Iason Papanagiotou CV | CV

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Systems Engineer

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Education

2012-2018 **BSc in Computer Science**, *Hellenic Open University*

2004-2008 **BSc in Finance and Auditing**, *Technological Educational Institute Of Kalamata*

Experience

2017-present **Associate professor**, *Department of Geosciences and Geography, University of Helsinki*, Helsinki, Finland.

2013-2023 **Adjunct of the Faculty of Graduate Studies**, *Department of Earth Sciences, Dalhousie University*, Halifax, NS, Canada.

2013-2016 **Assistant professor**, *Department of Geosciences and Geography, University of Helsinki*, Helsinki, Finland.

2009-2012 **Postdoctoral fellow**, *Department of Oceanography, Dalhousie University*, Halifax, NS, Canada.

2008-2009 **Postdoctoral fellow**, *Géosciences Rennes, University of Rennes 1*, Rennes, France.

2007 **Geoscientist (intern)**, *ExxonMobil Exploration Company*, Houston, TX, USA.

2003-2008 **Research assistant**, *Department of Geological Sciences, University of Michigan*, Ann Arbor, MI, USA.

2000–2002 **Tech consultant and Sites rover**, *Campus Computing Sites, University of Michigan*, Ann Arbor, MI, USA.

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. *Geochemistry, Geophysics, Geosystems*, in revision.

In press

A. Koptev, T. A. Ehlers, M. Nettesheim, and **D. M. Whipp**. Response of a rheologically stratified lithosphere to subduction of an indenter-shaped plate: Insights into localized exhumation at orogen syntaxes. *Tectonics*, in press.

Journals

2019 **D. M. Whipp** and T. A. Ehlers. Quantifying landslide frequency and sediment residence time in the Nepal Himalaya. *Science Advances*, *5*(4). doi: 10.1126/sciadv.aav3482, 2019.

2018 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. *Solid Earth*, 9, 1207-1224. doi: 10.5194/se-9-1207-2018, 2018.

2016 K. R. Landry*, I. Coutand, **D. M. Whipp**, D Grujic, and J. K. Hourigan. Late Neogene tectonically driven crustal exhumation of the Sikkim Himalaya: Insights from inversion of multithermochronologic data. *Tectonics*, *35*(3):833–859. doi: 10.1002/2015TC004102, 2016.

2014 **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.

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.

2009 **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.

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.

2007 **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.

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

2014–2018 **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

2014–2017 **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

2010–2012 **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

Infrastructure

2016 **Faculty of Science internal infrastructure funding**, *University of Helsinki*, Helsinki, Finland, 90 000€. Sole PI.
Geosciences high-performance computing cluster (geo-hpcc)

2014 **Department of Geosciences and Geography internal infrastructure funding**, *University of Helsinki*, Helsinki, Finland, 120 000€. Sole PI.
Computational infrastructure for Earth Sciences

Computing allocations

2014 **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

2012 **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

Awards and honors

2014 **Exceptional Reviewer for journal** *Lithosphere*, *Geological Society of America*.

2007 **Outstanding Graduate Student Instructor Award**, *Rackham Graduate School, University of Michigan*, Ann Arbor, MI, USA.

Outstanding Graduate Student Instructor Award, *Department of Geological Sciences, University of Michigan*, Ann Arbor, MI, USA.

2006 **Outstanding Student Paper Award**, *Tectonophysics Section*, American Geophysical Union Fall Meeting.

2003 **Camp Davis Field Geologist Award**, *Department of Geological Sciences, University of Michigan*, Ann Arbor, MI, USA.

Invited talks

2019 **University of Turku**, *Department seminar, Department of Geography and Geology*, Turku, Finland.

2018 **16th International Conference on Thermochronology (Thermo 2018)**, *Session 2: Diffusion / annealing kinetics and thermal modelling*, Quedlinburg, Germany.

2017 **University of Lausanne**, *Department seminar, Institute of Earth Sciences*, Lausanne, Switzerland.

European Geosciences Union General Assembly, *Session TS7.8: Mountain building processes, from top to bottom: the Zagros-Himalaya-Tibet orogenic system*, Vienna, Austria.

2016 **American Geophysical Union Fall Meeting**, *Session T42B: Sedimentary Basin Records of Convergent Orogenic Systems*, San Francisco, CA, USA.

University of Potsdam, *Colloquium talk, Institute of Earth and Environmental Science*, Potsdam, Germany.

2014 **American Geophysical Union Fall Meeting**, *Session EP23G: From High Peaks to Level Plains: Using Thermochronometry to Study the Evolving Geosphere*, San Francisco, CA, USA.

2013 **University of Tübingen**, *Earth System Dynamics Research Group seminar, Department of Geosciences*, Tübingen, Germany.

