

David Whipp

Associate professor, University of Helsinki

Institute of Seismology, Department of Geosciences and Geography

P.O. Box 68 (Pietari Kalmin katu 5)

FI-00014 University of Helsinki, Finland

firstname.lastname@helsinki.fi - +358 (0)2 941 51617

davewhipp.github.io - wiki.helsinki.fi/x/3xjABg (group)

[davewhipp](#) - [0000-0002-3820-6886](#) - [R⁶ David_Whipp](#) - [@dave_whipp](#)

Education

Ph.D., Geology , University of Michigan, Ann Arbor, MI, USA.	2003-2008
B.S., Geology (Physics minor) , University of Michigan, Ann Arbor, MI, USA.	1998-2002

Experience

Associate professor , Department of Geosciences and Geography, University of Helsinki, Helsinki, Finland.	2017-present
Adjunct of the Faculty of Graduate Studies , Department of Earth Sciences, Dalhousie University, Halifax, NS, Canada.	2013-2023
Assistant professor , Department of Geosciences and Geography, University of Helsinki, Helsinki, Finland.	2013-2016
Postdoctoral fellow , Department of Oceanography, Dalhousie University, Halifax, NS, Canada.	2009-2012
Postdoctoral fellow , Géosciences Rennes, University of Rennes 1, Rennes, France.	2008-2009
Geoscientist (intern) , ExxonMobil Exploration Company, Houston, TX, USA.	2007
Research assistant , Department of Geological Sciences, University of Michigan, Ann Arbor, MI, USA.	2003-2008
Tech consultant and Sites rover , Campus Computing Sites, University of Michigan, Ann Arbor, MI, USA.	2000-2002

Publications Publication list also available in Google Scholar. Asterisks indicate student lead authors.

In revision	J. Schütt* and D. M. Whipp . Controls on continental strain partitioning above an oblique subduction zone, Northern Andes. <i>Geochemistry, Geophysics, Geosystems</i> , in revision.
In review	D. M. Whipp and T. A. Ehlers. Quantifying landslide frequency and sediment residence time in the Nepal Himalaya. <i>Science Advances</i> , revised text submitted. A. Koptev, T. A. Ehlers, M. Nettesheim, and D. M. Whipp . Impact of 3D subduction geometry and upper plate rheology on localized deformation in orogen syntaxes. <i>Tectonics</i> , revised text submitted.
Journals	M. Nettesheim*, T. A. Ehlers, D. M. Whipp , and A. Koptev. The influence of upper-plate advance and erosion on overriding plate deformation in orogen syntaxes. <i>Solid Earth</i> , 9, 1207-1224. doi: 10.5194/se-9-1207-2018, 2018. K. R. Landry*, I. Coutand, D. M. Whipp , D Grujic, and J. K. Hourigan. Late Neogene tectonically driven crustal exhumation of the Sikkim Himalaya: 2016

Insights from inversion of multithermochronologic data. *Tectonics*, 35(3):833–859. doi: 10.1002/2015TC004102, 2016.

D. M. Whipp, C. Beaumont, and J. Braun. Feeding the 'aneurysm': Orogen-parallel mass transport into Nanga Parbat and the western Himalayan syntaxis. *Journal of Geophysical Research: Solid Earth*, 119(6):5077–5096. doi: 10.1002/2013JB010929, 2014.

2014

M. A. Murphy, M. H. Taylor, J. Gosse, C. R. P. Silver, **D. M. Whipp**, and C. Beaumont. Limit of strain partitioning in the Himalaya marked by large earthquakes in western Nepal. *Nature Geoscience*, 7(1):38–42. doi: 10.1038/ngeo2017, 2014.

I. Coutand, **D. M. Whipp**, D. Grujic, M. Bernet, M. G. Fellin, B. Bookhagen, K. R. Landry, S. K. Ghalley, and C. Duncan. Geometry and kinematics of the Main Himalayan Thrust and Neogene crustal exhumation in the Bhutanese Himalaya derived from inversion of multithermochronologic data. *Journal of Geophysical Research: Solid Earth*, 119(2):1446–1481. doi: 10.1002/2013JB010891, 2014.

