

VITA

David C. Engebretson
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EDUCATION

- 12/82 Stanford University, Ph.D., Geophysics
 Thesis title: Relative Motions Between Oceanic and Continental Plates in
 the Pacific Basin
- 5/81 Stanford University, M.S., Geophysics
- 3/76 Western Washington University, B.A., Mathematics
- 6/74 Olympic Community College, A.A., A.S.

GRANTS, AWARDS, AND HONORS

- 5/00 Inducted into the “Hall of Fame” at Olympic Community College
- 6/96 Western Washington University, College of Arts and Sciences *Excellence
 in Teaching Award*
- 6/95-6/98 National Science Foundation Grant: Origin and History of the Eastern San
 Juan Islands, Washington, RUI (Research at Undergraduate Institutions)
 (\$100,000)
- 3/94-6/97 National Science Foundation Grant: “Collaborative Project: Crustal
 Evolution of the Bering Shelf-Chukchi Sea: (\$37,706)

- 5/91-5/94 NASA Joint Venture (JOVE) support for research at the Jet Propulsion Laboratory, Caltech, Pasadena, California and research, equipment, research assistantships and teaching release time at Western (\$114,000).
- 6/92 Western Washington University *Olscamp Outstanding Research Award*
- 4/91-6/91 Victoria University at Wellington, New Zealand, Department of Geology and Geophysics *Fellowship six weeks of research support* (\$3,000).
- 2/91-4/91 The University of Otago, New Zealand, *William Evans Fellowship*. Ten weeks of research support (\$5,000).
- 1/91 The University of Alberta at Calgary, Department of Geology and Geophysics *Gallagher Visiting Scientist*. A one-week series of lectures and seminars, all expenses paid by the University.
- 10/91 Geological Society of America, Structure and Tectonics *1990 Best Paper Award for Publication "Relative Motions between Oceanic and Continental Plates in the Pacific Basin"*.
- 1/89-8/91 Petroleum Research Fund Grant: "Computer Animation of 70 Million Years of Plate Interactions along Western North America: (\$40,000).
- 1/88-1/91 Ocean Drilling Program Tectonics Panel Member. International Ocean Research Committee that advises the use of the research vessel *Resolution*.
- 6/90-6/91 Washington State Department of Natural Resources Grant: "Geochronology of the Crescent Formation, Olympic Peninsula, Washington: (\$4,200).
- 6/89-6/90 Washington State Department of Natural Resources Grant: "A Detailed Study of two Transects within the Thickest portions of the Crescent Formation on the Eastern Olympic Peninsula, Washington" (\$2,500)
- 1/89-12/89 National Science Foundation Grant: "Global Investigation of Asymmetric Seafloor Spreading" (\$25,000).
- 1/89-12/90 National Science Foundation Grant: "paleomagnetism and Travel History of the Tikchik and Related Terranes of Southwest Alaska" (\$30,000)

- 6/87-12/87 Faculty Development Grant, Western Washington University (\$250).
- 6/86-9/86 Western Washington University BFR Summer Research Grant: “Northeast Pacific Plate Geometries for the past 40 Million years” (\$3,500)
- 1/85-12/85 Arco Research Labs, Plano, Texas, Grant: “Tectonic Evolution of Southern Alaska” (\$11,000).
- 9/78-6/79 Cecil and Ida Green Fellowship, Stanford University

EMPLOYMENT EXPERIENCE

- 1/93-
present Professor, Department of Geology, Western Washington University, Bellingham, WA.
- 7/89-1/93 Associate Professor, Department of Geology, Western Washington University, Bellingham, WA.
- 6/84-6/89 Associate Professor, Department of Geology, Western Washington University, Bellingham, WA.
- 1/83-6/84 Lecturer (half-time), Department of Geology, Western Washington University, Bellingham, WA.
- 1/83-9/84 Research Associate, Department of Geology, Western Washington University, Bellingham, WA.
- 6/79-12/82 Research Assistant, Department of Geophysics, Stanford University, Stanford, CA
- 5/79-5/81 Geologist (part-time), U.S. Geological survey, Menlo Park, CA.
- 6/78-9/78 Research Assistant in Geophysics, Department of Geology, Western Washington University, Bellingham, WA.
- 9/77-3/78 Mathematics Instructor, Olympic Community College, Bremerton, WA

