

Stuart William David Grieve

Reader in Physical Geography

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Appointments

2024– **Reader in Physical Geography**, Queen Mary University of London
2021– **Fellow of the Digital Environment Research Institute**, Queen Mary University of London
2021–2024 **Senior Lecturer in Physical Geography**, Queen Mary University of London
2018–2021 **Lecturer in Physical Geography**, Queen Mary University of London
2017–2018 **Research Software Developer**, University College London
2017 **Lecturer in Physical Geography**, Queen Mary University of London
2016–2017 **Postdoctoral Research Associate**, University of Edinburgh
Topographic analysis and landslide modelling software.
2016 **Research Assistant**, Cardiff University

Education

2018–2020 **Postgraduate Certificate Academic Practice (PGCAP)** Queen Mary University of London
2013–2016 **Ph.D. in Atmospheric and Environmental Sciences** University of Edinburgh
Uncovering signatures of geomorphic process through high resolution topography.
Supervisors: Professor Simon M Mudd and Dr Tristram C Hales (Cardiff University)
2011–2012 **M.Sc. in Geographical Information Science** (Distinction) University of Edinburgh
Thesis Title: *An automated analysis of the southern San Andreas Fault to explore topography's relationship with tectonics.*
Supervisor: Professor Simon M Mudd
2007–2011 **B.Sc. (Hons.) in Geology and Physical Geography** (2:1) University of Edinburgh
Thesis Title: *The Influence of Climate Change on Landslide Sediment Yields in the Northern Lake District.*

Awards

QMUL Faculty Awards

2023 Excellence in Postgraduate Researcher Support *nominee*
2023 Digital teacher of the year *nominee*

QMUL Education Awards

2021 Online Learning Champion *nominee*
2021 Assessment and Feedback Champion *nominee*
2021 Innovative Use of Technology Award *nominee*
2019 Innovative Teaching Award *nominee*
2019 Technology Enhanced Learning Award *nominee*

- 2019 Teacher of the Year *nominee*
- 2018 **Software Sustainability Institute Fellowship**
Awarded to support my work developing sustainable geoscience software
- 2017 **Wiley Award** from the British Society for Geomorphology
Awarded for the best paper published in *Earth Surface Processes and Landforms* in 2016

Ph.D. Student Supervision

- 2025– **Billy Newman** QMUL Principal's Studentship: *Understanding the Geomorphological Characteristics of Anthropogenic Coasts.*
- 2024– **Desmond Teh** Cambridge Trusts: *Improving rainfall interception estimation with combined drone and terrestrial LiDAR data in forested areas.*
- 2024– **Graeme Erskine** AHRC Studentship: *A computer-based analysis of the Roman Roads of Northern Britain.*
- 2024– **Tom Hoseason** NERC London DTP Studentship: *Quantifying interactions between topographic variability and forest structure.*
- 2024– **Laura Molares Moncayo** Human Frontiers Science Programme Studentship: *The Role of the Atmosphere in Shaping and Sustaining Microbial Communities on Glaciers.*
- 2022– **Owen James** NERC London DTP Studentship: *Shoreline and Beach Volumetric Change Assessment and Prediction Using Machine Learning Techniques.*
- 2021– **Stefan Baternay** QMUL Principal's Studentship: *High resolution topographic analysis to reconstruct Martian landscape evolution.*
- 2021– **Matt Allen** UKRI AI4ER CDT: *Automated tree species classification from forest Terrestrial Laser Scanning Data.*
- 2020-2024 **Nan Wu** Lloyds Register Foundation: *Fate and behaviour of microplastics in the natural environment.* Now a Postdoc at British Antarctic Survey.
- 2020– **Shudan Xue** China Scholarship Council Studentship: *Erosion of Coastal Historic Landfills – Waste Release from East Tilbury landfill.*
- 2020-2024 **William Flynn** NERC London DTP Studentship: *Novel High-Resolution Three-Dimensional Mapping of Vegetation Using Unmanned Aerial Vehicles (UAV) and Structure from Motion Photogrammetry (SfM).* Now a Postdoc at the University of Cambridge.
- 2020-2021 **Harry Owen** NERC London DTP Studentship: *Climate Change and Biomass Dynamics: Novel Methods in Extracting Forest Biophysical Properties.* Now a Postdoc at the University of Cambridge.

Postdoctoral Research Supervision

- 2022-2024 **Milto Miltiadou** UKRI FLF tied PDRA: *Next generation forest dynamics modelling using remote sensing data.* Now a Lecturer in Computer Science at The University of Exeter.
- 2021– **Harry Owen** UKRI FLF tied PDRA: *Next generation forest dynamics modelling using remote sensing data.*

Research Statement

My research aims to develop an understanding of how signals of change, such as those driven by tectonics or the environment, manifest in the surface morphology of the Earth and other planetary bodies. In particular, I aim to bridge the gap between numerical models, remotely sensed data and field observations and I conduct such research through the development of open source software which facilitates reproducible analysis, with a particular focus on the

processing of high resolution topographic data. Such software allows repeatable experiments to be performed on both terrestrial and planetary landscapes, at a range of scales spanning individual hillslopes to continental scale features. I also work on the development and application of cutting edge GIS and computer science techniques to enhance surface process research, through the analysis of complex spatial information combined with novel data collection approaches and high performance computing.

