Large Grant. Principal Investigators: Prof. Martyn Tranter, Prof. Jonathan Bamber.

Approved research projects as PI or Co-PI

- 2024-29 PI: Swiss National Science Foundation Starting Grant, ‘FlowState’. **1.8 M CHF**.
- 2022-24 PI: European Space Agency TPM PP0085001, funding in kind **4,000 CHF**, for tasking of WorldView satellite.
- 2020-23 PI: ‘HI-SLIDE’ - Exploratory Grant, Swiss Polar Institute. **35,000 CHF**.
- 2019 PI: Marie Curie Individual Global Fellowship. ‘IceMelt3D: Tracking 3-D meltwater production and runoff from glacial bare-ice surfaces’. **231,191.36 EUR**. *I did not pursue this project because of uncertainty in funding continuity after the UK’s exit from the EU.*
- 2014 PI: Scottish Alliance of Geosciences, Environment and Society - Postdoctoral and Early Career Researcher Exchange, to Annecy, France. **2,375 GBP**

Supervision of junior researchers at graduate and postgraduate level

- 10/2022 – Hannah Picton, PhD. U.Edinburgh, UK. (NERC E3 DTP)
Co-supervisor.
“The influence of climate on the dynamics of the Greenland Ice Sheet”.
- 09/2022 – Julien Ducrey, MSc. U. Fribourg, CH.
01/2023 **Lead Advisor** for Cryosphere report.

- “Estimating Greenland ice sheet’s run-off by calculating superimposed ice formation”.
- 11/2019 – Nicolas Jullien, PhD, U. Fribourg, CH. (*ERC Consolidator – P.I. Machguth*)
07/2024 **Lead supervisor.**
“The changing relationship between surface melting and runoff at high elevations of the Greenland Ice Sheet”.
- 09/2019 – Nicole Clerx, PhD, U. Fribourg, CH. (*ERC Consolidator – P.I. Machguth*)
06/2024 **Co-supervisor.**
“Measuring and modelling of Greenland firn hydrology”.
- 03/2016 – Stefan Hofer, PhD, U. Bristol, UK. (*ERC Advanced/NERC Large – P.I. Bamber*)
12/2019 **Co-supervisor.**
“Clouds over Greenland: The influence of clouds on contemporary and future Greenland Ice Sheet surface melt”.
- 10/2017 – Francesca Baldacchino, MSc, U. Edinburgh, UK.
08/2018 **Co-supervisor.**
“Investigating the spatial changes of dark ice on South West Greenland Ice Sheet using Sentinel-2 and MODIS”.

Teaching activities

- Course Leader**, *MSc Data and Methods in Environmental Analysis*: new course designed and delivered in Autumn semester 2022 and 2023 at the University of Fribourg, using remote sensing data and the UNEP-GRID Swiss Data Cube.
- Course Leader**, *MSc Seminar in Climatology and Glaciology: Ice Sheets and Climate – Past, Present and Future*. Spring semester 2022, University of Fribourg. I developed and delivered a blend of lectures, guided reading, student presentations and short essays with formative feedback provided.
- Lecturer**, *Fundamentals of Glaciology*: Wrote and delivered two lectures on subglacial hydrology and dynamics for 2nd year Bachelors students at the University of Bristol, 2017, 2018 and 2019.
- Responsible/co-responsible**, *Scientific Computing for Geosciences*: 1-day geospatial programming course (March 2020) for PhD students at the University of Fribourg. 3-day course (October 2016) for new PhD students at the University of Bristol. Python, Git, Unix, server-based computing.
- Tutoring and Demonstrating**: ~200 hours of contact time. Geomorphology (including GIS practicals), 2012–15; Environment Sensitivity and Change, 2011–2012; Plotting in Python, 2012; Quantitative Methods in Geography, 2011. Assistant Course Organiser for Geomorphology, 2013–2015, including development of tutorial materials.
- Field**: Experience totalling ~7 weeks. U.Bristol Study and Field Skills (Arolla, Switzerland), 2019. U.Edin. Iceland Undergraduate Elective, 2013, 2014 and 2015 – 10-day intensive field course covering glaciology, geomorphology, tephrochronology and GIS, including co-leadership of the 2014 Elective. Cairngorms, Scotland, short courses 2011, 2013, 2014, 2015 – glacial geomorphology.