9/76-6/77 Graduate Teaching Assistant, Department of Geology, Western Washington University, Bellingham, WA

3/74-9/74 Meteorology Instructor, Olympic Community College, Bremerton, WA

PUBLICATIONS

Journal Articles, Pamphlets, and Chapters in Books (not including abstracts)

In preparation or in press:

Engebretson, D.C., and Lori K. Roberts, Characterization of seismicity in the northern Puget Lowlands: Evidence for active faulting.

Blake, M.C., Jr. and D.C. Engebretson, Revised terrane trajectories for the Franciscan Complex and older terranes of western North America.

Engebretson, D.C., D.J. Easterbrook, and D.J. Kovanen, Relationships of very large, deep-seated, bedrock landslides and concentrated shallow seismicity.

Engebretson, D.C. and S. Kirby, Localized interslab earthquakes and associated forearc basin subsidence in the Cascadia Subduction Zone: Mechanisms and earthquake hazards implications.

Burmester, R.F., M.C. Blake, Jr. and D.C. Engebretson, 1999, Remagnetization during the Cretaceous Normal Superchron in the Eastern San Juan Islands, WA: Implications for interpretation of structural elements (in press, *J. Geophys. Res.*).

Engebretson, D.C., and M.E. Beck, Jr., Great circles make great geologic boundaries. (submitted to *Tectonics*).

Babcock, R.S., C. Suczek, and D.C. Engebretson, 1994, The Crescent Terrane, *Washington State Department of Geology and Earth Resources Bulletin*, 80, 141-157.

Kelsey, H., D.C. Engebretson, C. Mitchell, and R. Tichnor, 1994, Topographic form of the Coast Ranges of the Cascadia Margin in relation to coastal uplift rates and plate subduction, *Journal Geophys. Res.*, 99, 12,245-12,255.

- Babcock, R.S., R.F. Burmester, A. Warnock, and D.C. Engebretson, 1993, A rifted-margin origin for the Crescent Basalts and related rocks from the northern Coast Range volcanic province of Washington and British Columbia, *J. Geophys. Res.*, 97, 6799-6821.
- Warnock, A., R. Burmester, and D.C. Engebretson, 1993, Paleomagnetism and tectonics of the Crescent Formation, Northern Olympic Mountains, Washington, *Journal Geophys. Res.* 98, 11,729-11,741.
- Lithgow-Bertelloni, C., M.A. Richards, Y. Ricard, R.J. O'Connell, and D.C. Engebretson, 1993, Toroidal-poloidal partitioning of plate motions since 120 Ma, *Geophys. Res. Let.* 5, 375-378.
- Engebretson, D.C., K. Kelley, H. Cashman, and M.R. Richards, 1992, 180 million years of subduction, *GSA Today* cover article, May issue, 7 p.
- Richards, M.R. and D.C. Engebretson, 1992, Large-scale mantle convection and the history of subduction, *Nature*, 355, 437-440.
- Umhoefer, P., J. Dragovich, J. Cary, and D.C. Engebretson, 1989, A rifted-margin origin for the Crescent Basalts and related rocks from the northern Coast Range volcanic province of Washington and British Columbia, *J. Geophys. Res.*, 97, 6799-6821.
- Cox, A., M. Debiche, and D.C. Engebretson, 1989, Terrane trajectories and plate interactions along continental margins in the north Pacific basin, *The Evolution of the Pacific Ocean Margins*, edited by Z. Ben-Avraham, Oxford University Press, New York, 20-35.
- Engebretson, D.C., A. Cox, and M. Debiche, 1987, Reconstructions, plate interactions, and trajectories of oceanic and continental plates in the Pacific basin, in *Circum-Pacific Orogenic Belts and Evolution of the Pacific Ocean Basin*, *Geodyn. Ser.*, edited by J. Monger and J. Francheteau, AGU, Washington, D.C., 18, 19-27.
- Debiche, M., A. Cox, and D.C. Engebretson, 1987, The motion of allochthonous terranes across the Pacific basin, *Geol. Soc. Amer. Special Paper 207*, 49 p.