Teaching Statement

My teaching, as with my research, focuses on the implementation and application of quantitative and computational methods, as a framework to understand Earth surface processes. I am passionate about engaging students to interpret landscapes and the processes which act upon them both in a classroom and field setting. I have experience of teaching theoretical and applied GIS, either within the context of physical geography or a number of other disciplines (transport planning, infrastructure, crime research, archaeology) at both an undergraduate and postgraduate level. Aside from teaching physical geography and GIS, I also enjoy teaching scientific programming to students, giving them a grounding in data analysis and visualisation which can be employed throughout their time in education and beyond. Such skills are vital for students and I believe I am well placed to teach these skills within a physical science context.

Media

2023 Landfills: Britain's Toxic Secrets. **BBC Panorama**. Broadcast 22/05/2023.

Other Employment

2015–2016 **GIS Consultant and Field Course Leader**, GeoBus, University of St Andrews
2012–2013 **GIS Trainee** Forth Crossing Bridge Constructors

Publications

†denotes student author.

- Preprint Allen, M.J.†, Owen, H.J.F., **Grieve, S.W.D.**, Lines, E.R., *Manual Labelling Artificially Inflates Deep Learning-Based Segmentation Performance on RGB Images of Closed Canopy: Validation Using TLS*. [\[URL\]](#) [\[BibTeX\]](#)
- Preprint Owen, H.J.F., Allen, M.J.†, **Grieve, S.W.D.**, Wilkes, P., Lines, E.R., *PointsToWood: A deep learning framework for complete canopy leaf-wood segmentation of TLS data across diverse European forests* [\[URL\]](#) [\[BibTeX\]](#)
- 2025 Metheringham, C.L., Plumb, W.J., Flynn, W.R.M†, Stocks, J.J., Kelly L.J., Nemesio-Gorriz, M., **Grieve, S.W.D.**, Moat, J., Lines, E.R., Buggs, R.J.A, Nichols, R.A., *Rapid polygenic adaptation in a wild population of ash trees under a novel fungal epidemic*. *Science*. [\[URL\]](#) [\[BibTeX\]](#)
- 2025 **Grieve, S.W.D.**, Singer, M.B., Chen, S-a, Michaelides, K., *GDBM: A database of global drainage basin morphology*. *PLOS ONE*. [\[URL\]](#) [\[BibTeX\]](#)
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- 2025 Miltiadou, M., **Grieve, S.W.D.**, Ruiz-Benito, P., Astigarraga, J., Cruz-Alonso, V., Triviño, J.T., Lines, E.R., *PlotToSat: A Tool for Generating Time-series Signatures from Sentinel-1 and Sentinel-2 at 3 at field-based plots for Machine Learning applications*. Environ. Model. Softw. [\[URL\]](#) [\[BibTeX\]](#)
- 2025 Kargère, B.A.†, Hales, T.C., Constantine, J.A., **Grieve, S.W.D.**, Johnson, S.D., *A Fractal Framework for Channel-Hillslope Coupling*. Earth Surf. Dynam. [\[URL\]](#) [\[BibTeX\]](#)
- 2025 Wu, N†, **Grieve, S.W.D.**, Manning, A.J., Spencer K.L., *Marine snow as vectors for microplastic transport: Multiple aggregation cycles account for the settling of buoyant microplastics to deep-sea sediments*. Limnol. Oceanogr. [\[URL\]](#) [\[BibTeX\]](#)
- 2024 Singer, M.B., **Grieve, S.W.D.**, Chen, S-a, Michaelides, K., *Climatic Controls on the Length and Shape of the World's Drainage Basins*. Geophys. Res. Lett. [\[URL\]](#) [\[BibTeX\]](#)
- 2024 Wu, N†, **Grieve, S.W.D.**, Manning, A.J., Spencer K.L., *Flocs as vectors for microplastics in the aquatic environment*. Nat. Water [\[URL\]](#) [\[BibTeX\]](#)
- 2024 Allen, M.J.†, Moreno-Fernández, D., Ruiz-Benito, P., **Grieve, S.W.D.**, Lines, E.R., *Low-cost tree crown dieback estimation using deep learning-based segmentation*. Environmental Data Science. [\[URL\]](#) [\[BibTeX\]](#)
- 2024 Miltiadou, M., Lines, E.R., **Grieve, S.W.D.**, Ruiz-Benito, P., Astigarraga, J., Cruz, V., *Tree genera classifications in Spain using time-series Sentinel-2 data extracted from PlotToSat*. IEEE International Geoscience and Remote Sensing Symposium. [\[URL\]](#) [\[BibTeX\]](#)
- 2024 Flynn, W.R.M†, **Grieve, S.W.D.**, Henshaw, A.J., Owen, H.J.F., Buggs, R.J.A, Metheringham, C.L., Plumb, W.J., Stocks, J.J, Lines, E.R., *UAV-derived greenness and within-crown spatial patterning can detect ash dieback in individual trees*. Ecol. Solut. Evid. [\[URL\]](#) [\[BibTeX\]](#)
- 2024 James, O.C.†, Schillereff, D.N., **Grieve, S.W.D.**, Baas, A.C.W., *PyShoreVolume 1.0.0: A Python based Shoreline Change and beach Volumetric Change Analysis tool*. Comput. Geosci. [\[URL\]](#) [\[BibTeX\]](#)
- 2023 Flynn, W.R.M†, Owen, H.J.F., **Grieve, S.W.D.**, Lines, E.R., *Quantifying vegetation indices using TLS: methodological complexities and ecological insights from a Mediterranean forest*. Biogeosciences. [\[URL\]](#) [\[BibTeX\]](#)
- 2022 Chen, S-a, Michaelides, K., **Grieve, S.W.D.**, Singer, M.B., *Reply to: Climate versus tectonics as controls on river profiles*. Nature. [\[URL\]](#) [\[BibTeX\]](#)
- 2022 Lines, E.R., Allen, M.J.†, Cabo, C., Calders, K., Debus, A., **Grieve, S.W.D.**, Miltiadou, M., Noach, A., Owen, H.J.F, Puliti, S., *AI applications in forest monitoring need remote sensing benchmark datasets*. Big Data Analytics for Sustainability 2022. [\[URL\]](#) [\[BibTeX\]](#)
- 2022 Allen, M.J.†, **Grieve, S.W.D.**, Owen, H.J.F, Lines, E.R., *Tree species classification from complex laser scanning data in Mediterranean forests using deep learning* Methods Ecol. Evol. [\[URL\]](#) [\[BibTeX\]](#)
- 2021 Gailleton, B., Mudd, S.M., Clubb, F.J., **Grieve, S.W.D.**, Hurst, M.D., *Impact of changing concavity indices on channel steepness and divide migration metrics*. J. Geophys. Res. Earth Surf. [\[URL\]](#) [\[BibTeX\]](#)
- 2021 Gabet, E.J., Mudd, S.M., Wood, R.W., **Grieve, S.W.D.**, Binnie, S.A., Dunai, T.J., *Hilltop Curvature Increases with the Square Root of Erosion Rate*. J. Geophys. Res. Earth Surf. [\[URL\]](#) [\[BibTeX\]](#)