Institutional responsibilities

- 2021-24 Geography servers/Unix coordinator, U. Fribourg, CH.
- 2021-24 Seminar organiser for physical geography, U. Fribourg, CH.
- 2013-14 Seminar organiser for physical geography, U. Edinburgh, UK.
- 2012-13 Graduate School Vice-President, Geosciences, U. Edinburgh, UK.
- 2012-13 Graduate Health and Safety representative, Geosciences, U. Edinburgh, UK.
- 2012-15 Developed the Cryosphere research group website, U. Edinburgh, UK.

Equality, diversion and inclusion activities

Between 2023 and 2024 I led the development and implementation of a Fieldwork code of conduct which applies to all teaching and research field activities undertaken by Geography at the University of Fribourg.

Leadership and integration of small and very close field teams involving colleagues of different genders, nationalities and career stages.

In 2023 I co-developed the “Terms of Reference” for engaging crisis counselling to improve working conditions, in response to an emerging conflict in the workplace.

Memberships in panels, boards, etc and reviewing activities

Manuscript reviewer for Proceedings of the National Academy of Sciences (America), Nature Scientific Reports, Journal of Glaciology, Annals of Glaciology, The Cryosphere, Journal of Geophysical Research: Earth Surface, Geoscientific Model Development, Geografiska Annaler, Nature Geoscience, Remote Sensing of Environment, Frontiers in Earth Sciences.

Grant reviewer for Natural Environment Research Council (UK).

Organisation of conferences

Lead Convenor of EGU General Assembly 2019 session CR5.2 "Advances in measuring and modelling ice sheet and glacier surface mass balance and atmospheric interaction".

Vice-President of the Edinburgh GeoSciences GradSchool (2012–2013). Co-organiser for the School's annual 3-day conference for 120 delegates.

Prizes, Awards, Fellowships

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| 2015 | Scottish Alliance of Geosciences, Environment and Society (SAGES) Best Postgraduate Research Paper Prize. |
| 2012 | University of Edinburgh Moss Scholarship. 5,000 GBP . |
| 2011-15 | UK NERC PhD studentship. 68,000 GBP . |
| 2010 | The Fitzwilliam Graduate Scholarship for M.Phil. research. 13,000 GBP . |
| 2010 | Highly Commended in British Hydrological Society Student Dissertation Awards. |

Field research experience

Total of ~10 months experience across ice sheet and alpine glacier environments, excluding teaching. Major field campaigns include:

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| 2024 | K-Transect, W. Greenland (remote support) . Logistics preparations and training; primary home contact for field team. |
| 2023 | K-Transect, W. Greenland . Maintenance campaign of 10x electronic measurement sites. |
| 2022 | K-Transect, W. Greenland . Maintenance campaign of 10x electronic measurement sites. |

- 2021 **K-Transect, W. Greenland.** Summer hydrological measurements.
- 2021 **K-Transect, W. Greenland.** Led the production and installation of 5x firn evolution monitoring sites and 5x GNSS sites to measure ice motion. Remote field camp of more than three weeks duration at 1,900 m asl on ice surface.
- 2020 **K-Transect, W. Greenland.** Hydrological and unmanned aerial system measurements of the runoff limit during July/August. Two weeks field camp.
- 2018 **Upernavik, north-west Greenland July 2018.** Surface sampling and reflectance measurements, unmanned aerial surface imaging.
- 2017 **Himachal Pradesh, Indian Himalayas.** Bio-climatic characterisation of Chotta Shigri, as part of a Bristol collaboration with Jawaharlal Nehru University (two weeks).
- 2017 **K-Transect, W. Greenland.** Surface reflectance measurements using spectro-radiometer and unmanned aerial system with multispectral camera.
- 2016 **K-Transect, W. Greenland.** Albedo measurements of the ice sheet surface.
- 2015 **Leverett Glacier, W. Greenland.** Hydrological gauging for the University of Bristol.
- 2012/13 **Leverett Glacier, W. Greenland.** Dye dilution river discharge gauging, ablation measurements and SF6 gas tracer sampling at a remote ice-marginal field camp. GNSS and meteorological observations on a 115 km transect.
- 2009 **Hagafellsjökull-Eystri, Iceland.** Two weeks of hydrological measurements (stage, salt dilution gauging and hydrochemistry) for Bachelors thesis.