D. M. Whipp, T. A. Ehlers, J. Braun, and C. D. Spath. Effects of exhumation kinematics and topographic evolution on detrital thermochronometer data. *Journal of Geophysical Research: Earth Surface*, 114(F4). doi: 10.1029/2008JF001195, 2009.

2009

T. F. Schildgen, T. A. Ehlers, **D. M. Whipp**, M. C. van Soest, K. X. Whipple, and K. V. Hodges. Quantifying canyon incision and Andean Plateau surface uplift, southwest Peru: A thermochronometer and numerical modeling approach. *Journal of Geophysical Research: Earth Surface*, 114(F4). doi: 10.1029/2009JF001305, 2009.

D. M. Whipp and T. A. Ehlers. Influence of groundwater flow on thermochronometer-derived exhumation rates in the central Nepalese Himalaya. *Geology*, 35(9):851–854. doi: 10.1130/G23788A.1, 2007.

2007

K. W. Huntington, T. A. Ehlers, K. V. Hodges, and **D. M. Whipp**. Topography, exhumation pathway, age uncertainties, and the interpretation of erosion rates from thermochronometer data. *Tectonics*, 26(4). doi: 10.1029/2007TC002108, 2007.

D. M. Whipp, T. A. Ehlers, A. E. Blythe, K. W. Huntington, K. V. Hodges, and D. W. Burbank. Plio-Quaternary exhumation history of the central Nepalese Himalaya: 2. Thermo-kinematic and thermochronometer age prediction model. *Tectonics*, 26(3). doi: 10.1029/2006TC001991, 2007.

Grants and funding

Funding includes only amounts over 5000€

Pending

Academy Project, Academy of Finland, Finland, 597 236€. Sole PI. Extracting the Record of mountain Erosion processes COntained in River Detritus (E-RECORD)

Research funding

Academy Project, Academy of Finland, Finland, 451 763€. Sole PI. What controls deformation in a 'bent' 3D orogen? The effects of spatially variable rock strength, erosion and mass transport on the tectonics of the Bolivian Andes

2014–2018

Three-Year Research Project, University of Helsinki, Helsinki, Finland, 145 000€. Sole PI. What controls strain partitioning at obliquely convergent ocean-continent margins? 3D dynamics of crustal deformation along the western Andean margin

2014–2017

ACEnet Research Fellowships Program, Atlantic Canada Computational Excellence Network (ACEnet), Canada, \$40 000 [CAD]. Co-PI with C. Beaumont. 3-D plateau formation and evolution from numerical model experiments

2010–2012

Infrastructure	<p>Faculty of Science internal infrastructure funding, University of Helsinki, Helsinki, Finland, 90 000€. Sole PI. Geosciences high-performance computing cluster (geo-hpcc)</p> <p>Department of Geosciences and Geography internal infrastructure funding, University of Helsinki, Helsinki, Finland, 120 000€. Sole PI. Computational infrastructure for Earth Sciences</p>	2016
Computing allocations	<p>PRACE Preparatory Access, Partnership for Advanced Computing in Europe (PRACE), Brussels, Belgium, 200,000 core-hours. Sole PI. Nested DOUAR: Coupling high and low resolution finite element models to solve 3D geologic problems</p> <p>Compute Canada National Resource Allocation, Compute Canada, Toronto, ON, Canada, 109 core-years. Co-PI with J. Allen and C. Beaumont. Modelling the three-dimensional dynamics of geologic systems: From sub-sea salt to the Himalayan peaks</p>	2014 2012
Awards and honors	<p>Exceptional Reviewer for journal Lithosphere, Geological Society of America.</p> <p>Outstanding Graduate Student Instructor Award, Rackham Graduate School, University of Michigan, Ann Arbor, MI, USA.</p> <p>Outstanding Graduate Student Instructor Award, Department of Geological Sciences, University of Michigan, Ann Arbor, MI, USA.</p> <p>Outstanding Student Paper Award, Tectonophysics Section, American Geophysical Union Fall Meeting.</p> <p>Camp Davis Field Geologist Award, Department of Geological Sciences, University of Michigan, Ann Arbor, MI, USA.</p>	2014 2007 2006 2003
Invited talks	<p>16th International Conference on Thermochronology (Thermo 2018), Session 2: Diffusion / annealing kinetics and thermal modelling, Quedlinburg, Germany.</p> <p>University of Lausanne, Department seminar, Institute of Earth Sciences, Lausanne, Switzerland.</p> <p>European Geosciences Union General Assembly, Session TS7.8: Mountain building processes, from top to bottom: the Zagros-Himalaya-Tibet orogenic system, Vienna, Austria.</p> <p>American Geophysical Union Fall Meeting, Session T42B: Sedimentary Basin Records of Convergent Orogenic Systems, San Francisco, CA, USA.</p> <p>University of Potsdam, Colloquium talk, Institute of Earth and Environmental Science, Potsdam, Germany.</p> <p>American Geophysical Union Fall Meeting, Session EP23G: From High Peaks to Level Plains: Using Thermochronometry to Study the Evolving Geosphere, San Francisco, CA, USA.</p> <p>University of Tübingen, Earth System Dynamics Research Group seminar, Department of Geosciences, Tübingen, Germany.</p> <p>Joseph Fourier University, Grand séminaire, Institut des Sciences de la Terre, Grenoble, France.</p> <p>Geological Society of America Annual Meeting, Session T46: Linking Shallow to Deep Crustal Processes in Arc and Collisional Orogens, Portland, OR, USA.</p> <p>Joseph Fourier University, Seminar talk, Laboratoire de géodynamique des chaînes alpines, Grenoble, France.</p> <p>Dalhousie University, Department seminar, Department of Earth Sciences, Halifax, NS, Canada.</p>	2018 2017 2016 2014 2013 2011 2009 2007