- 2020 **Grieve, S.W.D.**, Clubb, F.J., Mudd, S.M., *Reproducible topographic analysis*. In Tarolli, P., Mudd S.M. (Ed.) Remote Sensing of Geomorphology. [\[URL\]](#) [\[BibTeX\]](#)
- 2020 Clubb, F.J., Mudd, S.M., Hurst, M.D., **Grieve, S.W.D.**, *Differences in channel and hillslope geometry record a migrating uplift wave at the Mendocino Triple Junction*. Geology. [\[URL\]](#) [\[BibTeX\]](#)
- 2019 Chen, S-a, Michaelides, K., **Grieve, S.W.D.**, Singer, M.B., *Aridity is expressed in river topography globally*. Nature. [\[URL\]](#) [\[BibTeX\]](#)
- 2019 Hurst, M.D., **Grieve, S.W.D.**, Mudd, S.M., Clubb, F.J., *Detection of channel-hillslope coupling along a tectonic gradient*. Earth Planet. Sci. Lett. [\[URL\]](#) [\[BibTeX\]](#)
- 2018 **Grieve, S.W.D.**, Hales, T.C., Parker, R.N., Mudd, S.M., Clubb, F.J., *Controls on zero-order basin morphology*. J. Geophys. Res. Earth Surf. [\[URL\]](#) [\[BibTeX\]](#)
- 2017 **Grieve, S.W.D.**, *spatial-efd: A spatial-aware implementation of elliptical Fourier analysis*. J. Open Source Softw. [\[URL\]](#) [\[BibTeX\]](#)
- 2016 **Grieve, S.W.D.**, Mudd, S.M., Hurst, M.D., *How long is a hillslope?* Earth Surf. Process. Landforms. [\[URL\]](#) [\[BibTeX\]](#)
- 2016 **Grieve, S.W.D.**, Mudd, S.M., Hurst, M.D., Milodowski, D.T., *A nondimensional framework for exploring the relief structure of landscapes*. Earth Surf. Dynam. [\[URL\]](#) [\[BibTeX\]](#)
- 2016 **Grieve, S.W.D.**, Mudd, S.M., Milodowski, D.T., Clubb, F.J., Furbish, D.J., *How does grid-resolution modulate the topographic expression of geomorphic processes?* Earth Surf. Dynam. [\[URL\]](#) [\[BibTeX\]](#)
- 2016 Parker, R.N., Hales, T.C., Mudd, S.M., **Grieve, S.W.D.**, Constantine, J.A., *Colluvium supply in humid regions limits the frequency of storm-triggered landslides*. Sci. Rep. [\[URL\]](#) [\[BibTeX\]](#)
- 2016 Mudd, S. M., Harel, M.-A., Hurst, M. D., **Grieve, S.W.D.**, and Marrero, S. M., *The CAIRN method: Automated, reproducible calculation of catchment-averaged denudation rates from cosmogenic radionuclide concentrations*, Earth Surf. Dynam. [\[URL\]](#) [\[BibTeX\]](#)
- 2016 Clubb, F.J., Mudd, S.M., Attal, M., Milodowski, D.T., and **Grieve, S.W.D.**, *The relationship between drainage density, erosion rate, and hilltop curvature: implications for sediment transport processes*, J. Geophys. Res. Earth Surf. [\[URL\]](#) [\[BibTeX\]](#)
- 2014 Mudd, S.M., Attal, M., Milodowski, D.T., **Grieve, S.W.D.**, Valters, D.A., *A statistical framework to quantify spatial variation in channel gradients using the integral method of channel profile analysis*. J. Geophys. Res. Earth Surf. [\[URL\]](#) [\[BibTeX\]](#)

Conference Presentations

INVITED TALKS

- 2025 **Grieve, S.W.D.**, *Understanding landscape morphology with high resolution 3D data*. Presented at the Digital Environment Research Institute, Queen Mary University of London.
- 2025 **Grieve, S.W.D.**, *Forest-landscape dynamics: Terrestrial Laser Scanning as a tool to link forest structure and landscape form in 3D*. Presented at The School of GeoSciences, University of Edinburgh.