2011 **Joseph Fourier University**, *Grand séminaire, Institut des Sciences de la Terre*, Grenoble, France.

2009 **Geological Society of America Annual Meeting**, *Session T46: Linking Shallow to Deep Crustal Processes in Arc and Collisional Orogens*, Portland, OR, USA.

Joseph Fourier University, *Seminar talk, Laboratoire de géodynamique des chaînes alpines*, Grenoble, France.

2007 **Dalhousie University**, *Department seminar, Department of Earth Sciences*, Halifax, NS, Canada.

Conference activity

Organization

2017 **Session chair**, *NetherMod 2017 - XV International Workshop on Numerical Modelling of Mantle and Lithosphere Dynamics*, Putten, Netherlands.
"Global modelling of early and recent Earth"

2016 **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"

2014 **Steering committee**, *Lithosphere 2014 symposium*, Turku, Finland.

2013 **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"

2010 **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

Presentations

Past 3 years. Asterisks indicate student lead authors.

2019 **D. M. Whipp**, P. Uotila, I. Kukkonen, E. Koivisto, T. Luhta. New geophysics study programs at the University of Helsinki. *XXIX Geophysics Days. Programme and Extended Abstracts, Rovaniemi, Finland, March 21–22, 2019*, Geophysical Society of Finland, 2019.

2018 **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 (**invited**).

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. *Geophysical Research Abstracts*, 20, EGU2018-8463-1, 2018.

M. Nettesheim*, T. A. Ehlers and **D. M. Whipp**. Effects of subducting plate geometry and erosion on overriding plate deformation at plate corners (syntaxes). *Geophysical Research Abstracts*, 20, EGU2018-13467, 2018.

D. Whipp, H. Tenkanen, and V. Heikinheimo. Geo-Python: An open online introduction to programming in Python for geoscientists. *Geophysical Research Abstracts*, 20, EGU2018-15204, 2018.

2017 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.

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.

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.

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.

M. Nettesheim*, T. Ehlers, and **D. M. Whipp**. Subduction and Slab Advance at Orogen Syntaxes: Predicting Exhumation Rates and Thermochronometric Ages with Numerical Modeling. *Geophysical Research Abstracts*, 19, EGU2017-13042, 2017.

J. Schütt* and **D. M. Whipp**. 3D dynamics of crustal deformation driven by oblique subduction: Northern and Central Andes. *Geophysical Research Abstracts*, 19, EGU2017- 11940, 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**).

Teaching

Links: = course homepage, = course GitHub page, = course YouTube channel

Main courses

2013-present *Department of Geosciences and Geography, University of Helsinki*, Helsinki, Finland.

- - 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)

2018 *Department of Geosciences and Geography, University of Helsinki*, Helsinki, Finland.

- - Conducting scientific research

Short courses

2017 **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.

2016 **Introduction to lithospheric geodynamic modelling**, *Nordic Geological Winter Meeting*, Helsinki, Finland.
Co-taught with Lars Kaislaniemi

2015 **Software Carpentry Bootcamp**, *University of Helsinki*, Helsinki, Finland.
Co-taught with Joona Lehtomäki

Introduction to Lithospheric Geodynamics, *Geological Survey of Finland*, Espoo, Finland.
Co-taught with Lars Kaislaniemi

Guest lectures

2019 **Geo-Python**, *Department of Geography and Geology, University of Turku and Department of Geology and Mineralogy, Åbo Akademi University*, Turku, Finland.

2010, 2019 **Geochronology and Thermochronology**, *Department of Earth Sciences, Dalhousie University*, Halifax, NS, Canada.

2015-2018 **Geological Processes/Dynamic Earth (Introductory geoscience course)**, *Department of Geosciences and Geography, University of Helsinki*, Helsinki, Finland.

Assistant teaching

2003-2007 *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

Supervision

Postdoctoral researchers

2015-2018 **Lars Kaislaniemi**, *Department of Geosciences and Geography, University of Helsinki*, Helsinki, Finland.

Doctoral students

2017-present **Matthias Nettesheim**, *Department of Geosciences, University of Tübingen*, Tübingen, Germany.
Co-supervised with Todd Ehlers

2014-2018 **Jorina Schütt**, *Department of Geosciences and Geography, University of Helsinki*, Helsinki, Finland.

Masters students

2019-present **Yijun Wang**, *Master's Program in Geology and Geophysics, University of Helsinki*, Helsinki, Finland.

2018-present **Aleksi Rantanen**, *Master's Program in Geology and Geophysics, University of Helsinki*, Helsinki, Finland.

2017-present **Lotta Ylä-Mella**, *Master's Program in Geology and Geophysics, University of Helsinki*, Helsinki, Finland.
Co-supervised with Ilmo Kukkonen

2017-2019 **Nelli Metiäinen**, *Master's Program in Geography, University of Helsinki*, Helsinki, Finland.

