

LISA CLARE MCNEILL

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EDUCATION

B.A. (Hons.) Natural Sciences, University of Cambridge, UK, 1992
Ph.D. Structural Geology, "Structure and Seismic Hazards of the Offshore Cascadia Forearc and Evolution of the Neogene Forearc Basin", Dr. Robert S. Yeats (advisor), Oregon State University, USA, 1998

HISTORY OF EMPLOYMENT

8/14-present Professor of Tectonics, School of Ocean and Earth Science, University of Southampton, UK
1/03-7/14 Lecturer-Senior Lecturer-Reader, Ocean and Earth Science, University of Southampton, UK
10/00-12/02 Royal Society Dorothy Hodgkin Research Fellow, School of Ocean and Earth Science, University of Southampton, UK
1/99-9/00 Royal Society Dorothy Hodgkin Research Fellow, Department of Earth Sciences, University of Leeds, UK

RESEARCH EXPERIENCE

I use marine geological and geophysical data, scientific ocean drilling and onshore geomorphology and paleoseismology to analyse active tectonic settings, including active fault slip processes, tectonic development and geohazards. I have worked extensively on subduction zones, on forearc structure, morphology, fault properties, and earthquake dynamics, working on the Sumatra, Nankai, Cascadia, Makran, Lesser Antilles and Hikurangi margins. I have also focused on the tectonic processes of continental rift settings, primarily on active rift and basin development, strain distribution, fault network development and the interaction of tectonics, sedimentation, sea level and climate (e.g., Corinth rift, Greece). I am generally interested in how active tectonic processes impact sedimentary and geomorphic processes, and how these affect environment. I have participated in 17 research cruises, five as (Co) Chief Scientist, including 5 ODP/IODP expeditions. I have had significant involvement with the scientific ocean drilling program, serving on and chairing panels, contributing to new program discussions, and participating as a scientist (as proposal proponent and expedition scientist). I was Co-Chief Scientist for IODP Expeditions 319 (Nankai subduction zone), 362 (Sumatra subduction zone) and 381 (Corinth rift), leading the proposals for Expeditions 362 and 381.

HONOURS

- Geological Society of London Coke Medal, 2020
- Co-Chair of the International Ocean Discovery Program (IODP) Science Evaluation Panel, 2019-2022
- Royal Society Dorothy Hodgkin Research Fellowship, UK, 1998-2002

PROFESSIONAL SOCIETY MEMBERSHIPS

Member of American Geophysical Union (1994-present)
Member of Geological Society of America (1994-2004, 2008-2010)

MAJOR LEADERSHIP ROLES

- Research Group Head (Geology and Geophysics), University of Southampton, 2020-present
- Co-Chair of International Ocean Discovery Program (IODP) Science Evaluation Panel, 2019-2022

- Member of NSF IODP Working Group on New Science Framework Proposal Requirements and Assessment
- Co-Chief Scientist of IODP expedition 381, Corinth Rift, 2017-present
- Co-Chief Scientist of IODP expedition 362, Sumatra subduction zone, 2016-2021
- Deputy Head of School Education, School of Ocean and Earth Science, University of Southampton, 2013-2016
- Co-Chief Scientist of IODP Expedition 319, Nankai subduction zone, Japan, 2009-2014
- Co-lead of NERC-UK funded major project "Subduction zone segmentation and controls on earthquake rupture: The 2004 and 2005 Sumatra earthquakes", 2006-2015

KEY PUBLICATIONS

McNeill, L.C., Shillington, D.J., Carter, G.D.O., and 33 others, 2019, High-resolution record reveals climate-driven environmental and sedimentary changes in an active rift, *Scientific Reports*, doi.org/10.1038/s41598-019-40022-w.

McNeill, L.C., Dugan, B., Backman, J., and 32 others, 2017. Understanding Himalayan erosion and the significance of the Nicobar Fan. *Earth and Planetary Science Letters*, 475, 134-142. doi.org/10.1016/j.epsl.2017.07.019

Hüpers, A., Torres, M.E., Owari, S., **McNeill**, L.C., Dugan, B., et al., 2017, Release of mineral-bound water prior to subduction tied to shallow seismogenic slip off Sumatra. *Science*, 356, 841-844.

Nixon, C., **McNeill**, L., et al., 2016, History of high resolution basin development within the offshore Corinth rift, central Greece. *Tectonics*, 35, 1225-1248, doi:10.1002/2015TC004026.

McNeill, L.C., and Henstock, T.J., 2014. Forearc structure and morphology along the Sunda subduction zone: *Tectonics*, 33, 112-134, DOI: 10.1002/2012TC003264.

Smith, G.L., **McNeill**, L.C., Wang, K., He, J., and Henstock, T.J., 2013, Thermal structure and megathrust seismogenic potential of the Makran subduction zone: *Geophys. Res. Lett.*, 40, 1-6, doi:10.1002/grl.50374.

Sumner, E., Siti, M., **McNeill**, L., Talling, P., Wynn, R., Henstock, T., Djajadihardja, Y., and Permana, H., 2013, Can turbidites be used to reconstruct a paleoearthquake record for the Sumatran margin?: *Geology*, 41, 763-766, doi: 10.1130/G34298.1.

Gulick, S., Austin, J., **McNeill**, L., Bangs, N., Martin, K., Henstock, T., Bull, J., Dean, S., Djajadihardja, Y., and Permana, H., 2011, Thick indurated sediments extend updip rupture propagation during 2004 Sumatra earthquake. *Nature Geoscience*, 4, 453-456, DOI: 10.1038/NGEO1176.

Chang, C., **McNeill**, L., Moore, J.C., Lin, W., Conin, M., and Yamada, Y., 2010, In situ stress state in the Nankai accretionary wedge estimated from borehole wall failures. *Geochem., Geophys., Geosys.*, 11, Q0AD04, doi:10.1029/2010GC003261.

Dean, S.M., **McNeill**, L.C., Henstock, T.J., Bull, J.M., Gulick, S.P.S., Austin, J.A., Bangs, N.L.B., Djajadihardja, Y.S., and Permana, H., 2010, Contrasting décollement and prism properties over the Sumatra 2004/2005 earthquake rupture boundary: *Science*, 329, 207-210, doi:10.1126/science.1189373.

Bell, R., **McNeill**, L.C., Bull, J.M., Henstock, T.J., Leeder, M., and Collier, R., 2009, Evolution of the Gulf of Corinth rift, Central Greece: *Basin Research*, 21, 824-855.

Henstock, T., **McNeill**, L., and Tappin, D. 2006. Seafloor morphology of the Sumatran subduction zone: Surface rupture during megathrust earthquakes? *Geology*, 34, 485-488.