Conference activity

Organization	<p>Session chair, NetherMod 2017 - XV International Workshop on Numerical Modelling of Mantle and Lithosphere Dynamics, Putten, Netherlands. "Global modelling of early and recent Earth"</p> <p>Session co-convener, Nordic Geological Winter Meeting, Helsinki, Finland. "Dynamics and evolution of the lithosphere from Archean to present" "Interactions between climate, erosion and tectonics"</p> <p>Steering committee, Lithosphere 2014 symposium, Turku, Finland.</p> <p>Session co-chair, 28th Himalayan Karakorum Tibet Workshop and 6th International Symposium on Tibetan Plateau Joint Conference, Tübingen, Germany. "Crustal Doming, Exhumation and Lateral Extrusion"</p> <p>Session co-convener, Geological Society of America Annual Meeting, Denver, Colorado, USA. "Orogeny: From rigid plates to diffuse lithospheric deformation", one of several sessions celebrating the 30th anniversary of the Structural Geology and Tectonics Division of the GSA</p>	2017 2016 2014 2013 2010
Presentations	<p>Past 3 years. Asterisks indicate student lead authors.</p> <p>D. M. Whipp, I. Coutand, B. Bookhagen, D. Grujic, and T. A. Ehlers. Whence the age? Use of numerical models to extract the record of tectonic and erosional processes in detrital thermochronometer data. Proceedings of the 16th International Conference on Thermochronology, Quedlinburg, Germany, 17-21 September 2018.</p> <p>A. Koptev, T. Ehlers, M. Nettesheim and D. Whipp. Impact of 3D subduction geometry and crustal rheology on deformation at orogen syntaxes: Insights from thermo-mechanical modelling. <i>Geophysical Research Abstracts</i>, 20, EGU2018-8463-1, 2018.</p> <p>M. Nettesheim*, T. A. Ehlers and D. M. Whipp. Effects of subducting plate geometry and erosion on overriding plate deformation at plate corners (syntaxes). <i>Geophysical Research Abstracts</i>, 20, EGU2018-13467, 2018.</p> <p>D. Whipp, H. Tenkanen, and V. Heikinheimo. Geo-Python: An open online introduction to programming in Python for geoscientists. <i>Geophysical Research Abstracts</i>, 20, EGU2018-15204, 2018.</p> <p>L. Kaislaniemi and D. M. Whipp. What controls deformation in a bent three-dimensional orogen? An example from the Bolivian Andes. Abstract T23D-0649 presented at 2017 Fall Meeting, AGU, San Francisco, Calif., USA, 11–15 Dec, 2017.</p> <p>J. Schütt* and D. M. Whipp. 3D dynamics of crustal deformation along the western Andean margin. NetherMod 2017 - XV International Workshop on Numerical Modelling of Mantle and Lithosphere Dynamics, Putten, Netherlands, 27–31 August, 2017.</p> <p>D. M. Whipp and C. Beaumont. Strain partitioning in arcuate orogens: Analytical predictions and numerical experiments based on the Himalayan arc. NetherMod 2017 - XV International Workshop on Numerical Modelling of Mantle and Lithosphere Dynamics, Putten, Netherlands, 27–31 August, 2017.</p> <p>L. Kaislaniemi and D. M. Whipp. What controls deformation in a bent three-dimensional orogen? An example from the Bolivian Andes. DRT 2017 - 21st International Conference on Deformation Mechanisms, Rheology and Tectonics, Inverness, Scotland, 30 April–4 May, 2017.</p> <p>M. Nettesheim*, T. Ehlers, and D. M. Whipp. Subduction and Slab Advance at Orogen Syntaxes: Predicting Exhumation Rates and Thermochronometric Ages with Numerical Modeling. <i>Geophysical Research Abstracts</i>, 19, EGU2017-13042, 2017.</p> <p>J. Schütt* and D. M. Whipp. 3D dynamics of crustal deformation driven by oblique subduction: Northern and Central Andes. <i>Geophysical Research Abstracts</i>, 19, EGU2017- 11940, 2017.</p>	2018 2017