2014-2016 **Niclas Blomqvist**, *Department of Geosciences and Geography, University of Helsinki*, Helsinki, Finland.
Now: Geologist, Pöyry Finland Oy

Bachelors theses

2016-2018 **Lotta Ylä-Mella**, *Department of Physics, University of Helsinki*, Helsinki, Finland.

2016-2017 **Jennifer Hällsten**, *Department of Geosciences and Geography, University of Helsinki*, Helsinki, Finland.
Co-supervised with Jorina Schütt

Visiting researchers

2017-present **Mehrnoosh Ghadimi**, *Department of Physical Geography, University of Tehran*, Tehran, Iran.

Supervisory committee

2018 **Rémi Vachon**, *Doctoral student, Dept. of Earth Sciences, Uppsala University*, Uppsala, Sweden.

2011-2016 **Janice Allen**, *Doctoral student, Dept. of Earth Sciences, Dalhousie University*, Halifax, NS, Canada.
Now: Imperial Oil, Canada

2012-2015 **Gabe Creason**, *Masters student, *Department of Earth Sciences, Dalhousie University*, Halifax, NS, Canada.
Now: Ph.D. student, Oregon State University

2011-2014 **Kyle Landry**, *Masters student, Department of Earth Sciences, Dalhousie University*, Halifax, NS, Canada.

Undergraduate research

2019-present **Christoph Brendel**, *Institute for Geology, University of Hamburg*, Hamburg, Germany.

Jugraj Singh, *Rajiv Gandhi Institute of Petroleum Technology*, Jais, Uttar Pradesh, India.

2017-present **Leevi Tuikka**, *Department of Physics, University of Helsinki*, Helsinki, Finland.

2018 **Marta Girbau**, *Department of Geology, Universitat Autònoma de Barcelona*, Barcelona, Spain.

2016 **Miro Pütz**, *Institute of Geophysics, University of Hamburg*, Hamburg, Germany.

2014 **Niclas Blomqvist**, *Department of Geosciences and Geography, University of Helsinki*, Helsinki, Finland.

2006-2008 **Chris Spath**, *Department of Electrical Engineering and Computer Science, University of Michigan*, Ann Arbor, MI, USA.
Co-supervised with Todd Ehlers

2004 **Nick Olds**, *Department of Geological Sciences, University of Michigan*, Ann Arbor, MI, USA.
Co-supervised with Todd Ehlers

Professional service

2016-2018 **Judge**, *Outstanding Student Poster and PICO Award, European Geosciences Union General Assembly*, Vienna, Austria.

2013-2016 **Judge**, *Outstanding Student Paper Awards, American Geophysical Union Fall Meeting*, San Francisco, CA, USA.
Did not attend/judge in 2015

2013-2015 **Scientific expert in review panel**, *Fennovoima nuclear power company*, Helsinki, Finland.

2007-present **Referee**.

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

2018-present **Board member**, *Bachelor's Programme in Science (in English)*, University of Helsinki, Helsinki, Finland.

Deputy member, *Department of Geosciences and Geography mangagement group, University of Helsinki*, Helsinki, Finland.

Leader, *Department of Geosciences and Geography well-being group, University of Helsinki*, Helsinki, Finland.

Member, *Department of Geosciences and Geography communications group, University of Helsinki*, Helsinki, Finland.

2017-present **Board member**, *Masters program in Geology and Geophysics*, University of Helsinki, Helsinki, Finland.

2013-present **Co-coordinator geoscience seminar**, *Department of Geosciences and Geography, University of Helsinki*, Helsinki, Finland.

2017-2018 **Preparatory group member**, *BSc of Science in English degree, University of Helsinki*, Helsinki, Finland.

2015-2017 **Department council member**, *Department of Geosciences and Geography, University of Helsinki*, Helsinki, Finland.

2014–2016 **Co-coordinator of Solid Earth Geophysics Masters program**, *Department of Geosciences and Geography, University of Helsinki*, Helsinki, Finland.

2007–2008 **Graduate Student Mentor**, *Department of Geological Sciences, University of Michigan*, Ann Arbor, Michigan, USA.

Community outreach

2015 **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

2013 **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

2007 **Guest lecture**, *Melbourne High School*, Melbourne, FL, USA.
Introduction to the geology and culture of Nepal related to reading of Jon Krakauer's *Into Thin Air* for eleventh grade English students

Languages

English: Native

Finnish: CEFR level A1.3

French: Basic knowledge

Memberships

2014–present European Geosciences Union

2005–present Geological Society of America

2003–present American Geophysical Union

Personal

Birth date: 9 March 1980

Citizenship: USA

Residence: Finland (Permanent resident)

Family: Married, two children

Last updated: May 2019