



Curriculum Vitae Professor Dr Leigh Royden

Name: Leigh Royden

Date of birth: 15 October 1955

Research Priorities: Regional and global tectonics, subduction processes, geodynamics

Leigh Royden is a US geologist and geophysicist. She researches the large-scale deformation of continents, the interplay between surface processes and tectonics as well as subduction dynamics. Her research has led to a new understanding of the formation and long-term stability of continental mountain ranges.

Academic and Professional Career

- since 1993 Full Professor of Geology and Geophysics, Massachusetts Institute of Technology (MIT), Cambridge, USA
- 1988 - 1993 Associate Professor of Geology and Geophysics, MIT, Cambridge, USA
- 1984 - 1988 Assistant Professor of Geology and Geophysics, MIT, Cambridge, USA
- 1982 - 1984 Post-Doctoral Associate, Harvard University, Cambridge USA
- 1982 PhD in Geology and Geophysics, MIT, Cambridge, USA
- 1977 Bachelor of Arts in Physics, Harvard University, Cambridge, USA

Functions in Scientific Societies and Committees (Selection)

- since 2016 Member, Committee, American Geophysical Union (AGU), Tectonophysics, USA
- since 2016 Member, Committee, Donath Medal, Geological Society of America, USA
- 2013 - 2016 Member, Committee, Mueller Medal, European Geosciences Union
- 2012 - 2015 Member, Committee, Woollard Award, Geological Society of America, USA

- 2011 Member, External Review Committee, Department of Geology, University of California, Santa Barbara, USA
- 2009 - 2016 Editorial Board, Annual Reviews of Earth and Planetary Sciences

Honours and Awarded Memberships

- since 2022 Member, German National Academy of Sciences Leopoldina, Germany
- 2020 Cecil and Ida Green Professor, MIT, Cambridge, USA
- 2019 Bucher Medal, American Geophysical Union, USA
- 2018 Elected Member, American Academy of Arts and Sciences, USA
- 2013 Mueller Medal, European Union of Geosciences
- 2011 Woollard Award for Geophysics, Geological Society of America, USA
- 2004 Fellow, American Geophysical Union, USA
- 1990 Donath Medal, Geological Society of America, USA
- 1990 Senior Fellow, Geological Society of America, USA

Research Priorities

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Leigh Royden's research combines geological and geophysical observations with analytical and semi-analytical models. In this way the processes that control tectonic deformations at regional and global scales can be better understood. She examines regional tectonic systems and processes, for example the deformation of the continental lithosphere, retreating subduction, slab pull effects or lower-continental-crust flow in various tectonic settings. She has been able to show that the dynamic setting in which the mountain belts form during continental collision can be linked to the geologic expression of these belts. As a result, a dynamic setting can be inferred for ancient mountain belts. She researched this using the example of the Basin and Range Province (USA, Mexico), the Atlantic continental margin, and the Pannonian Basin. She applies similar concepts to crustal flow in tectonic systems such as Tibet.