D. M. Whipp and C. Beaumont. Orogen-parallel mass transport along the arcuate Himalaya into Nanga Parbat and the western Himalayan syntaxis. *Geophysical Research Abstracts*, 19, EGU2017-15505, 2017 (**invited**).

2016

D. M. Whipp, I. Coutand, B. Bookhagen, and D. Grujic. Interpreting records of tectonic and erosional processes using detrital thermochronology: An example from the Bhutan Himalaya. Abstract T42B-05 presented at 2016 Fall Meeting, AGU, San Francisco, Calif., USA, 12–16 Dec, 2016 (**invited**).

I. Kukkonen, E. Koivisto, and **D. M. Whipp**. Helsinki University Kumpula Campus Drill Hole Project. *Lithosphere 2016 - Ninth Symposium on the Structure, Composition and Evolution of the Lithosphere in Finland. Programme and Extended Abstracts*, Espoo, Finland, November 9–11, 2016, Institute of Seismology, University of Helsinki, 2016.

L. Kaislaniemi and **D. M. Whipp**. What controls deformation in a bent three-dimensional orogen? GeoMod 2016 conference, Montpellier, France, 17–20 October, 2016.

J. Schütt* and **D. M. Whipp**. Controls on continental strain partitioning above an oblique subduction zone, Northern Andes. GeoMod 2016 conference, Montpellier, France, 17–20 October, 2016.

N. Blomqvist* and **D. M. Whipp**. Comparing global-scale topographic and climatic metrics to long-term erosion rates using ArcSwath, an efficient new ArcGIS tool for swath profile analysis. *Geophysical Research Abstracts*, 18, EGU2016-6447, 2016.

M. Nettesheim*, T. Ehlers, and **D. M. Whipp**. Influence of Subducting Plate Geometry on Upper Plate Deformation at Orogen Syntaxes: A Thermomechanical Modeling Approach. *Geophysical Research Abstracts*, 18, EGU2016-4113, 2016.

J. Schütt* and **D. M. Whipp**. Controls on continental strain partitioning above an oblique subduction zone, Northern Andes. *Geophysical Research Abstracts*, 18, EGU2016-11430, 2016.

D. M. Whipp and C. Beaumont. Orogen-parallel mass transport along the arcuate Himalayan front into Nanga Parbat and the western Himalayan syntaxis. *Geophysical Research Abstracts*, 18, EGU2016-9744, 2016.

E. Koivisto, I. Kukkonen, and **D. M. Whipp**. New Master's program in Solid Earth Geophysics at the University of Helsinki: Lessons from one year of operation. 32nd Nordic Geological Winter Meeting, Helsinki, Finland 13–15 January, 2016.

I. Kukkonen, E. Koivisto, and **D. M. Whipp**. Helsinki University Kumpula Campus Drill Hole Project. 32nd Nordic Geological Winter Meeting, Helsinki, Finland 13–15 January, 2016.