- 2024 **Grieve, S.W.D.**, *Forest-landscape dynamics: Terrestrial Laser Scanning as a tool to link forest structure and landscape form in 3D*. Presented at The Department of Geography, University of Durham.
- 2019 **Grieve, S.W.D.**, *Lasers, landslides and bendy bananas*. Presented at The School of Geography, Queen Mary University of London.
- 2017 **Grieve, S.W.D.**, *Geomorphic insight from high resolution topography: Is it reproducible?* Wiley Award Keynote Lecture, BSG Annual General Meeting, Hull
- 2016 **Grieve, S.W.D.**, *Uncovering signatures of geomorphic process through high resolution topography*. Presented at The Hutton Club, University of Edinburgh.
- 2015 **Grieve, S.W.D.**, *Reproducible geographic analysis: Insights from geomorphology*. Presented at GIS Update, Edinburgh.

ORAL PRESENTATIONS

- 2024 Allen, M.J.†, Owen, H.J.F., Disney, M., Wilkes, P., **Grieve, S.W.D.**, Lines, E.R., *Large-Scale Self-Supervised Learning on Forest Point Cloud Data*. Presented at the AGU Fall Meeting, Washington, D.C.
- 2024 Kargère, B.†, Hales, T.C., Constantine J.A., **Grieve, S.W.D.**, *A Fractal Framework for Channel-Hillslope Coupling*. Presented at the AGU Fall Meeting, Washington, D.C.
- 2024 **Grieve, S.W.D.**, Owen, H.J.F., Ruiz-Benito, P., Lines, E.R., *Terrestrial laser scanning for forest geomorphology*. Presented at the BSG Annual Meeting, Loughborough.
- 2024 James, O.C.†, Schillereff, D.N., **Grieve, S.W.D.**, *The application of webcams to create high-frequency digital elevation models of the intertidal zone*. Presented at the BSG Annual Meeting, Loughborough.
- 2024 **Grieve, S.W.D.**, Owen, H.J.F., Ruiz-Benito, P., Lines, E.R., *Forest-landscape dynamics across a climate gradient*. Presented at the EGU General Assembly, Vienna.
- 2024 Wu, N.†, **Grieve, S.W.D.**, Manning, A.J., Spencer, K.L., *Modelling the sedimentation of macro-, micro- and nanoplastics in the ocean from surface to sediment*. Presented at the EGU General Assembly, Vienna.
- 2024 Baternay, S.A.†, **Grieve, S.W.D.**, Wharton, G., Grindrod, P.M., Davis, J.M., *Quantifying Martian Hillslope Variability*. Presented at the Lunar and Planetary Science Conference, Texas.
- 2023 Wu, N.†, **Grieve, S.W.D.**, Manning, A.J., Spencer, K.L., *The Longevity of Plastic Waste at the Ocean Surface*. Presented at the AGU Fall Meeting, San Francisco.
- 2023 Flynn, W.R.M.†, **Grieve, S.W.D.**, Henshaw, A.J., Owen, H.J.F., Lines, E.R., *Bridging the gap between earth observation and forest ecology*. Presented at SilviLaser 2023, London.
- 2023 Allen, M.J.†, Noach, A., Owen, H.J.F., **Grieve, S.W.D.**, Lines, E.R., *Efficient 3D Forest Point Cloud Data Processing: Self-Supervised Learning Strategies to Diminish Manual Labeling*. Presented at SilviLaser 2023, London.
- 2023 Lines, E.R., **Grieve, S.W.D.**, Owen, H.J.F., Ruiz-Benito, P., *The structural properties of trees and forests in Europe*. Presented at SilviLaser 2023, London.