- Harbert, W., L. Frei, A. Cox, and D.C. Engebretson, 1987, Relative motions between Eurasia and North America in the Bering Sea region, *Tectonophysics*, 134, 239-261.
- Engebretson, D.C., 1987, Cenozoic tectonic framework of northern California, 1987, in *Tectonics, Sedimentation, and Evolution of the Eel River and other Coastal Basins in Northern California*, Misc. Publ. #37, edited by H. Schymiczek, and R. Suchsland, San Joaquin Geological Society, Bakersfield, Cal., 13-14.
- Gromme, C., M. Beck, Jr., R. Wells, and D.C. Engebretson, 1986, Paleomagnetism of the Tertiary Clarno Formation of central Oregon and its significance on the tectonic history of the Pacific Northwest, *J. Geophys. Res.*, 91, 14,089-14,103.
- Engebretson, D.C., R.G. Gordon, and A. Cox, 1985, Relative motions between oceanic and continental plates in the Pacific basin, *Geol. Soc. Amer. Special Paper* 206, 59 p.
- Cox, A., and D.C. Engebretson, 1985, Change in motion of the Pacific plate at 5 MYBP, *Nature*, 313, 472-474.
- Blake, M.C., Jr., D.C. Engebretson, A.S. Jayko, and D.L. Jones, 1985, Tectonostratigraphic terranes in southwest Oregon, in *Tectonostratigraphic Terranes of the Circum-Pacific Region*, Earth Science Series, edited by D.G. Howell, Circum-Pacific Council for Energy and Mineral Resources, 1, 147-157.
- Engebretson, D.C., A. Cox, and G.A. Thompson, 1984, Correlation of plate motions with continental tectonics: Laramide to Basin-Range, *Tectonics*, 3, 115-119.
- Engebretson, D.C., A. Cox, and R.G. Gordon, 1984, Relative motions between oceanic plates of the Pacific basin, *J. Geophys. Res.*, 89, 10,291-10,310.
- Curry, F., A. Cox, and D.C. Engebretson, 1984, Paleomagnetism of Franciscan rocks in the Marin Headlands, in *Franciscan Geology of Northern California*, edited by M.C. Blake, Jr., Pacific section, S.E.P.M., Los Angeles, CA, 43, 89-98.