J. Schütt* and **D. M. Whipp**. Controls on continental strain partitioning above an oblique subduction zone, Northern Andes. 32nd Nordic Geological Winter Meeting, Helsinki, Finland 13–15 January, 2016.

D. M. Whipp. Orogen-parallel mass transport along the arcuate Himalayan front into Nanga Parbat and the western Himalayan syntaxis. 32nd Nordic Geological Winter Meeting, Helsinki, Finland 13–15 January, 2016.

Teaching

Links: 🏠 = course homepage, 🌐 = course GitHub page, 📺 = course YouTube channel

Main courses

Department of Geosciences and Geography, University of Helsinki, Helsinki, Finland.

2013-present

- Conducting scientific research 🏠
- Current Topics in Global Geophysics Research
- Geo-Python (with Henrikki Tenkanen) 🏠 🌐 📺
- Geodynamics 📺
- Introduction to Lithospheric Geodynamic Modelling (with Lars Kaislaniemi) 🏠 🌐

- Introduction to Quantitative Geology 🏠🔄📺
- Lithospheric Structure and Dynamics (with Ilmo Kukkonen)

Short courses	Low-temperature thermochronology , GeoDoc short course, University of Helsinki, Helsinki, Finland. 🏠📺 Co-taught with Ilmo Kukkonen and invited lecturers Cécile Gautheron, Christoph Glotzbach, and Clare Warren.	2017
	Introduction to lithospheric geodynamic modelling , Nordic Geological Winter Meeting, Helsinki, Finland. 🏠 Co-taught with Lars Kaislaniemi	2016
	Software Carpentry Bootcamp , University of Helsinki, Helsinki, Finland. 🏠 Co-taught with Joonas Lehtomäki	2015
	Introduction to Lithospheric Geodynamics , Geological Survey of Finland, Espoo, Finland. Co-taught with Lars Kaislaniemi	

Guest lectures	Geological Processes/Dynamic Earth (Introductory geoscience course) , Department of Geosciences and Geography, University of Helsinki, Helsinki, Finland.	2015–present
	Geochronology and Thermochronology , Department of Earth Sciences, Dalhousie University, Halifax, NS, Canada.	2010

Assistant teaching	Department of Geological Sciences, University of Michigan, Ann Arbor, MI, USA - Earth Surface Processes and Soils laboratory - Geology of the Rockies, University of Michigan Camp Davis, WY, USA - Introduction to Geology laboratory/discussion - Introduction to Oceanography laboratory	2003–2007
--------------------	---	-----------

Supervision

Postdoctoral researchers	Lars Kaislaniemi , Department of Geosciences and Geography, University of Helsinki, Helsinki, Finland.	2015–2018
Doctoral students	Matthias Nettesheim , Department of Geosciences, University of Tübingen, Tübingen, Germany. Co-supervised with Todd Ehlers	2017–present
	Jorina Schütt , Department of Geosciences and Geography, University of Helsinki, Helsinki, Finland.	2014–2018
Masters students	Aleksi Rantanen , Department of Geosciences and Geography, University of Helsinki, Helsinki, Finland.	2018–present
	Nelli Metiäinen , Department of Geosciences and Geography, University of Helsinki, Helsinki, Finland.	2017–present
	Lotta Ylä-Mella , Department of Geosciences and Geography, University of Helsinki, Helsinki, Finland. Co-supervised with Ilmo Kukkonen	
	Niclas Blomqvist , Department of Geosciences and Geography, University of Helsinki, Helsinki, Finland. Now: Geologist, Pöyry Finland Oy	2014–2016
Bachelors theses	Lotta Ylä-Mella , Department of Physics, University of Helsinki, Helsinki, Finland.	2016–2018