- 2023 **Grieve, S.W.D.**, Owen, H.J.F., Miltiadou, M., Lines, E.R., *Building 'good enough' digital workflows in the field*. Presented at RSLondonSouthEast 2023, London.
- 2023 Lines, E.R., Flynn W.R.M†, **Grieve, S.W.D.**, Ruiz-Benito, P., *Comparison of extracted ecological features of forests from multiple 3D technologies*. Presented at the EGU General Assembly, Vienna.
- 2023 Wu, N.†, **Grieve, S.W.D.**, Manning, A.J., Spencer, K.L., *Aquatic Aggregates as 'Vector' for Microplastics*. Presented at the EGU General Assembly, Vienna.
- 2022 Flynn W.R.M†, **Grieve, S.W.D.**, Henshaw, A.J., Lines, E.R., *Quantifying the impact of Ash Dieback in individual tree crowns using multi-temporal UAV RGB 3D data*. Presented at the British Ecological Society Annual Meeting, Edinburgh.
- 2022 Wu, N.†, Spencer, K.L., **Grieve, S.W.D.**, Manning, A.J., *The Estuary as a Natural Water Treatment Plant for Microplastics*. Presented at the EGU General Assembly, Vienna.
- 2021 Owen, H.J.F, **Grieve, S.W.D.**, Lines, E.R., *Three-dimensional structural plasticity in Mediterranean forests*. Presented at the British Ecological Society Annual Meeting, Liverpool.
- 2021 Wu, N.†, Spencer, K.L., **Grieve, S.W.D.**, Manning, A.J., *A systematic study on the interaction between microplastics and cohesive sediments*. Presented at INTERCOH 2021, Online.
- 2020 Heppell C.M., Bartlett, A., Beechey, A., Jennings, P., Soteriou, H., Rhys, H., Schaefer, B., Beck, C., Treves, R., **Grieve, S.W.D.**, Wu, Y., Haklay, M., Dinnadge, R., Wishart, J., *ChessWatch: An on-line observatory for the River Chess*. Presented at the British Ecological Society Aquatic SIG Annual Meeting, Online.
- 2019 **Grieve, S.W.D.**, Singer, M.B., Chen, S-a, Michaelides, K., *Understanding rivers using the Space Shuttle, LSDTopoTools and HPC*. Presented at RSLondonSouthEast 2019, London.
- 2018 Singer, M.B., **Grieve, S.W.D.**, Chen, S-a, Michaelides, K., *Climatic Signatures Within the World's Rivers*. Presented at the AGU Fall Meeting, Washington, D.C.
- 2018 Clubb, F.J., Mudd, S.M., Hurst, M.D., **Grieve, S.W.D.**, *Tectonics vs. eustasy: fluvial terraces, channel profiles, and hillslopes at the Mendocino Triple Junction, California* Presented at the EGU General Assembly, Vienna.
- 2018 Alegre, R., Georgoulas, A., **Grieve, S.W.D.**, Robson, E., *Democratizing ancient Mesopotamian research through digital scholarship* Presented at the IEEE 14th International Conference on e-Science, Amsterdam.
- 2017 Mason, L., Hetherington, J., O'Reilly, M., Yong, M., Jersakova, R., **Grieve, S.W.D.**, Perez-Suarez, D., Klapaukh, R., Craster, R.V. and Matar, O.K., *Working research codes into fluid dynamics education: a science gateway approach*. Presented at The APS Division of Fluid Dynamics, Denver.
- 2016 Mudd, S.M., Sinclair, H.D., LeDivellec, T., Dallas, K., **Grieve, S.W.D.**, *A single event in the Ladakh Himalaya resulted in erosion equivalent to greater than 1000 years of the average erosion rate*. Presented at the BSG Annual General Meeting, Plymouth.
- 2015 **Grieve, S.W.D.**, Mudd, S.M., Hurst, M.D., *Constraining hillslope sediment flux using high resolution topographic data*. Presented at the BSG Annual General Meeting, Southampton.

- 2015 Clubb, F.J., Mudd, S.M., Attal, M., Milodowski, D.T., **Grieve, S.W.D.**, *The Relationship between Drainage Density, Erosion Rate, and Hilltop Curvature: Implications for Sediment Transport Processes*. Presented at the BSG Annual General Meeting, Southampton.

POSTER PRESENTATIONS

- 2025 Newman, B.A.†, Spencer, K.L. **Grieve, S.W.D.**, *Geomorphologic characteristics of eroding anthropogenic coastlines*. Presented at the 1st Workshop of the IAG Working Group on Urban Geomorphology, Kraków.
- 2025 **Grieve, S.W.D.**, Xue, S.†, Spencer, K.L., *Geomorphometric monitoring of eroding historic coastal landfills*. Presented at the EGU General Assembly, Vienna.
- 2024 Hoseason, T.†, **Grieve, S.W.D.**, Harvey, G.L., Lines, E.R., *Quantifying topographic variability in forested landscapes*. Presented at the BSG Annual Meeting, Loughborough.
- 2023 Wu, N.†, **Grieve, S.W.D.**, Manning, A.J., Spencer, K.L., *Flocs as Vectors for Microplastics in the Aquatic Environment*. Presented at the AGU Fall Meeting, San Francisco.
- 2023 Wu, N.†, **Grieve, S.W.D.**, Manning, A.J., Spencer, K.L., *Modelling the Sedimentation of Micro- and Nanoplastics in the Ocean from Surface to Sediment*. Presented at Nanoplastics: Origin, Structure and Fate, Utrecht.
- 2023 Xue, S.†, Spencer, K.L., **Grieve, S.W.D.**, *Erosion Estimation in Coastal Historic Landfills Using Terrestrial Laser Scanning*. Presented at the BSG Annual Meeting, Edinburgh.
- 2023 Marshall-Hawkes, R., Owen, H.J.F, **Grieve, S.W.D.**, Lines, E.R., *Bridging the gap between earth observation and forest ecology*. Presented at SilviLaser 2023, London.
- 2023 Miltiadou, M., **Grieve, S.W.D.**, Ruiz-Benito, P., Lines, E.R., *Bridging the gap between earth observation and forest ecology*. Presented at SilviLaser 2023, London.
- 2023 Owen, H.J.F, Noach, A., Allen, M.J.†, **Grieve, S.W.D.**, Lines, E.R., *Improved leaf wood classification using deep learning in European Forests*. Presented at SilviLaser 2023, London.
- 2023 Wu, N.†, Spencer, K.L. **Grieve, S.W.D.**, Manning, A.J., *Flocs as Vectors for Microplastics in the Aquatic Environment*. Presented at the Recent Trends in Microplastic Research Meeting, Jena.
- 2023 **Grieve, S.W.D.**, Owen, H.J.F, Ruiz-Benito, P., Lines, E.R., *High resolution forest-landscape interactions*. Presented at the EGU General Assembly, Vienna.
- 2023 Xue, S.†, Spencer, K.L., **Grieve, S.W.D.**, *The impacts of climate change on eroding coastal historic landfills*. Presented at the EGU General Assembly, Vienna.
- 2023 Miltiadou, M. **Grieve, S.W.D.**, Owen, H.J.F, Ruiz-Benito, P., Lines, E.R., *Fusion of European forest inventories with Sentinel-1 and Sentinel-2 data for improving scalability in estimating forest variables*. Presented at the EGU General Assembly, Vienna.
- 2022 **Grieve, S.W.D.**, Triviño, J.T., Astigarraga, J., Owen, H.J.F, Ruiz-Benito, P., Lines, E.R., *Linking forests and landscapes in four dimensions*. Presented at the BSG Annual Meeting, Northumbria.
- 2021 Allen, M.J.†, Owen, H.J.F, **Grieve, S.W.D.**, Lines, E.R., *Automated tree species classification from forest Terrestrial Laser Scanning data*. Presented at the British Ecological Society Annual Meeting, Liverpool.