- Wallace, W.K., and D.C. Engebretson, 1984, Relationships between plate motions and late Cretaceous to Paleogene magmatism in southwestern Alaska, *Tectonics*, 3, 295-315.
- Page, B.M., and D.C. Engebretson, 1984, Correlation between the geologic record and computed plate motions for central California, *Tectonics*, 3, 133-155.
- Wells, R.E., D.C. Engebretson, P.D. Snavely, Jr., and R.S. Coe, 1984, Cenozoic plate motions and the volcano-tectonic evolution of western Oregon and Washington, *Tectonics*, 3, 275-294.
- Henderson, L., R. Gordon, and D.C. Engebretson, 198, Mesozoic aseismic ridges on the Farallon plate and southward migration of shallow subduction during the Laramide Orogeny, *Tectonics*, 3, 121-132.
- Cox, A., and D.C. Engebretson, 1983, The patchwork Earth, in *Science Year, The World Book Science Annual, 1984*, edited by A. Tressler, World Book, Inc., Chicago, Ill., 182-195.
- Fox, K.F., and D.C. Engebretson, 1983, Horizontal tectonic stress during the Late Cenozoic in the northwestern United States, *U.S. Geol. Surv. Open File Report 83-19*, 141-164.
- Vallier, T. and D.C. Engebretson, 1983, The Blue Mountains island arc of Oregon, Idaho, and Washington: an allochthonous coherent terrane from the ancestral western Pacific Ocean?, *Proceedings of the Circum-Pacific Terrane Conference*, edited by D.G. Howell, D. Jones, A. Cox, and A. Nur, Stanford University publications, Stanford, Ca., 197-199.
- Engebretson, D.C., M. Debiche, and A. Cox, 1983, Plate motions, paleomagnetism, and terrane displacement histories, in *Proceedings of the Circum-Pacific Terrane Conference*, edited by D.G. Howell, D. Jones, A. Cox, and A. Nur, Stanford University Publications, Stanford, Ca., 83-85.
- Engebretson, D.C., A. Cox, and R. Gordon, 1983, Relative motions between oceanic and continental plates in the Pacific basin, in *Proceedings of the Circum-Pacific Terrane Conference*, edited by D.G. Howell, D. Jones, A. Cox, and A. Nur, Stanford University Publications, Stanford, Ca., 80-82.

- Cox, A., M. Debiche, R.B. Hart, and D.C. Engebretson, 1983, Computer animation of plate tectonics, in *Proceedings of the Circum-Pacific Terrane Conference*, edited by D.G. Howell, D. Jones, A. Cox, and A. Nur, Stanford University Publications, Stanford, Ca., 71-73.
- Beck, M.E., Jr., and D.C. Engebretson, 1982, Paleomagnetism of small basalt exposures in the west Puget Sound area, Washington, and speculations of the accretionary origin of the Olympic Mountains, *J. Geophys. Res.*, 85, 3755-3760.
- Beck, M.E., Jr., R. Burmester, D. Engebretson, and R. Schoonover, 1981, Northward translation of Mesozoic batholiths, western North America: paleomagnetic evidence and tectonic significance, *Geofisica Internacional*, 20, 143-162.
- Engebretson, D.C. and M.E. Beck, Jr., 1978, On the shape of directional data sets, *J. Geophys. Res.*, 83, 5979-5982.
- Engebretson, D.C., 1977, A ruler and compass construction for finding limiting points, *J. Undergrad. Math.*, 9, 51-54.

RECENT OTHER ACTIVITIES

- Chair, Geology 101 Reform Committee; included organizational meetings throughout the summer and weekly meetings with the Geol. 101 teaching assistants.
- Member, WWU Provost Search Committee; at the request of President Karen Morse.
- Authored Geology 455/555 “Climate-related Geologic Hazards” in order to expand class offerings. Also involved in improving the Department’s ability to teach applied geophysical techniques for environmental aspects of geology (Geology 452).
- Reviewed scientific papers and proposals for: *Geology*, *Journal of Geophysical Research*, *Geological Society of America Bulletin*, and *National Science Foundation*.
- Presented earthquake preparedness talks at the following gatherings: Bellingham Kiwanas, Bellingham Lions Club, Bellingham Police Department, St. Joseph Hospital, Lummi Elementary School, KVOS Television Safety Awareness Seminar, KGMI Radio, WWU Retirement Club, Family Assistance Network, Bellingham Fire Department, Squalicum High School.
- Member, Geophysicist Search Committee
- Chair, Hydrologist Search Committee

- Chair, Excellence in Teaching Award Committee
- Worked with Washington State parks and Division of Natural Resources to help delineate geological resources on state lands and develop interpretive displays for the general public.
- Helped develop science research projects with Sehome High School
- Organized and convened special symposium during 1995 GACMAC meeting, Victoria, B.C. with E. Irving