	Jennifer Hällsten , Department of Geosciences and Geography, University of Helsinki, Helsinki, Finland. Co-supervised with Jorina Schütt	2016–2017
Visiting researchers	Mehrnoosh Ghadimi , Department of Physical Geography, University of Tehran, Tehran, Iran.	2017–present
Supervisory committee	Rémi Vachon , Doctoral student, Dept. of Earth Sciences, Uppsala University, Uppsala, Sweden.	2018
	Janice Allen , Doctoral student, Dept. of Earth Sciences, Dalhousie University, Halifax, NS, Canada. Now: Imperial Oil, Canada	2011–2016
	Gabe Creason , Masters student, *Department of Earth Sciences, Dalhousie University, Halifax, NS, Canada. Now: Ph.D. student, Oregon State University	2012–2015
	Kyle Landry , Masters student, Department of Earth Sciences, Dalhousie University, Halifax, NS, Canada.	2011–2014
Undergraduate research	Leevi Tuikka , Department of Physics, University of Helsinki, Helsinki, Finland.	2017–present
	Miro Pütz , Institute of Geophysics, University of Hamburg, Hamburg, Germany.	2016
	Niclas Blomqvist , Department of Geosciences and Geography, University of Helsinki, Helsinki, Finland.	2014
	Chris Spath , Department of Electrical Engineering and Computer Science, University of Michigan, Ann Arbor, MI, USA. Co-supervised with Todd Ehlers	2006–2008
	Nick Olds , Department of Geological Sciences, University of Michigan, Ann Arbor, MI, USA. Co-supervised with Todd Ehlers	2004
Professional service	Judge , Outstanding Student Poster and PICO Award, European Geosciences Union General Assembly, Vienna, Austria.	2016–2018
	Judge , Outstanding Student Paper Awards, American Geophysical Union Fall Meeting, San Francisco, CA, USA. Did not attend/judge in 2015	2013–2016
	Scientific expert in review panel , Fennovoima nuclear power company, Helsinki, Finland.	2013–2015
	Referee.	2007–present
	Journals: Basin Research, Chemical Geology, Earth and Planetary Science Letters, Earth Surface Processes and Landforms, G-cubed (Geochemistry, Geophysics, Geosystems), Geological Society of America Bulletin, Geology, Geophysica, Journal of Geology, Journal of Geophysical Research - Earth Surface, Journal of Geophysical Research - Solid Earth, Lithosphere, Nature Communications, Nature Geoscience, Science, Tectonics, Tectonophysics	
	Research project proposals: German Science Foundation, Natural Sciences and Engineering Research Council of Canada, The Royal Society UK (International Collaboration Awards), US National Science Foundation (Earth Sciences Postdoctoral Fellowship program, Geomorphology and Land Use Dynamics program, Tectonics program)	
University service	Board member , Bachelor's Programme in Science (in English), University of Helsinki, Helsinki, Finland.	2018–present

Deputy member , Department of Geosciences and Geography management group, University of Helsinki, Helsinki, Finland.	
Board member , Masters program in Geology and Geophysics, University of Helsinki, Helsinki, Finland.	2017-present
Co-coordinator geoscience seminar , Department of Geosciences and Geography, University of Helsinki, Helsinki, Finland.	2013-present
Preparatory group member , BSc of Science in English degree, University of Helsinki, Helsinki, Finland.	2017-2018
Co-coordinator geoscience seminar , Department of Geosciences and Geography, University of Helsinki, Helsinki, Finland.	2013-present
Department council member , Department of Geosciences and Geography, University of Helsinki, Helsinki, Finland.	2015-2017
Co-coordinator of Solid Earth Geophysics Masters program , Department of Geosciences and Geography, University of Helsinki, Helsinki, Finland.	2014-2016
Graduate Student Mentor , Department of Geological Sciences, University of Michigan, Ann Arbor, Michigan, USA.	2007-2008

Community outreach

Guest lecture , Institute of Seismology, University of Helsinki, Helsinki, Finland. Introduction to my general areas of research on mountain evolution for visiting high school students from Tampere, Finland	2015
Presenter , Science Bazaar, University of Helsinki, Helsinki, Finland. Presentation on mountain systems to the audience of undergraduate students present for their orientation at the Kumpula Science Campus of the University of Helsinki	2013
Guest lecture , Melbourne High School, Melbourne, FL, USA. Introduction to the geology and culture of Nepal related to reading of Jon Krakauer's <i>Into Thin Air</i> for eleventh grade English students	2007

Languages

English: Native
 Finnish: CEFR level A1.3
 French: Basic knowledge

Memberships

European Geosciences Union	2014-present
Geological Society of America	2005-present
American Geophysical Union	2003-present

Personal

Birth date: 9 March 1980
 Citizenship: USA
 Residence: Finland (Permanent resident)
 Family: Married, two children

Last updated: October 2018