- 2021 Xue, S.†, Spencer, K.L., **Grieve, S.W.D.**, *A global perspective on the future impacts of brownfield and solid waste disposal sites in the coastal zone*. Presented at ECSA 58 - EMECS 13: Estuaries and coastal seas in the Anthropocene, Online.
- 2021 Mudd, S.M., Gabet, E.J., Wood, R.W., **Grieve, S.W.D.**, Binnie, S.A, Dunai, T.J., *Rapidly eroding hilltops are surprisingly smooth: ridgetop curvature varies with the square root of erosion rate*. Presented at vEGU2021: Gather Online.
- 2020 **Grieve, S.W.D.**, Mudd, S.M., Clubb, F.J., Singer, M.B., Michaelides, K., Chen, S-a, *Inverting fluvial network topology to understand landscape dynamics*. Presented at EGU2020: Sharing Geoscience Online.
- 2020 Wheatland, J., Spencer, K.L., **Grieve, S.W.D.**, Gu, C., Carr, S., Manning, A., Bushby, A., Botto, L. *A New 3D Descriptor for Irregularly Shaped Suspended Sediment Aggregates*. Presented at EGU2020: Sharing Geoscience Online.
- 2020 Gailleton, B., Mudd, S.M., Clubb, F.J., Hurst, M.D., **Grieve, S.W.D.**, *Importance of concavity for interpreting rates and patterns of landscape evolution from river profiles*. EGU2020: Sharing Geoscience Online.
- 2019 Clubb, F.J., Mudd, S.M., **Grieve, S.W.D.**, Hurst, M.D., Gailleton, B., Milodowski, D.T., Valters, D., Goodwin, G., *LSDTopoTools: open-source software for topographic analysis*. Presented at the AGU Fall Meeting, San Francisco.
- 2019 **Grieve, S.W.D.**, Mudd, S.M., Clubb, F.J., Singer, M.B., Michaelides, K., Chen, S-a, *Fingerprinting landscape dynamics through fluvial network topology*. Presented at the BSG Annual General Meeting, Sheffield.
- 2019 Bourne, A.J., Davis, S.M., Abbott, P.M., **Grieve, S.W.D.**, *Determining possible controls on Icelandic volcanism during the last glacial period: an examination of the Greenland ice-core tephra framework*. Presented at The 20th Congress of the International Union for Quaternary Research (INQUA) 2019, Dublin.
- 2019 **Grieve, S.W.D.**, Hales, T.C., Parker, R.N., Mudd, S.M., Clubb, F.J., *Relationships between zero order basin morphology and sediment transport*. Presented at the EGU General Assembly, Vienna.
- 2018 Chen, S-a, Michaelides, K., **Grieve, S.W.D.**, Singer, M.B., *Climatic Controls on River Longitudinal Profiles Globally*. Presented at the AGU Fall Meeting, Washington, D.C.
- 2018 **Grieve, S.W.D.**, Hales, T.C., Parker, R.N., Mudd, S.M., Clubb, F.J., *Understanding the relationship between colluvial hollow morphology and hillslope processes*. Presented at the EGU General Assembly, Vienna.
- 2017 Clubb, F.J., Mudd, S.M., Hurst, M.D., **Grieve, S.W.D.**, *Unsteady Landscapes: Fluvial Terraces, Channel Profiles, and Hillslopes at the Mendocino Triple Junction, California*. Presented at the AGU Fall Meeting, New Orleans.
- 2016 Hales, T.C., Parker, R.N., Mudd, S.M., **Grieve, S.W.D.**, *How do Colluvial Hollows Fill?* Presented at the AGU Fall Meeting, San Francisco.
- 2016 Hurst, M.D., **Grieve, S.W.D.**, Mudd, S.M., *Coupled analysis of hillslope and channel metrics for erosion rates in a tectonically active landscape*. Presented at the AGU Fall Meeting, San Francisco.

- 2016 **Grieve, S.W.D.**, Mudd, S.M., Milodowski, D.T., Clubb, F.J., Furbish, D.J., *How does the resolution of topographic data impact the measurement of geomorphic processes?* Presented at the BSG Annual General Meeting, Plymouth.
- 2016 Mudd, S.M., Hurst, M.D., **Grieve, S.W.D.**, Milodowski, D.T., Clubb, F.J., Attal, M. *Detecting geomorphic processes and change with high resolution topographic data.* Presented at the EGU General Assembly, Vienna.
- 2015 Mudd, S.M., **Grieve, S.W.D.**, Milodowski, D.T., Hurst, M.D., Clubb, F.J., Valters, D.A., *LSD-TopoToolBox: Open source geomorphology.* Presented at the BSG Annual General Meeting, Southampton.
- 2015 Clubb, F.J., Mudd, S.M., Attal, M., Milodowski, D.T., **Grieve, S.W.D.**, *The Relationship between Drainage Density, Erosion Rate, and Hilltop Curvature: Implications for Sediment Transport Processes.* Presented at the AGU Fall Meeting, San Francisco.
- 2015 Parker, R.N., Hales, T.C., Mudd, S.M., **Grieve, S.W.D.**, *Precipitation and soil accumulation history modifies future landslide hazard.* Presented at the AGU Fall Meeting, San Francisco.
- 2015 Parker, R.N., Hales, T.C., Mudd, S.M., **Grieve, S.W.D.**, *Climate change has limited impact on soil-mantled landsliding.* Presented at the EGU General Assembly, Vienna.
- 2014 **Grieve, S.W.D.**, Mudd, S.M., Hales, T.C., *How long is a hillslope?* Presented at the AGU Fall Meeting, San Francisco.
- 2014 Mudd, S.M., Attal, M., Milodowski, D.T., **Grieve, S.W.D.**, Valters, D.A., *A statistical technique for identifying channels of different steepness in transient landscapes.* Presented at the EGU General Assembly, Vienna.

Classroom Teaching Experience (Course Level)

- 2023 Individual Research Project, Supervisor (M.Sc.)
- 2023 Environmental Data Acquisition and Analysis, Lecturer (M.Sc.)
- 2022 Research Design and Methods, Lecturer (M.Sc.)
- 2021– Ideas and Practice in Geography and Environmental Science, Tutor (1st year)
- 2020 Research Design, Convener (2nd year)
- 2019– Advanced Geospatial Science, Convener (3rd year)
- 2019 Fieldwork in Physical Geography and Environmental Science, Lecturer (1st year)
- 2019 Progress in Physical Geography and Environmental Science, Lecturer (3rd year)
- 2019– Geospatial Science, Lecturer (2nd year)
- 2018 Environmental Hazards, Lecturer (3rd year)
- 2018– Geomorphology, Lecturer, Convener (2nd year)
- 2018–2023 Geography in the World, Lecturer (1st year)
- 2018– Independent Geographical Study/Project in Environmental Science, Supervisor (3rd year)
- 2017–2018 Research Software Engineering with Python, Lecturer (M.Sc.)
- 2016 Quantitative Methods in Earth Sciences, Laboratory Demonstrator (3rd year)
- 2015 Geomorphology, Laboratory Demonstrator and Tutor (2nd year)
- 2014–2015 Object Oriented Software Engineering Principles, Laboratory Demonstrator (M.Sc.)
- 2014–2015 Object Oriented Software Engineering: Spatial Algorithms, Laboratory Demonstrator (M.Sc.)
- 2014–2015 Principles of Geographical Information Science, Laboratory Demonstrator (M.Sc.)
- 2014–2015 Introduction To Spatial Analysis, Laboratory Demonstrator (M.Sc.)

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| 2014–2015 | Distributed GIS, Laboratory Demonstrator (M.Sc.) |
| 2014–2015 | Spatial Modelling, Laboratory Demonstrator (M.Sc.) |
| 2014 | Earth Surface Systems Course Assistant (1st year) |
| 2014 | Fundamental Methods in Geography, Laboratory and Field Demonstrator (2nd year) |
| 2013–2016 | Geo-Visualisation, Laboratory Demonstrator (M.Sc.) |
| 2013–2015 | Advanced Spatial Database Methods, Laboratory Demonstrator (M.Sc.) |
| 2013–2015 | Further Spatial Analysis, Laboratory Demonstrator (M.Sc.) |
| 2013–2014 | Earth Surface Systems, Laboratory Demonstrator and Tutor (1st year) |

Field Teaching Experience (Course Level)

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| 2023 | Bore Place fieldtrip (1st year) |
| 2022 | Getting started in Geography and Environmental Research (1st year) |
| 2017, 2019 | Fieldwork in Physical Geography and Environmental Science (1st year) |
| 2014–2015 | Cyprus field course (4th year honours) |
| 2014 | Fundamental Field Methods in Geography (2nd year) |

Service

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| 2025 | Co-Convener EGU Session GM2.2, <i>Novel data, methods and applications in Geomorphometry</i> . EGU General Assembly, Vienna. |
| 2024 | Ph.D. Examiner: Jordan Bull, <i>Rewilding and Natural Flood Management - Quantifying the Effects of Vegetation Succession</i> . |
| 2024 | Co-Convener EGU Session GM3.2, <i>Novel data, methods and applications in Geomorphometry</i> . EGU General Assembly, Vienna. |
| 2023– | Editorial Board Member Earth Surface Processes and Landforms. |
| 2023– | Chair of the Publications and Communications Committee British Society for Geomorphology. |
| 2023 | Athena Swan Data Lead School of Geography, Queen Mary University of London. |
| 2023– | IT and Research Infrastructure Board Faculty Representative Queen Mary University of London. |
| 2021– | Director of Graduate Studies (Physical Geography and Environmental Science) School of Geography, Queen Mary University of London. |
| 2021–2023 | Managed Research Desktop Advisory Group Queen Mary University of London. |
| 2021 | Co-Convener EGU Session GM2.7, <i>Advances in geomorphometry and landform mapping: possibilities, challenges and perspectives</i> . vEGU2021: Gather Online. |
| 2021– | Grant Reviewer NASA Mars Data Analysis Program |
| 2021 | Ph.D. Examiner: Thomas Lawrence, <i>Quantification of Micro-Scale Floc Porosity Characteristics Utilising 3D Microtomography</i> . |
| 2020–2021 | Deputy Director of Examinations School of Geography, Queen Mary University of London. |
| 2019– | Panel Member Software Sustainability Institute Fellowship programme. |
| 2020 | Judge at NERC DTP Environmental Hackathon. |
| 2020 | Co-Convener EGU Session GM2.1, <i>Advances in geomorphometry and landform mapping: possibilities, challenges and perspectives</i> . EGU2020: Sharing Geoscience Online. |
| 2020 | Co-Convener EGU Short Course SC1.2, <i>Testing geoscientific code in Python: what, how, and why you should be doing it</i> . EGU2020: Sharing Geoscience Online. |
| 2019 | Convener EGU Short Course SC1.36, <i>Making high resolution topographic analysis more reproducible with LSDTopoTools</i> . EGU General Assembly, Vienna. |
| 2019– | Grant Reviewer: NERC Constructing a Digital environment |
| 2019 | Ph.D. Examiner: Gabriel Connor-Streich, <i>Graph theoretical analysis of braided rivers</i> . |

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| 2018–2020 | Academic lead on engagement, retention and success School of Geography, Queen Mary University of London. |
| 2018– | Academic Advisor For B.Sc. Geography and B.Sc. Environmental Science programs at Queen Mary University of London. |
| 2014– | Journal Peer Reviewer: Geological Society of America Bulletin; Geophysical Research Letters; Geomorphology; International Journal of Geographical Information Science; Journal of Geophysical Research: Earth Surface; Water Resources Research; Icarus; Scientific Reports; The Journal of Hydrology; The Journal of Open Source Software; Earth Surface Dynamics; Entropy; Earth Surface Processes and Landforms; Reference Module in Earth Systems and Environmental Sciences |
| 2014–2015 | Session Chair M.Sc. GIS postgraduate conference, University of Edinburgh. |

Funding Received

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| 2025 | University of Lincoln College QR Research Fund: <i>Landscape Disruptors: Invasive plants as an unquantified risk to landscapes, flooding and infrastructure in a changing world</i> P.I. Catherine Sanders Co.I. Stuart W. D. Grieve Award: £8,850 |
| 2025 | ESRC responsive mode: <i>Critically Green: Tracing the Geopolitical, Social and Environmental Footprints of Military Decarbonisation</i> P.I. Benjamin Neimark Co.I. Stuart W. D. Grieve Award: £782,728 |
| 2024 | British Council <i>Indonesia BMKG PhD Scholarship</i> Co-Lead Stuart W. D. Grieve Co-Lead Cedric John Award: Partnership agreement to fully fund PhDs until 2030 |
| 2024 | DERI Events and Sponsorship Fund <i>The role of 3D data to understand the structure and function of environmental systems</i> P.I. Stuart W. D. Grieve Award: £240 |
| 2024 | Royal Society International Exchanges Scheme: <i>Quantifying the three dimensional structure and function of flocs</i> P.I. Kate L. Spencer Co.I. Stuart W. D. Grieve Award: £7,283 |
| 2021 | QMUL Undergraduate Research Bursary Scheme: <i>Mapping channel head morphology under a changing climate</i> P.I. Stuart W. D. Grieve Award: £1,000 |
| 2021 | Code for Science and Society Event Fund: <i>Reproducible Silicon Landscapes</i> P.I. Stuart W. D. Grieve Co. I Fiona J. Clubb Award: £14,314 |
| 2020 | NERC COVID-19 Public Engagement Grant: <i>ChessWatch: a co-designed online observatory for the River Chess</i> |

PI. Catherine M. Heppell
Co. I: **Stuart W. D. Grieve**
Award: **£10,000**

- 2020 UKRI Future Leaders Fellowship: *Next generation forest dynamics modelling using remote sensing data*
PI. Emily R. Lines
Co. I: **Stuart W. D. Grieve**
Award: **£1,230,000**
- 2019 QMUL Strategic Facilities Investment Fund: *A multi-sensor aerial observatory for dynamic characterisation of Earth's landscapes and ecosystems*
PI.: **Stuart W. D. Grieve** and Emily R. Lines
Award: **£348,839**
- 2017 British Society for Geomorphology Outreach Grant: *GeoBus: River in a box*
PI.: **Stuart W. D. Grieve**
Co. I: Charlotte J Pike
Award: **£900**
- 2014 British Society for Geomorphology Student Travel Grant
Award: **£750**
- 2014 NERC Cosmogenic Isotope Analysis Facility: *Hillslope-channel coupling in a steady-state landscape.*
PI.: T.C. Hales
Co. I.: Simon M. Mudd, Robert N. Parker and **Stuart W. D. Grieve**
Award: **£19,320**
- 2013 Safe Software Grant Program
Award: **Software licence for FME Desktop Edition**
- 2011 SAAS Postgraduate Students' Allowances Scheme
Award: **£3400**
- 2011 University of Edinburgh Postgraduate Bursary
Award: **£1300**
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Professional Memberships

- 2020– Fellow of the Higher Education Academy
2019– Society of Research Software Engineering
2016– European Geosciences Union
2014– American Geophysical Union
2014– British Society for Geomorphology
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Other Qualifications

- 2022– UK Civil Aviation Authority A2 UAV Pilot certificate of competence